

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/31/2018

Reviewed on 10/31/2018

1 Identification

- **Product identifier**
- **Trade name:** Paraformaldehyde 20% Solution, EM Grade
- **Article number:** 15713, 15713-SP, 15713-S
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Electron Microscopy Sciences
 1560 Industry Road
 USA-Hatfield, PA 19440
 Tel: 215-412-8400 Fax: 215-412-8450
 email: sgkcck@aol.com
 www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**
 ChemTrec 1-800-424-9300 Contract CCN7661
 1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 1B H350 May cause cancer.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Flam. Liq. 4 H227 Combustible liquid.

- **Label elements**

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS07



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**
formaldehyde

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· **Hazard statements**

Combustible liquid.
 Harmful if swallowed, in contact with skin or if inhaled.
 Causes skin irritation.
 Causes serious eye irritation.
 May cause an allergic skin reaction.
 Suspected of causing genetic defects.
 May cause cancer.

· **Precautionary statements**

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep away from flames and hot surfaces. – No smoking.
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Contaminated work clothing must not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.
 If swallowed: Call a poison center/doctor if you feel unwell.
 Rinse mouth.
 If on skin: Wash with plenty of water.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing.
 IF exposed or concerned: Get medical advice/attention.
 Take off contaminated clothing and wash it before reuse.
 If skin irritation or rash occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.
 Store in a well-ventilated place. Keep cool.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

50-00-0	formaldehyde	>10-≤25%
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4 First-aid measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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· Protective Action Criteria for Chemicals

· PAC-1:		
50-00-0	formaldehyde	0.90 ppm
· PAC-2:		
50-00-0	formaldehyde	14 ppm
· PAC-3:		
50-00-0	formaldehyde	56 ppm

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
*Ensure good ventilation/exhaustion at the workplace.
 Open and handle receptacle with care.
 Prevent formation of aerosols.*
- **Information about protection against explosions and fires:** *Keep respiratory protective device available.*
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** *No special requirements.*
- **Information about storage in one common storage facility:** *Not required.*
- **Further information about storage conditions:** *Keep receptacle tightly sealed.*
- **Specific end use(s)** *No further relevant information available.*

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** *No further data; see item 7.*
- **Control parameters**

· Components with limit values that require monitoring at the workplace:	
50-00-0 formaldehyde	
PEL	Short-term value: 2 ppm Long-term value: 0.75 ppm <i>see 29 CFR 1910.1048(c)</i>
REL	Long-term value: 0.016 ppm Ceiling limit value: 0.1* ppm <i>*15-min; See Pocket Guide App. A</i>
TLV	Short-term value: 0.37 mg/m ³ , 0.3 ppm Long-term value: 0.12 mg/m ³ , 0.1 ppm DSEN; RSEN

- **Additional information:** *The lists that were valid during the creation were used as basis.*
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
*Keep away from foodstuffs, beverages and feed.
 Immediately remove all soiled and contaminated clothing.
 Wash hands before breaks and at the end of work.
 Store protective clothing separately.
 Avoid contact with the eyes and skin.*

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· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid

Color: Clear

· **Odor:** Characteristic

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: >93 °C (>199.4 °F)

· **Flash point:** >60 °C (>140 °F)

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:** 300 °C (572 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Not determined.

· **Explosion limits:**

Lower: 7 Vol %

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Upper:	73 Vol %
· Vapor pressure at 20 °C (68 °F):	23 hPa (17.3 mm Hg)
· Density at 20 °C (68 °F):	0.962 g/cm ³ (8.02789 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	20.0 %
Water:	80.0 %
VOC content:	20.00 %
	835.1 g/l / 6.97 lb/gal
· Solids content:	0.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

· LD/LC50 values that are relevant for classification:

50-00-0 formaldehyde

Oral LD50 >200 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Harmful

Irritant

Carcinogenic.

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· **Carcinogenic categories**· **IARC (International Agency for Research on Cancer)**

50-00-0 formaldehyde	I
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· **NTP (National Toxicology Program)**

50-00-0 formaldehyde	K
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· **OSHA-Ca (Occupational Safety Health Administration)**

50-00-0 formaldehyde	
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12 Ecological information

· **Toxicity**· **Aquatic toxicity:** No further relevant information available.· **Persistence and degradability** No further relevant information available.· **Behavior in environmental systems:**· **Bioaccumulative potential** No further relevant information available.· **Mobility in soil** No further relevant information available.· **Additional ecological information:**· **General notes:**

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**· **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**· **Recommendation:** Disposal must be made according to official regulations.· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**· **DOT, ADR, IMDG, IATA** UN1993· **UN proper shipping name**

· DOT	Flammable liquids, n.o.s.
· ADR	1993 FLAMMABLE LIQUID, N.O.S.
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S.

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· **Transport hazard class(es)**· **DOT**· **Class** 3 Flammable liquids· **ADR**· **Class** 3 Flammable liquids· **IMDG, IATA**· **Class** Void· **Packing group**· **DOT, ADR, IMDG, IATA** III· **Environmental hazards:** Not applicable.· **Special precautions for user** Warning: Flammable liquids· **Stowage Category** A· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.· **Transport/Additional information:**· **DOT**· **Quantity limitations** On passenger aircraft/rail: 60 L
On cargo aircraft only: 220 L· **ADR**· **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml· **IMDG**· **Limited quantities (LQ)** 5L
· **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml· **UN "Model Regulation":** UN 1993 FLAMMABLE LIQUID, N.O.S., 3, III

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Sara**· **Section 355 (extremely hazardous substances):**

50-00-0 formaldehyde

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· **Section 313 (Specific toxic chemical listings):**

50-00-0 formaldehyde

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

50-00-0 formaldehyde

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

50-00-0 formaldehyde

B1

· **TLV (Threshold Limit Value established by ACGIH)**

50-00-0 formaldehyde

A2

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

50-00-0 formaldehyde

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS07 GHS08

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

formaldehyde

· **Hazard statements**

Combustible liquid.

Harmful if swallowed, in contact with skin or if inhaled.

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

May cause cancer.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from flames and hot surfaces. – No smoking.

Avoid breathing dust/fume/gas/mist/vapors/spray

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing must not be allowed out of the workplace.

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Wear protective gloves/protective clothing/eye protection/face protection.
 If swallowed: Call a poison center/doctor if you feel unwell.
 Rinse mouth.
 If on skin: Wash with plenty of water.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 IF exposed or concerned: Get medical advice/attention.
 Take off contaminated clothing and wash it before reuse.
 If skin irritation or rash occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.
 Store in a well-ventilated place. Keep cool.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** 10/31/2018 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety **Health**

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flam. Liq. 4: Flammable liquids – Category 4

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Skin Sens. 1: Skin sensitisation – Category 1

Muta. 2: Germ cell mutagenicity – Category 2

Carc. 1B: Carcinogenicity – Category 1B

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Revision: 31.10.2018

1 Identification

- **Product identifier**
- **Trade name:** Paraformaldehyde 20% Solution, EM Grade
- **Article number:** 15713, 15713-SP, 15713-S
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- ProSciTech Pty Ltd
11 Carlton Street, Kirwan QLD 4817 Australia
Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
Website: ems.proscitech.com
- Emgrid Australia Pty. Ltd.
P.O. Box 118
The Patch VIC 3792
Australia
Tel: 03 9752 1785
Fax: 03 9752 1784
Website: www.emgrid.com.au
- **Further information obtainable from:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazard(s) Identification

- **Classification of the substance or mixture**



GHS08 health hazard

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 1B H350 May cause cancer.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H312 Harmful in contact with skin.

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2A H319 Causes serious eye irritation.

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Skin Sens. 1 H317 May cause an allergic skin reaction.

Flam. Liq. 4 H227 Combustible liquid.

· **Label elements**

· **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS07 GHS08

· **Signal word** *Danger*

· **Hazard-determining components of labelling:**

formaldehyde

· **Hazard statements**

Combustible liquid.

Harmful if swallowed.

Harmful in contact with skin.

Harmful if inhaled.

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

May cause cancer.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from flames and hot surfaces. – No smoking.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

Rinse mouth.

IF ON SKIN: Wash with plenty of water.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

IF exposed or concerned: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

If skin irritation or rash occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Wash contaminated clothing before reuse.

In case of fire: Use for extinction: CO₂, powder or water spray.

Store in a well-ventilated place. Keep cool.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

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Trade name: Paraformaldehyde 20% Solution, EM Grade

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· **vPvB:** Not applicable.

3 Composition and Information on Ingredients

- **Chemical characterisation:** Mixtures
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

50-00-0 formaldehyde

>10- ≤25%

- **Additional information:** For the wording of the listed hazard phrases refer to section 16.

4 First Aid Measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Call for a doctor immediately.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

7 Handling and Storage

- **Handling:**
- **Precautions for safe handling**
 Ensure good ventilation/exhaustion at the workplace.
 Open and handle receptacle with care.
 Prevent formation of aerosols.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls and personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

50-00-0 formaldehyde

NES	Short-term value: 2.5 mg/m ³ , 2 ppm Long-term value: 1.2 mg/m ³ , 1 ppm Sen
WES	Short-term value: 2.5 mg/m ³ , 2 ppm Long-term value: 1.2 mg/m ³ , 1 ppm Sen

- **Additional information:** The lists valid during the making were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 Keep away from foodstuffs, beverages and feed.
 Immediately remove all soiled and contaminated clothing
 Wash hands before breaks and at the end of work.
 Store protective clothing separately.
 Avoid contact with the eyes and skin.
- **Respiratory protection:**
 In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
 Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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AU

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Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

9 Physical and Chemical Properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Liquid
Colour:	Clear
Odour:	Characteristic
Odour threshold:	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	>93 °C

· **Flash point:** >60 °C

· **Flammability (solid, gas):** Not applicable.

· **Ignition temperature:** 300 °C

· **Decomposition temperature:** Not determined.

· **Auto-ignition temperature:** Product is not selfigniting.

· **Explosive properties:** Not determined.

· **Explosion limits:**

Lower:	7 Vol %
Upper:	73 Vol %

· **Vapour pressure at 20 °C:** 23 hPa

Density at 20 °C:	0.962 g/cm ³
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.

· **Solubility in / Miscibility with water:**

Fully miscible.

· **Partition coefficient: n-octanol/water:** Not determined.

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Safety Data Sheet

according to WHS Regulations

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Trade name: Paraformaldehyde 20% Solution, EM Grade

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· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	20.0 %
Water:	80.0 %
VOC (EC)	20.00 %
· Solids content:	
	0.0 %
· Other information	
	No further relevant information available.

10 Stability and Reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological Information

- **Information on toxicological effects**
- **Acute toxicity**

- **LD/LC50 values relevant for classification:**

50-00-0 formaldehyde

Oral | LD50 | >200 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Irritating effect.
- **Respiratory or skin sensitisation** Sensitisation possible through skin contact.
- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

Irritant

Carcinogenic.

- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
- Muta. 2, Carc. 1B

12 Ecological Information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behaviour in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

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Safety Data Sheet according to WHS Regulations

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Revision: 31.10.2018

Trade name: Paraformaldehyde 20% Solution, EM Grade


(Contd. of page 6)

- **Additional ecological information:**
- **General notes:**
*Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
 Do not allow product to reach ground water, water course or sewage system.
 Danger to drinking water if even small quantities leak into the ground.*
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · ADG, IMDG, IATA 	<p style="text-align: right;">UN1993</p>
<ul style="list-style-type: none"> · UN proper shipping name · ADG · IMDG, IATA 	<p style="text-align: right;">1993 FLAMMABLE LIQUID, N.O.S. FLAMMABLE LIQUID, N.O.S.</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · ADG 	<div style="text-align: center;">  </div> <p style="text-align: right;">3 Flammable liquids.</p>
<ul style="list-style-type: none"> · IMDG, IATA · Class 	<p style="text-align: right;">not regulated</p>
<ul style="list-style-type: none"> · Packing group · ADG, IMDG, IATA 	<p style="text-align: right;">III</p>
<ul style="list-style-type: none"> · Environmental hazards: 	<p style="text-align: right;">Not applicable.</p>
<ul style="list-style-type: none"> · Special precautions for user · Stowage Category 	<p style="text-align: right;">Warning: Flammable liquids. A</p>
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of Marpol and the IBC Code 	<p style="text-align: right;">Not applicable.</p>

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Trade name: Paraformaldehyde 20% Solution, EM Grade

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· **Transport/Additional information:**

· **ADG**

- **Limited quantities (LQ)** 5L
- **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

· **IMDG**

- **Limited quantities (LQ)** 5L
- **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

- **UN "Model Regulation":** UN 1993 FLAMMABLE LIQUID, N.O.S., 3, III

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **Australian Inventory of Chemical Substances**

All ingredients are listed.

· **Standard for the Uniform Scheduling of Medicines and Poisons**

50-00-0 formaldehyde S2, S6, S10

- **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS07 GHS08

- **Signal word** *Danger*

· **Hazard-determining components of labelling:**

formaldehyde

· **Hazard statements**

- Combustible liquid.
- Harmful if swallowed.
- Harmful in contact with skin.
- Harmful if inhaled.
- Causes skin irritation.
- Causes serious eye irritation.
- May cause an allergic skin reaction.
- Suspected of causing genetic defects.
- May cause cancer.

· **Precautionary statements**

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Keep away from flames and hot surfaces. – No smoking.
- Avoid breathing dust/fume/gas/mist/vapours/spray.
- Wash thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Use only outdoors or in a well-ventilated area.

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Trade name: Paraformaldehyde 20% Solution, EM Grade

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- Contaminated work clothing should not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.
 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
 Rinse mouth.
 IF ON SKIN: Wash with plenty of water.
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing.
 IF exposed or concerned: Get medical advice/attention.
 Take off contaminated clothing and wash it before reuse.
 If skin irritation or rash occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.
 Store in a well-ventilated place. Keep cool.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Directive 2012/18/EU**
 - **Named dangerous substances - ANNEX I** None of the ingredients is listed.
 - **National regulations:**
 - **Information about limitation of use:**
 Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.
 Exceptions can be made by the authorities in certain cases.
 - **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 IMDG: International Maritime Code for Dangerous Goods
 IATA: International Air Transport Association
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 VOC: Volatile Organic Compounds (USA, EU)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 Flam. Liq. 4: Flammable liquids – Category 4
 Acute Tox. 4: Acute toxicity – Category 4
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
 Skin Sens. 1: Skin sensitisation – Category 1
 Muta. 2: Germ cell mutagenicity – Category 2
 Carc. 1B: Carcinogenicity – Category 1B

Safety Data Sheet

acc. to OSHA HCS

Printing date 10/31/2018

Reviewed on 10/31/2018

1 Identification

- **Product identifier**
- **Trade name:** Paraformaldehyde 20% Solution, EM Grade
- **Article number:** 15713, 15713-SP, 15713-S
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Electron Microscopy Sciences
 1560 Industry Road
 USA-Hatfield, PA 19440
 Tel: 215-412-8400 Fax: 215-412-8450
 email: sgkcck@aol.com
 www.emsdiasum.com
- **Information department:** Product safety department
- **Emergency telephone number:**
 ChemTrec 1-800-424-9300 Contract CCN7661
 1-703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Germ Cell Mutagenicity - Category 2 H341 Suspected of causing genetic defects.

Carcinogenicity - Category 1B H350 May cause cancer.



GHS07

Acute Toxicity (Oral) - Category 4 H302 Harmful if swallowed.

Acute Toxicity (Dermal) – Category 4 H312 Harmful in contact with skin.

Acute Toxicity (Inhalation) - Category 4 H332 Harmful if inhaled.

Skin Irritation - Category 2 H315 Causes skin irritation.

Eye Irritation - Category 2A H319 Causes serious eye irritation.

Skin Sensitizer - Category 1 H317 May cause an allergic skin reaction.

Flammable Liquids - Category 4 H227 Combustible liquid.

- **Label elements**

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**



GHS07



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**
formaldehyde

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Trade name: Paraformaldehyde 20% Solution, EM Grade

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· **Hazard statements**

Combustible liquid.
 Harmful if swallowed, in contact with skin or if inhaled.
 Causes skin irritation.
 Causes serious eye irritation.
 May cause an allergic skin reaction.
 Suspected of causing genetic defects.
 May cause cancer.

· **Precautionary statements**

Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 Avoid breathing dust/fume/gas/mist/vapours/spray.
 Wash thoroughly after handling.
 Do not eat, drink or smoke when using this product.
 Use only outdoors or in a well-ventilated area.
 Contaminated work clothing should not be allowed out of the workplace.
 Wear protective gloves/protective clothing/eye protection/face protection.
 If swallowed: Call a poison center/doctor if you feel unwell.
 Rinse mouth.
 If on skin: Wash with plenty of water.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
 Continue rinsing.
 IF exposed or concerned: Get medical advice/attention.
 Take off contaminated clothing and wash it before reuse.
 Specific measures (see on this label).
 If skin irritation or rash occurs: Get medical advice/attention.
 If eye irritation persists: Get medical advice/attention.
 Take off immediately all contaminated clothing.
 Wash contaminated clothing before reuse.
 In case of fire: Use for extinction: CO₂, powder or water spray.
 Store in a well-ventilated place.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

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Trade name: Paraformaldehyde 20% Solution, EM Grade

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· Dangerous components:

50-00-0 formaldehyde

10-30% w/w *

* Actual concentration ranges are withheld as a trade secret.

4 First-aid measures

· Description of first aid measures

· General information:

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· After inhalation:

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

· After skin contact: Immediately wash with water and soap and rinse thoroughly.

· After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· After swallowing: Immediately call a doctor.

· Information for doctor:

· Most important symptoms and effects, both acute and delayed No further relevant information available.

· Indication of any immediate medical attention and special treatment needed

No further relevant information available.

5 Fire-fighting measures

· Extinguishing media

· Suitable extinguishing agents:

CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· Special hazards arising from the substance or mixture No further relevant information available.

· Advice for firefighters

· Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures Not required.

· Environmental precautions:

Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

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Trade name: Paraformaldehyde 20% Solution, EM Grade

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7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
*Ensure good ventilation/exhaustion at the workplace.
 Open and handle receptacle with care.
 Prevent formation of aerosols.*
- **Information about protection against explosions and fires:** *Keep respiratory protective device available.*
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** *No special requirements.*
- **Information about storage in one common storage facility:** *Not required.*
- **Further information about storage conditions:** *Keep receptacle tightly sealed.*
- **Specific end use(s)** *No further relevant information available.*

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** *No further data; see item 7.*
- **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

50-00-0 formaldehyde

<i>EL</i>	<i>Long-term value: 0.3 ppm Ceiling limit value: 1 ppm ACGIH A1; IARC 1; S(D), S(R)</i>
<i>EV</i>	<i>Short-term value: 1.0 ppm</i>
<i>Ceiling limit value</i>	<i>1.5 ppm</i>

- **Additional information:** *The lists that were valid during the creation were used as basis.*
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
*Keep away from foodstuffs, beverages and feed.
 Immediately remove all soiled and contaminated clothing.
 Wash hands before breaks and at the end of work.
 Store protective clothing separately.
 Avoid contact with the eyes and skin.*
- **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

*The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
 Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
 Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation*

(Contd. on page 5)

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Trade name: Paraformaldehyde 20% Solution, EM Grade

(Contd. of page 4)

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid

Color: Clear

· **Odor:** Characteristic

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: >93 °C

· **Flash point:** >60 °C

· **Flammability (solid, gaseous):** Not flammable.

· **Ignition temperature:** 300 °C

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Not determined.

· **Explosion limits:**

Lower: 7 Vol %

Upper: 73 Vol %

· **Vapor pressure at 20 °C:** 23 hPa

· **Density at 20 °C:** 0.962 g/cm³

· **Relative density** Not determined.

· **Vapor density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

Water: Fully miscible.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

Dynamic: Not determined.

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Reviewed on 10/31/2018

Trade name: Paraformaldehyde 20% Solution, EM Grade

(Contd. of page 5)

Kinematic:	Not determined.
Solvent content:	
Organic solvents:	20.0 %
Water:	80.0 %
Solids content:	0.0 %
Other information	No further relevant information available.

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

LD/LC50 values that are relevant for classification:		
50-00-0 formaldehyde		
Oral	LD50	>200 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant
Carcinogenic.

- **Carcinogenic categories**

IARC (International Agency for Research on Cancer)		
50-00-0	formaldehyde	I
NTP (National Toxicology Program)		
50-00-0	formaldehyde	K

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

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Safety Data Sheet

acc. to OSHA HCS

Printing date 10/31/2018

Reviewed on 10/31/2018

Trade name: Paraformaldehyde 20% Solution, EM Grade



(Contd. of page 6)

- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** *Disposal must be made according to official regulations.*
- **Recommended cleansing agent:** *Water, if necessary with cleansing agents.*

14 Transport information

· UN-Number	UN1993
· DOT, TDG, IMDG, IATA	
· UN proper shipping name	
· DOT	<i>Flammable liquids, n.o.s.</i>
· TDG	<i>1993 FLAMMABLE LIQUID, N.O.S.</i>
· IMDG, IATA	<i>FLAMMABLE LIQUID, N.O.S.</i>
· Transport hazard class(es)	
· DOT	
	
· Class	<i>3 Flammable liquids</i>
· TDG (Transport dangerous goods):	
	
· Class	<i>3 Flammable liquids</i>
· IMDG, IATA	
· Class	<i>Void</i>
· Packing group	
· DOT, TDG, IMDG, IATA	<i>III</i>
· Environmental hazards:	<i>Not applicable.</i>
· Special precautions for user	<i>Warning: Flammable liquids</i>

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Trade name: Paraformaldehyde 20% Solution, EM Grade

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· Stowage Category	A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· TDG	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 1993 FLAMMABLE LIQUID, N.O.S., 3, III

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

· Section 355 (extremely hazardous substances):

50-00-0 formaldehyde

· Section 313 (Specific toxic chemical listings):

50-00-0 formaldehyde

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Canadian substance listings:

· Canadian Domestic Substances List (DSL)

All ingredients are listed.

· Canadian Ingredient Disclosure list (limit 0.1%)

50-00-0 formaldehyde

· Canadian Ingredient Disclosure list (limit 1%)

None of the ingredients is listed.

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms



GHS07 GHS08

- **Signal word** Danger

(Contd. on page 9)

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acc. to OSHA HCS

Printing date 10/31/2018

Reviewed on 10/31/2018

Trade name: Paraformaldehyde 20% Solution, EM Grade

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· **Hazard-determining components of labeling:**

formaldehyde

· **Hazard statements**

Combustible liquid.

Harmful if swallowed, in contact with skin or if inhaled.

Causes skin irritation.

Causes serious eye irritation.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

May cause cancer.

· **Precautionary statements**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Call a poison center/doctor if you feel unwell.

Rinse mouth.

If on skin: Wash with plenty of water.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

IF exposed or concerned: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

Specific measures (see on this label).

If skin irritation or rash occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

Take off immediately all contaminated clothing.

Wash contaminated clothing before reuse.

In case of fire: Use for extinction: CO₂, powder or water spray.

Store in a well-ventilated place.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

· **Information about limitation of use:**

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.

Exceptions can be made by the authorities in certain cases.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of the latest revision of the safety data sheet 10/31/2018 / -**

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

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Printing date 10/31/2018

Reviewed on 10/31/2018

Trade name: Paraformaldehyde 20% Solution, EM Grade

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ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

CA

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 31.10.2018

Revision: 31.10.2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** Paraformaldehyde 20% Solution, EM Grade
- **Article number:** 15713, 15713-SP, 15713-S
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Muta. 2 H341 Suspected of causing genetic defects.
Carc. 1B H350 May cause cancer.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Acute Tox. 4 H312 Harmful in contact with skin.
Acute Tox. 4 H332 Harmful if inhaled.
Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335 May cause respiratory irritation.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS07



GHS08

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Trade name: Paraformaldehyde 20% Solution, EM Grade

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· **Signal word** *Danger*· **Hazard-determining components of labelling:***formaldehyde*· **Hazard statements***H302+H312+H332 Harmful if swallowed, in contact with skin or if inhaled.**H315 Causes skin irritation.**H319 Causes serious eye irritation.**H317 May cause an allergic skin reaction.**H341 Suspected of causing genetic defects.**H350 May cause cancer.**H335 May cause respiratory irritation.*· **Precautionary statements***P261 Avoid breathing dust/fume/gas/mist/vapours/spray.**P280 Wear protective gloves/protective clothing/eye protection/face protection.**P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**P322 Specific measures (see on this label).**P405 Store locked up.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.*· **2.3 Other hazards**· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.2 Chemical characterisation: Mixtures**· **Description:** Mixture of substances listed below with nonhazardous additions.· **Dangerous components:**

CAS: 50-00-0	formaldehyde	>10- ≤25%
EINECS: 200-001-8	 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331;  Muta. 2, H341; Carc. 1B, H350;  Skin Corr. 1B, H314;  Skin Sens. 1, H317	

· **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

· **4.1 Description of first aid measures**· **General information:***Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.*· **After inhalation:***Supply fresh air and to be sure call for a doctor.**In case of unconsciousness place patient stably in side position for transportation.*· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.· **After eye contact:***Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.*· **After swallowing:** Call for a doctor immediately.· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

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- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** Keep respiratory protective device available.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**

- **Ingredients with limit values that require monitoring at the workplace:**

50-00-0 formaldehyde

WEL	Short-term value: 2.5 mg/m ³ , 2 ppm Long-term value: 2.5 mg/m ³ , 2 ppm
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· **Additional information:** The lists valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid

Colour: Clear

· **Odour:** Characteristic

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/freezing point: Undetermined.

Initial boiling point and boiling range: >93 °C

· **Flash point:** >60 °C

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· Flammability (solid, gas):	Not applicable.
· Ignition temperature:	300 °C
· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Product is not selfigniting.
· Explosive properties:	Not determined.
· Explosion limits:	
Lower:	7 Vol %
Upper:	73 Vol %
· Vapour pressure at 20 °C:	23 hPa
· Density at 20 °C:	0.962 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Fully miscible.
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	20.0 %
Water:	80.0 %
VOC (EC)	20.00 %
Solids content:	0.0 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
Harmful if swallowed, in contact with skin or if inhaled.

· **LD/LC50 values relevant for classification:**

50-00-0 formaldehyde

Oral LD50 >200 mg/kg (rat)

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- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity**
Suspected of causing genetic defects.
- **Carcinogenicity**
May cause cancer.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**
May cause respiratory irritation.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- | | |
|---------------------------------------|-------------------------------|
| · 14.1 UN-Number | |
| · ADR, IMDG, IATA | UN1993 |
| · 14.2 UN proper shipping name | |
| · ADR | 1993 FLAMMABLE LIQUID, N.O.S. |

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· IMDG, IATA	FLAMMABLE LIQUID, N.O.S.
· 14.3 Transport hazard class(es)	
· ADR	
	
· Class	3 Flammable liquids.
· IMDG, IATA	
· Class	not regulated
· 14.4 Packing group	
· ADR, IMDG, IATA	III
· 14.5 Environmental hazards:	Not applicable.
· 14.6 Special precautions for user	Warning: Flammable liquids.
· Stowage Category	A
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 1993 FLAMMABLE LIQUID, N.O.S., 3, III

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- Directive 2012/18/EU
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 28
- **National regulations:**
- **Information about limitation of use:**
Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation.
Exceptions can be made by the authorities in certain cases.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant phrases**

- H301 Toxic if swallowed.
- H311 Toxic in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H331 Toxic if inhaled.
- H341 Suspected of causing genetic defects.
- H350 May cause cancer.

· **Abbreviations and acronyms:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 3: Acute toxicity – Category 3
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Corr. 1B: Skin corrosion/irritation – Category 1B
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- Skin Sens. 1: Skin sensitisation – Category 1
- Muta. 2: Germ cell mutagenicity – Category 2
- Carc. 1B: Carcinogenicity – Category 1B
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

GB

化学品安全技术说明书

根据 GB/T 16483-2008, GB/T 17519-2013

打印日期 2018.10.31

在 2018.10.31 审核

1 化学品及企业标识

- 产品识别者
- 化学品中文(英文)名称, 化学品俗名或商品名: Paraformaldehyde 20% Solution, EM Grade
- 商品编号: 15713, 15713-SP, 15713-S
- 相应纯物质或者混合物的相关下位用途及禁止用途 无相关详细资料。
- 原材料的应用/准备工作进行 实验室化学物
- 安全技术说明书内供应商详细信息
- 企业名称:
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- 可获取更多资料的部门: Product safety department
- 紧急联系电话号码:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 危险性概述

· 紧急情况概述:

纯净的, 液体, 可燃液体。 吞咽、皮肤接触或吸入有害。 造成皮肤刺激。 造成严重眼刺激。 可能导致皮肤过敏反应。 怀疑会导致遗传性缺陷。 可能致癌。

· GHS危险性类别



健康危害

生殖细胞致突变性 第2类 H341 怀疑会导致遗传性缺陷
致癌性 第1B类 H350 可能致癌



急性毒性(经口) 第4类 H302 吞咽有害
急性毒性(经皮肤) 第4类 H312 皮肤接触有害
急性毒性(吸入) 第4类 H332 吸入有害
皮肤腐蚀/刺激 第2类 H315 造成皮肤刺激
严重眼损伤/眼刺激 类别2A H319 造成严重眼刺激
敏化(皮肤) 第1类 H317 可能导致皮肤过敏反应

易燃液体 第4类 H227 可燃液体

· 标签因素

- **GHS卷标元素** 本产品根据化学物质分类及标记全球协调制度(GHS)进行了分类及标记。

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· 图示



GHS07 GHS08

· 名称 危险

· 标签上辨别危险的成份:

福尔马林溶液

· 危险字句

可燃液体

吞咽、皮肤接触或吸入有害

造成皮肤刺激

造成严重眼刺激

可能导致皮肤过敏反应

怀疑会导致遗传性缺陷

可能致癌

· 警戒字句

· 预防措施

规定远离火焰和热表面。禁止吸烟

避免吸入粉尘/烟/气体/烟雾/蒸气/喷雾

戴防护手套/穿防护服/戴防护眼罩/戴防护面具

· 事故响应

如进入眼睛:用水小心冲洗几分钟。如戴隐形眼镜并可方便地取出,取出隐形眼镜。继续冲洗

· 安全储存

存放处须加锁

· 废弃处置

处置内装物/容器按照地方/区域/国家/国际规章

· 其他有害性

· PBT(残留性、生物浓缩性、毒性物质) 及 vPvB(高残留性、高生物浓缩性物质)评价结果

· PBT(残留性、生物浓缩性、毒性物质) 不适用的

· vPvB(高残留性、高生物浓缩性物质): 不适用的

3 成分/组成信息

· 混合物

· 描述: 由以下含有无害添加剂的成分组成的混合物

· 危险的成分:

50-00-0	福尔马林溶液	>10-≤25%
	⚠ 急性毒性(经口) 第3类, H301; 急性毒性(经皮肤) 第3类, H311; 急性毒性(吸入) 第3类, H331; ⚠ 生殖细胞致突变性 第2类, H341; 致癌性 第1B类, H350; ⚠ 皮肤腐蚀/刺激 第1B类, H314; ⚠ 敏化(皮肤) 第1类, H317	

4 急救措施

· 应急措施要领

· 总说明: 中毒的症状可能会在几个小时以后才出现;因此在发生事故之后起码要有 48 小时的医疗观察.

· 吸入:

供给新鲜空气并且确保会叫医生.

万一病人不清醒时,请让病人侧躺以便移动.

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- **皮肤接触:** 马上用水和肥皂进行彻底的冲洗。
- **眼睛接触:** 张开眼睛在流水下冲洗数分钟. 如果症状仍然持续, 请咨询医生。
- **食入:** 马上召唤医生。
- **给医生的资料:**
- **最重要的急慢性症状及其影响** 无相关详细资料。
- **需要及时的医疗处理及特别处理的症状** 无相关详细资料。

5 消防措施

- **灭火方法**
- **灭火的方法和灭火剂:** 二氧化碳 (CO₂)、灭火粉末或洒水. 使用洒水或抗酒精泡沫灭火剂扑灭较大的火种。
- **特别危险性** 无相关详细资料。
- **特殊灭火方法**
- **消防人员特殊的防护装备:** 口腔呼吸保护装置。

6 泄漏应急处理

- **保护措施** 没有要求。
- **环境保护措施:**
用大量的水进行稀释。
切勿让其进入下水道/水面或地下水。
- **密封及净化方法和材料:**
吸收液体粘合原料 (沙粒、硅藻土、酸性粘合剂、通用粘合剂、锯屑)。
根据第 13 条条款弃置受污染物。
确保有足够的通风装置。
- **参照其他部分**
有关安全处理的资料请参阅第 7 节。
有关个人防护装备的资料请参阅第 8 节。
有关弃置的资料请参阅第 13 节。

7 操作处置与储存

- **操作处置**
- **储存**
确保工作间有良好的通风/排气装置。
小心打开及处理贮藏器。
防止气溶胶的形成。
- **有关火灾及防止爆炸的资料:** 提供呼吸保护装置。
- **混合危险性等安全储存条件**
- **储存:**
- **储存库和容器须要达到的要求:** 没有特别的要求。
- **有关使用一个普通的储存设施来储存的资料:** 不需要。
- **有关储存条件的更多资料:** 将容器密封。
- **具体的最终用户** 无相关详细资料。

8 接触控制和个体防护

- **工程控制方法:** 没有进一步数据; 见第 7 项。

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· 控制变数

· 在工作场需要监控的限值成分

50-00-0 福尔马林溶液

OEL (CN) 最高容许浓度: 0.5 mg/m³PEL (TW) PC-TWA: 1.2 mg/m³, 1 ppm

· 额外的资料: 制作期间有效的清单将作为基础来使用.

· 泄漏控制

· 个人防护设备:

· 一般保护和卫生措施:

远离食品、饮料和饲料.

立即除去所有的不洁的和被污染的衣服.

在休息之前和工作完毕后请清洗双手.

分开储存保护性衣服.

避免和眼睛及皮肤接触.

· 呼吸系统防护:

如果曾短暂接触或在低污染的情况下, 请使用呼吸过滤装置. 如果曾深入或较长时间接触, 请使用独立的呼吸保护装置.

· 手防护:



保护手套

手套的物料必须是不渗透性的, 且能抵抗该产品/物质/添加剂.

基于缺乏测试, 对于产品/制剂/化学混合物, 并不会提供手套材料的建议

选择手套材料时, 请注意材料的渗透时间, 渗透率和降解参数

· 手套材料

选择合适的手套不单取决于材料, 亦取决于质量特征, 以及来自哪一间生产厂家, 因为该产品是由很多材料配制而成, 手套材料的抵抗力并不可预计, 所以, 必须在使用之前进行检查

· 渗入手套材料的时间 请向劳保手套生产厂家获取准确的破裂时间并观察实际的破裂时间

· 眼睛防护:



密封的护目镜

9 理化特性

· 有关基本物理及化学特性的信息

· 一般说明

· 外观:

形状: 液体

颜色: 纯净的

· 气味: 有特性的

· 嗅觉阈限 未决定.

· pH值: 未决定.

· 条件的更改

熔点: 未确定的

(在 5 页继续)

化学品安全技术说明书

根据 GB/T 16483-2008, GB/T 17519-2013

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在 2018.10.31 审核

化学品中文(英文)名称, 化学品俗名或商品名 : Paraformaldehyde 20% Solution, EM Grade

(在 4 页继续)

· 沸点/初沸点和沸程:	>93 °C
· 闪点:	>60 °C
· 可燃性(固体、气体):	不适用的
· 点火温度:	300 °C
· 分解温度:	未决定.
· 自燃温度:	该产品是不自燃的
· 爆炸的危险性:	未决定.
· 爆炸极限:	
· 较低:	7 Vol %
· 较高:	73 Vol %
· 蒸气压 在 20 °C:	23 hPa
· 密度 在 20 °C:	0.962 g/cm ³
· 相对密度	未决定.
· 蒸气密度	未决定.
· 蒸发速率	未决定.
· 溶解性	
· 水:	完全可拌和的
· n-辛醇/水分配系数:	未决定.
· 黏性:	
· 动态:	未决定.
· 运动学的:	未决定.
· 溶剂成份:	
· 有机溶剂:	20.0 %
· 水:	80.0 %
· 固体成份:	0.0 %
· 其他信息	无相关详细资料。

10 稳定性和反应性

- 反应性 无相关详细资料。
- 稳定性
- 热分解/要避免的情况: 如果遵照规格使用则不会分解.
- 有害反应可能性 未有已知的危险反应.
- 应避免的条件 无相关详细资料。
- 不相容的物质: 无相关详细资料。
- 危险的分解产物: 未知有危险的分解产品.

CN

(在 6 页继续)

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11 毒理学信息

· 对毒性学影响的信息

· 急性毒性:

· 与分类相关的 LD/LC50 值:

50-00-0 福尔马林溶液

口腔	LD50	>200 mg/kg (rat)
----	------	------------------

· 主要的刺激性影响:

- **皮肤:** 刺激皮肤和粘膜.
- **在眼睛上面:** 刺激的影响.
- **致敏作用:** 通过皮肤接触可能造成敏化作用.

· 更多毒物的资料:

根据有关配制的一般欧盟分类指南的计算方法(刊印在最新版本),该产品显示以下的危险:

有害的
刺激性的
致癌的.

· 对以下组别可能产生影响的数据:

- **CMR作用(致癌、导致基因突变、对生殖系统有害)**
生殖细胞致突变性 第2类, 致癌性 第1B类

12 生态学信息

· 生态毒性

- **水生毒性:** 无相关详细资料。
- **持久性和降解性** 无相关详细资料。
- **环境系统习性:**
- **潜在的生物累积性** 无相关详细资料。
- **土壤内移动性** 无相关详细资料。
- **额外的生态学资料:**

· 总括注解:

水危害级别 2 (德国规例) (通过名单进行自我评估): 对水是危险的
不要让该产品接触地下水、水道或污水系统。
即使是小量的产品渗入地下也会对饮用水造成危险。

- **PBT(残留性、生物浓缩性、毒性物质) 及 vPvB(高残留性、高生物浓缩性物质)评价结果**
- **PBT(残留性、生物浓缩性、毒性物质)** 不适用的
- **vPvB(高残留性、高生物浓缩性物质):** 不适用的
- **其他副作用** 无相关详细资料。

13 废弃处置

· 废弃处置方法

- **建议:** 不能将该产品和家居垃圾一起丢弃. 不要让该产品接触污水系统.

· 受污染的容器和包装:

- **建议:** 必须根据官方的规章来丢弃.
- **建议的清洗剂:** 如有必要请使用水及清洁剂进行清洁.

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14 运输信息

· 联合国危险货物编号(UN号) · ADR, IMDG, IATA	UN1993
· UN适当装船名 · ADR · IMDG, IATA	1993 易燃液体, 未另作规定的 FLAMMABLE LIQUID, N.O.S.
· 运输危险等级 · ADR	
	
· 级别	3 易燃液体
· IMDG, IATA · Class	无效
· 包装组别 · ADR, IMDG, IATA	III
· 危害环境:	不适用的
· 用户特别预防措施 · Stowage Category	警告: 易燃液体 A
· MARPOL73/78(针对船舶引起的海洋污染预防协议) 附件书2及根据IBC Code(国际装船货物编码)的大量 运送	不适用的
· 运输/额外的资料:	
· ADR · Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "标准规定":	UN 1993 易燃液体, 未另作规定的, 3, III

15 法规信息

· 对相应纯物质或者混合物的安全、保健及环境法规/法律
· 危险化学品安全管理条例

· 危险化学品目录	
50-00-0	福尔马林溶液
· 新化学物质环境管理办法	
· 中国现有化学物质名录	
列出所有成分	

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· **GHS卷标元素** 本产品根据化学物质分类及标记全球协调制度(GHS)进行了分类及标记。

· **图示**



GHS07 GHS08

· **名称** 危险

· **标签上辨别危险的成份:**

福尔马林溶液

· **危险字句**

可燃液体

吞咽、皮肤接触或吸入有害

造成皮肤刺激

造成严重眼刺激

可能导致皮肤过敏反应

怀疑会导致遗传性缺陷

可能致癌

· **警戒字句**

· **预防措施**

规定远离火焰和热表面。禁止吸烟

避免吸入粉尘/烟/气体/烟雾/蒸气/喷雾

戴防护手套/穿防护服/戴防护眼罩/戴防护面具

· **事故响应**

如进入眼睛:用水小心冲洗几分钟。如戴隐形眼镜并可方便地取出,取出隐形眼镜。继续冲洗

· **安全储存**

存放处须加锁

· **废弃处置**

处置内装物/容器按照地方/区域/国家/国际规章

· **国家的规章:**

· **有关使用限制的资料:** 禁止员工接触在配制中含有致癌的物料. 在某些情况中由当局作出例外的决定.

· **化学物质安全性评价:** 尚未进行化学物质安全性评价

16 其他信息

该资料是基于我们目前的知识. 然而,这并不构成对任何特定产品特性的担保并且不建立一个法律上有效的合同关系.

· **缩写:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: 持久性生物累积性有毒物质

vPvB: very Persistent and very Bioaccumulative

易燃液体 第4类: Flammable liquids – Category 4

急性毒性(经口) 第3类: Acute toxicity – Category 3

急性毒性(经口) 第4类: Acute toxicity – Category 4

皮肤腐蚀/刺激 第1B类: Skin corrosion/irritation – Category 1B

皮肤腐蚀/刺激 第2类: Skin corrosion/irritation – Category 2

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严重眼损伤/眼刺激 类别2A: Serious eye damage/eye irritation – Category 2A
敏化(皮肤) 第1类: Skin sensitisation – Category 1
生殖细胞致突变性 第2类: Germ cell mutagenicity – Category 2
致癌性 第1B类: Carcinogenicity – Category 1B

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CN

Bezpečnostní list

podle 1907/2006/ES, Článek 31

Datum vydání: 31.10.2018

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ODDÍL 1: Identifikace látky/směsi a společnosti/podniku

- **1.1 Identifikátor výrobku**
- **Obchodní označení:** *Paraformaldehyde 20% Solution, EM Grade*
- **Číslo výrobku:** *15713, 15713-SP, 15713-S*
- **1.2 Příslušná určená použití látky nebo směsi a nedoporučená použití**
Další relevantní informace nejsou k dispozici.
- **Použití látky / přípravku** *Laboratorní chemikálie*
- **1.3 Podrobné údaje o dodavateli bezpečnostního listu**
- **Identifikace výrobce/dovozce:**
*Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com*
- **Obor poskytující informace:** *Product safety department*
- **1.4 Telefonní číslo pro naléhavé situace:**
*ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887*

ODDÍL 2: Identifikace nebezpečnosti

- **2.1 Klasifikace látky nebo směsi**
- **Klasifikace v souladu s nařízením (ES) č. 1272/2008**



GHS08 nebezpečnost pro zdraví

Muta. 2 H341 Podezření na genetické poškození.
Carc. 1B H350 Může vyvolat rakovinu.



GHS07

Acute Tox. 4 H302 Zdraví škodlivý při požití.
Acute Tox. 4 H312 Zdraví škodlivý při styku s kůží.
Acute Tox. 4 H332 Zdraví škodlivý při vdechování.
Skin Irrit. 2 H315 Dráždí kůži.
Eye Irrit. 2 H319 Způsobuje vážné podráždění očí.
Skin Sens. 1 H317 Může vyvolat alergickou kožní reakci.
STOT SE 3 H335 Může způsobit podráždění dýchacích cest.

- **2.2 Prvky označení**
- **Označování v souladu s nařízením (ES) č. 1272/2008** *Produkt je klasifikován a označen podle nařízení CLP.*
- **Výstražné symboly nebezpečnosti**



GHS07 GHS08

- **Signální slovo** *Nebezpečí*

(pokračování na straně 2)

Bezpečnostní list

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Datum vydání: 31.10.2018

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Obchodní označení: Paraformaldehyde 20% Solution, EM Grade

(pokračování strany 1)

· Nebezpečné komponenty k etiketování:

Formaldehyd

· Standardní věty o nebezpečnosti

H302+H312+H332 Zdraví škodlivý při požití, při styku s kůží a při vdechování.

H315 Dráždí kůži.

H319 Způsobuje vážné podráždění očí.

H317 Může vyvolat alergickou kožní reakci.

H341 Podezření na genetické poškození.

H350 Může vyvolat rakovinu.

H335 Může způsobit podráždění dýchacích cest.

· Pokyny pro bezpečné zacházení

P261 Zamezte vdechování prachu/dýmu/plynu/mlhy/par/aerosolů.

P280 Používejte ochranné rukavice/ochranný oděv/ochranné brýle/obličejový štít.

P305+P351+P338 PŘI ZASAŽENÍ OČÍ: Několik minut opatrně vyplachujte vodou. Vyjměte kontaktní čočky, jsou-li nasazeny a pokud je lze vyjmout snadno. Pokračujte ve vyplachování.

P322 Specifické opatření (viz na tomto štítku).

P405 Skladujte uzamčené.

P501 Obsah/nádobu likvidujte v souladu s místními/regionálními/národními/mezinárodními předpisy.








· 2.3 Další nebezpečnost
· Výsledky posouzení PBT a vPvB
· PBT: Nedá se použít.

· vPvB: Nedá se použít.

ODDÍL 3: Složení/informace o složkách

· 3.2 Chemická charakteristika: Směsi
· Popis: Směs obsahuje následné látky bez nebezpečných příměsí.

· Výrobek obsahuje tyto nebezpečné látky:

CAS: 50-00-0	Formaldehyd	>10-≤25%
EINECS: 200-001-8	 Acute Tox. 3, H301;  Acute Tox. 3, H311;  Acute Tox. 3, H331;  Muta. 2, H341;  Carc. 1B, H350;  Skin Corr. 1B, H314;  Skin Sens. 1, H317	

· Dodatečná upozornění: Znění uvedených údajů o nebezpečnosti látky je uvedeno v kapitole 16.

ODDÍL 4: Pokyny pro první pomoc

· 4.1 Popis první pomoci
· Všeobecné pokyny:

Příznaky otravy se mohou projevit až po mnoha hodinách, proto je nutný lékařský dohled nejméně 48 hodin po nehodě.

· Při nadýchání:

Bohatý přívod čerstvého vzduchu a pro jistotu vyhledat lékaře.

Při bezvědomí uložit a přepravit ve stabilní poloze na boku.

· Při styku s kůží: Ihned omýt vodou a mýdlem a dobře opláchnout.

· Při zasažení očí:

Oči s otevřenými víčky vyplachovat po více minut proudem tekoucí vody. Při přetrvávajících potížích se poradit s lékařem.

· Při požití: Ihned vyhledat lékaře.

· 4.2 Nejdůležitější akutní a opožděné symptomy a účinky Další relevantní informace nejsou k dispozici.

(pokračování na straně 3)

Bezpečnostní list podle 1907/2006/ES, Článek 31

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(pokračování strany 2)

- **4.3 Pokyn týkající se okamžité lékařské pomoci a zvláštního ošetření**
Další relevantní informace nejsou k dispozici.

ODDÍL 5: Opatření pro hašení požáru

- **5.1 Hasiva**
- **Vhodná hasiva:**
CO₂, hasící prášek nebo rozstříkované vodní paprsky. Větší ohně zdotat rozstříkovanými vodními paprsky nebo pěnou odolnou vůči alkoholu.
- **5.2 Zvláštní nebezpečnost vyplývající z látky nebo směsi** Další relevantní informace nejsou k dispozici.
- **5.3 Pokyny pro hasiče**
- **Zvláštní ochranné prostředky pro hasiče:** Použít ochranný dýchací přístroj.

ODDÍL 6: Opatření v případě náhodného úniku

- **6.1 Opatření na ochranu osob, ochranné prostředky a nouzové postupy** Není nutné.
- **6.2 Opatření na ochranu životního prostředí:**
Zředit velkým množstvím vody.
Nenechat proniknout do kanalizace/povrchových vod/podzemních vod.
- **6.3 Metody a materiál pro omezení úniku a pro čištění:**
Sebrat s materiály, vázícími kapaliny (písek, šterkový písek, pojidla kyselin, universální pojidla, piliny).
Kontaminovaný materiál odstranit jako odpad podle bodu 13.
Zajistit dostatečné větrání.
- **6.4 Odkaz na jiné oddíly**
Informace o bezpečnému zacházení viz kapitola 7.
Informace o osobní ochranné výstroji viz kapitola 8.
Informace k odstranění viz kapitola 13.

ODDÍL 7: Zacházení a skladování

- **7.1 Opatření pro bezpečné zacházení**
Na pracovišti zabezpečit dobré větrání a odsávání.
Nádrž opatrně otevřít a zacházet s ní opatrně.
Zamezit vytváření aerosolů.
- **Upozornění k ochraně před ohněm a explozí:** Mít připravené ochranné dýchací přístroje.
- **7.2 Podmínky pro bezpečné skladování látek a směsí včetně neslučitelných látek a směsí**
- **Pokyny pro skladování:**
- **Požadavky na skladovací prostory a nádoby:** Žádné zvláštní požadavky.
- **Upozornění k hromadnému skladování:** Není nutné.
- **Další údaje k podmínkám skladování:** Nádrž držet neprodyšně uzavřenou.
- **7.3 Specifické konečné / specifická konečná použití** Další relevantní informace nejsou k dispozici.

ODDÍL 8: Omezování expozice / osobní ochranné prostředky

- **Technická opatření:** Žádné další údaje, viz bod 7.

(pokračování na straně 4)

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· 8.1 Kontrolní parametry

· Kontrolní parametry:

50-00-0 Formaldehyd

NPK	Krátkodobá hodnota: 1 mg/m ³ Dlouhodobá hodnota: 0,5 mg/m ³ I, S
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· **Další upozornění:** Jako podklad sloužily při zhotovení platné listiny.

· 8.2 Omezování expozice

· Osobní ochranné prostředky:

· Všeobecná ochranná a hygienická opatření:

Zdržovat od potravin, nápojů a krmiv.

Zašpiněné, nasáknuté šaty ihned vysvléci.

Před přestávkami a po práci umýt ruce.

Ochranný oděv odděleně přechovávat.

Zamezit styku s pokožkou a zrakem.

· Ochrana dýchacích orgánů:

Při krátkodobém nebo nízkém zatížení použít dýchací přístroj s filtrem, při intenzivním nebo delším zatížení se musí použít dýchací přístroj nezávislý na okolním vzduchu.

· Ochrana rukou:



Ochranné rukavice

Materiál rukavic musí být nepropustný a odolný proti produktu / látce / směsi.

Vzhledem k tomu, že chybí testy, není možné doporučit materiál rukavic pro produkt / přípravek / chemickou směs.

Výběr materiálu rukavic proveďte podle času průniku, permeability a degradace.

· Materiál rukavic

Správný výběr rukavic nezávisí jen na materiálu, ale také na dalších kritériích, která se liší podle výrobce. Protože je výrobek směs více látek, nelze materiál rukavic předem vypočítat a je nutno udělat před použitím zkoušku.

· Doba průniku materiálem rukavic

Je nutno u výrobce rukavic zjistit a dodržovat přesné časy průniku materiálem ochranných rukavic.

· Ochrana očí:



Uzavřené ochranné brýle

ODDÍL 9: Fyzikální a chemické vlastnosti

· 9.1 Informace o základních fyzikálních a chemických vlastnostech

· Všeobecné údaje

· Vzhled:

Skupenství: Tekutina

Barva: Jasná

· Zápach: Charakteristický

· Prahová hodnota zápachu: Není určeno.

· Hodnota pH: Není určeno.

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· Změna stavu	
<i>Bod tání/bod tuhnutí:</i>	<i>Není určeno.</i>
<i>Počáteční bod varu a rozmezí bodu varu:</i>	<i>>93 °C</i>
· Bod vzplanutí:	<i>>60 °C</i>
· Hořlavost (pevné látky, plyny):	<i>Nedá se použít.</i>
· Zápalná teplota:	<i>300 °C</i>
· Teplota rozkladu:	<i>Není určeno.</i>
· Teplota samovznícení:	<i>Produkt není samozápalný.</i>
· Výbušné vlastnosti:	<i>Není určeno.</i>
· Meze výbušnosti:	
<i>Dolní mez:</i>	<i>7 Vol %</i>
<i>Horní mez:</i>	<i>73 Vol %</i>
· Tlak páry při 20 °C:	<i>23 hPa</i>
· Hustota při 20 °C:	<i>0,962 g/cm³</i>
· Relativní hustota	<i>Není určeno.</i>
· Hustota páry:	<i>Není určeno.</i>
· Rychlost odpařování	<i>Není určeno.</i>
· Rozpustnost ve / směřitelnost s vodě:	<i>Úplně mísitelná.</i>
· Rozdělovací koeficient: n-oktanol/voda:	<i>Není určeno.</i>
· Viskozita:	
<i>Dynamicky:</i>	<i>Není určeno.</i>
<i>Kinematicky:</i>	<i>Není určeno.</i>
· Obsah ředidel:	
<i>Organická ředidla:</i>	<i>20,0 %</i>
<i>Voda:</i>	<i>80,0 %</i>
<i>VOC (EC)</i>	<i>20,00 %</i>
<i>Obsah netěkavých složek:</i>	<i>0,0 %</i>
· 9.2 Další informace	<i>Další relevantní informace nejsou k dispozici.</i>

ODDÍL 10: Stálost a reaktivita

- **10.1 Reaktivita** Další relevantní informace nejsou k dispozici.
- **10.2 Chemická stabilita**
- **Termický rozklad / Podmínky, kterých je nutno se vyvarovat:**
Nedochází k rozkladu při doporučeném způsobu použití.
- **10.3 Možnost nebezpečných reakcí** Žádné nebezpečné reakce nejsou známy.
- **10.4 Podmínky, kterým je třeba zabránit** Další relevantní informace nejsou k dispozici.
- **10.5 Neslučitelné materiály:** Další relevantní informace nejsou k dispozici.
- **10.6 Nebezpečné produkty rozkladu:** Nejsou známy žádné nebezpečné produkty při rozkladu.

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ODDÍL 11: Toxikologické informace

11.1 Informace o toxikologických účincích

Akutní toxicita

Zdraví škodlivý při požití, při styku s kůží a při vdechování.

Zařazení relevantní hodnoty LD/LC 50:

50-00-0 Formaldehyd

Orálně	LD50	>200 mg/kg (rat)
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Primární dráždivé účinky:

Žíravost/dráždivost pro kůži

Dráždí kůži.

Vážné poškození očí / podráždění očí

Způsobuje vážné podráždění očí.

Senzibilizace dýchacích cest / senzibilizace kůže

Může vyvolat alergickou kožní reakci.

Účinky CMR (karcinogenita, mutagenita a toxicita pro reprodukci)

Mutagenita v zárodečných buňkách

Podezření na genetické poškození.

Karcinogenita

Může vyvolat rakovinu.

Toxicita pro reprodukci Na základě dostupných údajů nejsou kritéria pro klasifikaci splněna.

Toxicita pro specifické cílové orgány – jednorázová expozice

Může způsobit podráždění dýchacích cest.

Toxicita pro specifické cílové orgány – opakovaná expozice

Na základě dostupných údajů nejsou kritéria pro klasifikaci splněna.

Nebezpečnost při vdechnutí Na základě dostupných údajů nejsou kritéria pro klasifikaci splněna.

ODDÍL 12: Ekologické informace

12.1 Toxicita

Aquatická toxicita: Další relevantní informace nejsou k dispozici.

12.2 Perzistence a rozložitelnost Další relevantní informace nejsou k dispozici.

12.3 Bioakumulační potenciál Další relevantní informace nejsou k dispozici.

12.4 Mobilita v půdě Další relevantní informace nejsou k dispozici.

Další ekologické údaje:

Všeobecná upozornění:

Třída ohrožení vody 2 (Samozářazení): ohrožuje vodu

Nesmí vniknout do spodní vody, povodí nebo kanalizace.

Ohrožuje pitnou vodu už při proniknutí malého množství do zeminy.

12.5 Výsledky posouzení PBT a vPvB

PBT: Nedá se použít.

vPvB: Nedá se použít.

12.6 Jiné nepříznivé účinky Další relevantní informace nejsou k dispozici.

ODDÍL 13: Pokyny pro odstraňování

13.1 Metody nakládání s odpady

Doporučení: Nesmí se odstraňovat společně s odpady z domácnosti. Nepřipustit únik do kanalizace.

Kontaminované obaly:

Doporučení: Odstranění podle příslušných předpisů.

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· **Doporučený čisticí prostředek:** Voda, případně s přísadami čisticích prostředků.

(pokračování strany 6)

ODDÍL 14: Informace pro přepravu

· **14.1 UN číslo**
· **ADR, IMDG, IATA**

UN1993

· **14.2 Oficiální (OSN) pojmenování pro přepravu**

· **ADR**
· **IMDG, IATA**

1993 LÁTKA HOŘLAVÁ, KAPALNÁ, J.N.
FLAMMABLE LIQUID, N.O.S.

· **14.3 Třída/třídy nebezpečnosti pro přepravu**

· **ADR**



· **třída**

3 Hořlavé kapaliny

· **IMDG, IATA**
· **Class**

odpadá

· **14.4 Obalová skupina**
· **ADR, IMDG, IATA**

III

· **14.5 Nebezpečnost pro životní prostředí:**

Nedá se použít.

· **14.6 Zvláštní bezpečnostní opatření pro uživatele**
· **Stowage Category**

Varování: Hořlavé kapaliny
A

· **14.7 Hromadná přeprava podle přílohy II úmluvy MARPOL a předpisu IBC**

Nedá se použít.

· **Přeprava/další údaje:**

· **ADR**

· **Omezené množství (LQ)**
· **Vyňatá množství (EQ)**

5L
Kód: E1
Nejvyšší čisté množství na vnitřní obal: 30 ml
Nejvyšší čisté množství na vnější obal: 1000 ml

· **IMDG**

· **Limited quantities (LQ)**
· **Excepted quantities (EQ)**

5L
Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**

UN 1993 LÁTKA HOŘLAVÁ, KAPALNÁ, J.N., 3, III

ODDÍL 15: Informace o předpisech

· **15.1 Předpisy týkající se bezpečnosti, zdraví a životního prostředí/specifické právní předpisy týkající se látky nebo směsi**

· **Rady 2012/18/EU**

· **Nebezpečné látky jmenovitě uvedené - PŘÍLOHA I** Žádná z obsažených látek není na seznamu.

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(pokračování strany 7)

- **Rady (ES) č. 1907/2006 PŘÍLOHA XVII** Omezující podmínky: 3, 28
- **Národní předpisy:**
- **Upozornění na omezení práce:**
Pracovníci nesmí přijít do styku s nebezpečnými látkami způsobujícími rakovinu, obsaženými v tomto přípravku. V jednotlivých případech mohou úřady povolit výjimku.
- **15.2 Posouzení chemické bezpečnosti:** Posouzení chemické bezpečnosti nebylo provedeno.

ODDÍL 16: Další informace

Údaje se opírají o dnešní stav našich vědomostí, nepředstavují však záruku vlastností produktu a nevznikají tak žádné smluvní právní vztahy.

- **Relevantní věty**

- H301 Toxický při požití.
- H311 Toxický při styku s kůží.
- H314 Způsobuje těžké poleptání kůže a poškození očí.
- H317 Může vyvolat alergickou kožní reakci.
- H331 Toxický při vdechování.
- H341 Podezření na genetické poškození.
- H350 Může vyvolat rakovinu.

- **Zkratky a akronymy:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 3: Akutní toxicita – Kategorie 3
- Acute Tox. 4: Akutní toxicita – Kategorie 4
- Skin Corr. 1B: Žíravost/dráždivost pro kůži – Kategorie 1B
- Skin Irrit. 2: Žíravost/dráždivost pro kůži – Kategorie 2
- Eye Irrit. 2: Vážné poškození očí / podráždění očí – Kategorie 2
- Skin Sens. 1: Senzibilizace kůže – Kategorie 1
- Muta. 2: Mutagenita v zárodečných buňkách – Kategorie 2
- Carc. 1B: Karcinogenita – Kategorie 1B
- STOT SE 3: Toxicita pro specifické cílové orgány (jednorázová expozice) – Kategorie 3

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RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

· 1.1 Productidentificatie

· **Handelsnaam:** Paraformaldehyde 20% Solution, EM Grade

· **Artikelnummer:** 15713, 15713-SP, 15713-S

· **1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik**
Geen verdere relevante informatie verkrijgbaar.

· **Toepassing van de stof / van de bereiding** Laboratoriumchemicaliën

· 1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad

· **Fabrikant/leverancier:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Aurion

Binnenhaven 5

6709 PD Wageningen

The Netherlands

Tel: 31 317 415094

Fax: 31 317 415955

email: info@aurion.nl

· **Inlichtingengevende sector:** Product safety department

· 1.4 Telefoonnummer voor noodgevallen:

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

RUBRIEK 2: Identificatie van de gevaren

· 2.1 Indeling van de stof of het mengsel

· **Indeling overeenkomstig Verordening (EG) nr. 1272/2008**



GHS08 gezondheidsgevaar

Muta. 2 H341 Verdacht van het veroorzaken van genetische schade.

Carc. 1B H350 Kan kanker veroorzaken.



GHS07

Acute Tox. 4 H302 Schadelijk bij inslikken.

Acute Tox. 4 H312 Schadelijk bij contact met de huid.

Acute Tox. 4 H332 Schadelijk bij inademing.

Skin Irrit. 2 H315 Veroorzaakt huidirritatie.

Eye Irrit. 2 H319 Veroorzaakt ernstige oogirritatie.

Skin Sens. 1 H317 Kan een allergische huidreactie veroorzaken.

STOT SE 3 H335 Kan irritatie van de luchtwegen veroorzaken.

· 2.2 Etiketteringselementen

· **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**

Het product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.

(Vervolg op blz. 2)

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(Vervolg van blz. 1)

· Gevarenpictogrammen


GHS07 GHS08

· Signaalwoord Gevaar

· Gevaaraanduidende componenten voor de etikettering:

formaldehyde

· Gevarenaanduidingen

H302+H312+H332 Schadelijk bij inslikken, bij contact met de huid en bij inademing.

H315 Veroorzaakt huidirritatie.

H319 Veroorzaakt ernstige oogirritatie.

H317 Kan een allergische huidreactie veroorzaken.

H341 Verdacht van het veroorzaken van genetische schade.

H350 Kan kanker veroorzaken.

H335 Kan irritatie van de luchtwegen veroorzaken.

· Veiligheidsaanbevelingen

P261 Inademing van stof/rook/gas/nevel/damp/spuitnevel vermijden.

P280 Beschermende handschoenen/beschermende kleding/oogbescherming/gelaatsbescherming dragen.

P305+P351+P338 **BIJ CONTACT MET DE OGEN:** voorzichtig afspoelen met water gedurende een aantal minuten; contactlenzen verwijderen, indien mogelijk; blijven spoelen.

P322 Specifieke maatregelen (zie op dit etiket).

P405 Achter slot bewaren.

P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.

· 2.3 Andere gevaren
· Resultaten van PBT- en zPzB-beoordeling
· PBT: Niet bruikbaar.

· zPzB: Niet bruikbaar.

RUBRIEK 3: Samenstelling en informatie over de bestanddelen

· 3.2 Chemische karakterisering: Mengsels
· Beschrijving: Mengsel van na elkaar aangevoerde stoffen met onveerbarelijke bijmengingen.

· Gevaarlijke inhoudstoffen:

CAS: 50-00-0	formaldehyde	>10-≤25%
EINECS: 200-001-8		

· Aanvullende gegevens:

De woordelijke inhoud van de opgegeven aanwijzingen inzake de mogelijke gevaren is te vinden in hoofdstuk 16.

RUBRIEK 4: Eerstehulpmaatregelen

· 4.1 Beschrijving van de eerstehulpmaatregelen
· Algemene informatie:

Het is mogelijk dat vergiftigingssymptomen pas na vele uren optreden. Om deze reden is medische controle gedurende minstens 48 uur na een ongeval noodzakelijk.

(Vervolg op blz. 3)

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- **Na het inademen:**
*Veel verse lucht toedienen en voor alle zekerheid een arts raadplegen.
 Bij bewusteloosheid ligging en vervoer in stabiele zijligging.*
- **Na huidcontact:** *Onmiddellijk met water en zeep afwassen en goed naspoelen.*
- **Na oogcontact:**
De ogen gedurende verscheidene minuten onder stromend water afspoelen terwijl de oogspleet geopend blijft. Bij aanhoudende klachten een dokter raadplegen.
- **Na inslikken:** *Onmiddellijk arts raadplegen.*
- **4.2 Belangrijkste acute en uitgestelde symptomen en effecten** *Geen verdere relevante informatie verkrijgbaar.*
- **4.3 Vermelding van de vereiste onmiddellijke medische verzorging en speciale behandeling**
Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 5: Brandbestrijdingsmaatregelen

- **5.1 Blusmiddelen**
- **Geschikte blusmiddelen:**
CO₂, bluspoeder of waterstraal. Grotere brand met waterstraal bestrijden of met schuim, dat tegen alcohol bestand is.
- **5.2 Speciale gevaren die door de stof of het mengsel worden veroorzaakt**
Geen verdere relevante informatie verkrijgbaar.
- **5.3 Advies voor brandweerlieden**
- **Speciale beschermende kleding:** *Ademhalingstoestel aantrekken.*

RUBRIEK 6: Maatregelen bij het accidenteel vrijkomen van de stof of het mengsel

- **6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures** *Niet nodig.*
- **6.2 Milieuvoorzorgsmaatregelen:**
*Met veel water verdunnen.
 Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.*
- **6.3 InsluTINGS- en reinigingsmethoden en -materiaal:**
*Met vloeistofbindend materiaal (zand, bergmeel, zuurbinder, universele binder, zaagmeel) opnemen.
 Besmet materiaal zoals afval volgens punt 13 verwijderen.
 Voor voldoende ventilatie zorgen.*
- **6.4 Verwijzing naar andere rubrieken**
*Informatie inzake veilig gebruik - zie hoofdstuk 7.
 Informatie inzake persoonlijke beschermingsuitrusting - zie hoofdstuk 8.
 Informatie inzake berging - zie hoofdstuk 13.*

RUBRIEK 7: Hantering en opslag

- **7.1 Voorzorgsmaatregelen voor het veilig hanteren van de stof of het mengsel**
*Voor goede ventilatie/afzuiging op de werkplaatsen zorgen.
 Tanks voorzichtig openen en behandelen.
 Aërosolvorming vermijden.*
- **Informatie m.b.t. brand- en ontploffingsgevaar:** *Ademhalingstoestellen gereedhouden.*
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** *Geen bijzondere eisen.*
- **Informatie m.b.t. gezamenlijke opslag:** *Niet noodzakelijk.*
- **Verdere inlichtingen over eisen m.b.t. de opslag:** *Tanks ondoordringbaar gesloten houden.*

(Vervolg op blz. 4)

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(Vervolg van blz. 3)

· **7.3 Specifiek eindgebruik** Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

· **Aanvullende gegevens m.b.t. de inrichting van technische installaties:** Geen aanvullende gegevens. Zie 7.

· **8.1 Controleparameters**

· **Bestanddelen met grenswaarden die m.b.t. de werkruimte in acht genomen moeten worden:**

50-00-0 formaldehyde

WGW	Korte termijn waarde: 0,5 mg/m ³ , 0,4 ppm
	Lange termijn waarde: 0,15 mg/m ³ , 0,1 ppm

· **Aanvullende gegevens:** Als basis dienden lijsten die bij opstelling geldig waren.

· **8.2 Maatregelen ter beheersing van blootstelling**

· **Persoonlijke beschermingsvoorzieningen:**

· **Algemene beschermings- en gezondheidsmaatregelen:**

- Verwijderd houden van eet- en drinkwaren.
- Verontreinigde kleding onmiddellijk uittrekken.
- Vóór de pauze en aan het einde van werktijd handen wassen.
- Beschermende kleding afzonderlijk bewaren.
- Aanraking met de ogen en de huid vermijden.

· **Ademhalingsbescherming:**

Bij korte of geringe belasting ademfiltertoestel; bij intensieve resp. langdurige expositie een van de omringende lucht onafhankelijk ademhalingsstoestel gebruiken.

· **Handbescherming:**



Veiligheidshandschoenen

Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product / de stof / de bereiding.

Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product / de bereiding / het chemicaliën-mengsel afgegeven worden.

Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.

· **Handschoenmateriaal**

De keuze van een geschikte handschoen is niet alleen afhankelijk van het materiaal, maar ook van andere kwaliteitskenmerken en verschilt van fabrikant tot fabrikant. Aangezien het product uit meerdere stoffen is samengesteld, is de duurzaamheid van de handschoenmaterialen niet vooraf berekenbaar en moet derhalve vóór het gebruik worden getest.

· **Doordringingstijd van het handschoenmateriaal**

De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.

· **Oogbescherming:**



Nauw aansluitende veiligheidsbril

NL

(Vervolg op blz. 5)

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RUBRIEK 9: Fysische en chemische eigenschappen

· 9.1 Informatie over fysische en chemische basiseigenschappen

· Algemene gegevens

· Voorkomen:

Vorm:	Vloeistof
Kleur:	Helder
Geur:	Karakteristiek
Geurdrempelwaarde:	Niet bepaald.

· pH-waarde: Niet bepaald.

· Toestandsverandering

Smelt-/vriespunt:	Niet bepaald.
Beginkookpunt en kooktraject:	>93 °C

· Vlampunt: >60 °C

· Ontvlambaarheid (vast, gas): Niet bruikbaar.

· Ontstekings temperatuur: 300 °C

· Ontledingstemperatuur: Niet bepaald.

· Zelfontbrandingstemperatuur: Het produkt ontbrandt niet uit zichzelf.

· Ontploffingseigenschappen: Niet bepaald.

· Ontploffingsgrenzen:

Onderste:	7 Vol %
Bovenste:	73 Vol %

· Dampspanning bij 20 °C: 23 hPa

· Dichtheid bij 20 °C: 0,962 g/cm³

· Relatieve dichtheid: Niet bepaald.

· Dampdichtheid: Niet bepaald.

· Verdampingssnelheid: Niet bepaald.

· Oplosbaarheid in/mengbaarheid met

Water: Volledig mengbaar.

· Verdelingscoëfficiënt: n-octanol/water: Niet bepaald.

· Viscositeit

Dynamisch:	Niet bepaald.
Kinematisch:	Niet bepaald.

· Oplosmiddelgehalte:

Organisch oplosmiddel:	20,0 %
Water:	80,0 %
VOC (EG)	20,00 %

Gehalte aan vaste bestanddelen: 0,0 %

· 9.2 Overige informatie: Geen verdere relevante informatie verkrijgbaar.

RUBRIEK 10: Stabiliteit en reactiviteit

· 10.1 Reactiviteit: Geen verdere relevante informatie verkrijgbaar.

· 10.2 Chemische stabiliteit

· Thermische afbraak / te vermijden omstandigheden: Geen afbraak bij gebruik volgens voorschrift.

(Vervolg op blz. 6)

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- **10.3 Mogelijke gevaarlijke reacties** Geen gevaarlijke reacties bekend.
- **10.4 Te vermijden omstandigheden** Geen verdere relevante informatie verkrijgbaar.
- **10.5 Chemisch op elkaar inwerkende materialen:** Geen verdere relevante informatie verkrijgbaar.
- **10.6 Gevaarlijke ontledingsproducten:** Geen gevaarlijke ontbindingsproducten bekend.

RUBRIEK 11: Toxicologische informatie

- **11.1 Informatie over toxicologische effecten**
- **Acute toxiciteit**
Schadelijk bij inslikken, bij contact met de huid en bij inademing.

- **Indelingsrelevantie LD/LC50-waarden:**

50-00-0 formaldehyde

Oraal	LD50	>200 mg/kg (rat)
-------	------	------------------

- **Primaire aandoening:**
- **Huidcorrosie/-irritatie**
Veroorzaakt huidirritatie.
- **Ernstig oogletsel/oogirritatie**
Veroorzaakt ernstige oogirritatie.
- **Sensibilisatie van de luchtwegen/de huid**
Kan een allergische huidreactie veroorzaken.
- **CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)**
- **Mutageniteit in geslachtscellen**
Verdacht van het veroorzaken van genetische schade.
- **Kankerverwekkendheid**
Kan kanker veroorzaken.
- **Giftigheid voor de voortplanting** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **STOT bij eenmalige blootstelling**
Kan irritatie van de luchtwegen veroorzaken.
- **STOT bij herhaalde blootstelling** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Gevaar bij inademing** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

RUBRIEK 12: Ecologische informatie

- **12.1 Toxiciteit**
- **Aquatische toxiciteit:** Geen verdere relevante informatie verkrijgbaar.
- **12.2 Persistentie en afbreekbaarheid** Geen verdere relevante informatie verkrijgbaar.
- **12.3 Bioaccumulatie** Geen verdere relevante informatie verkrijgbaar.
- **12.4 Mobiliteit in de bodem** Geen verdere relevante informatie verkrijgbaar.
- **Verdere ecologische informatie:**
- **Algemene informatie:**
Waterbezwaarlijkheid (NL): Z(1) niet afbreekbare stoffen met gevaarlijke eigenschappen voor mens en milieu (carcinogeniteit/mutageniteit/ reprotoxiciteit/bioaccumulerend vermogen/ toxiciteit of persistentie)
Gevaar voor water klasse 2 (D) (Zelfclassificatie): gevaar voor water
Niet lozen in grondwater, in oppervlaktewater of in riolering.
Gevaar voor drinkwater zelfs bij uitlopen van geringe hoeveelheden in de ondergrond.
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.
- **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

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RUBRIEK 13: Instructies voor verwijdering

- **13.1 Afvalverwerkingsmethoden**
- **Aanbeveling:** Mag niet tesamen met huisvuil gestort worden of in de riolering terechtkomen.
- **Niet gereinigde verpakkingen:**
- **Aanbeveling:** Afvalverwijdering volgens overheidsbepalingen.
- **Aanbevolen reinigingsmiddel:** Water, eventueel met toevoeging van reinigingsmiddelen.

RUBRIEK 14: Informatie met betrekking tot het vervoer

<ul style="list-style-type: none"> · 14.1 VN-nummer · ADR, IMDG, IATA 	<p style="text-align: center;">UNI993</p>
<ul style="list-style-type: none"> · 14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN · ADR · IMDG, IATA 	<p style="text-align: center;">1993 BRANDBARE VLOEISTOF, N.E.G. FLAMMABLE LIQUID, N.O.S.</p>
<ul style="list-style-type: none"> · 14.3 Transportgevarenklasse(n) · ADR 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · klasse 	<p style="text-align: center;">3 Brandbare vloeistoffen</p>
<ul style="list-style-type: none"> · IMDG, IATA · Class 	<p style="text-align: center;">Niet van toepassing</p>
<ul style="list-style-type: none"> · 14.4 Verpakkingsgroep: · ADR, IMDG, IATA 	<p style="text-align: center;">III</p>
<ul style="list-style-type: none"> · 14.5 Milieugevaren: 	<p style="text-align: center;">Niet bruikbaar.</p>
<ul style="list-style-type: none"> · 14.6 Bijzondere voorzorgen voor de gebruiker · Stowage Category 	<p style="text-align: center;">Waarschuwing: Brandbare vloeistoffen A</p>
<ul style="list-style-type: none"> · 14.7 Vervoer in bulk overeenkomstig bijlage II bij Marpol en de IBC-code 	<p style="text-align: center;">Niet bruikbaar.</p>
<ul style="list-style-type: none"> · Transport/verdere gegevens: · ADR · Beperkte hoeveelheden (LQ) · Uitgezonderde hoeveelheden (EQ) 	<p style="text-align: center;">5L Code: E1 Grootste netto hoeveelheid per binnenverpakking: 30 ml Grootste netto hoeveelheid per buitenverpakking: 1000 ml</p>
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p style="text-align: center;">5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>

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· VN "Model Regulation": UN 1993 BRANDBARE VLOEISTOF, N.E.G., 3, III

RUBRIEK 15: Regelgeving

· 15.1 Specifieke veiligheids-, gezondheids- en milieureglementen en -wetgeving voor de stof of het mengsel

· SZW-lijst van kankerverwekkende stoffen

50-00-0 formaldehyde

· SZW-lijst van mutagene stoffen

geen der bestanddelen staat op de lijst.

· NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid

geen der bestanddelen staat op de lijst.

· NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling

geen der bestanddelen staat op de lijst.

· NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding

geen der bestanddelen staat op de lijst.

· Richtlijn 2012/18/EU

· Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I geen der bestanddelen staat op de lijst.

· Verordening (EG) nr. 1907/2006 BIJLAGE XVII Beperkingsvoorwaarden: 3, 28

· Nationale voorschriften:

· Aanwijzingen m.b.t. tewerkstellingsbeperking:

Werknemers mogen aan de kankerverwekkende gevaarlijke stoffen van deze toebereiding niet blootgesteld worden. In uitzonderingsgevallen kan de overheid speciale vergunningen afgeven.

· Gevaarklasse v. water:

Waterbezwaarlijkheid (NL): Z(1) niet afbreekbare stoffen met gevaarlijke eigenschappen voor mens en milieu (carcinogeniteit/mutageniteit/ reprotoxiciteit/bioaccumulerend vermogen/ toxiciteit of persistentie)

· 15.2 Chemischeveiligheidsbeoordeling: Een chemische veiligheidsbeoordeling is niet uitgevoerd.

RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van produkteigenschappen en vestigen geen contractuele rechtsbetrekking.

· Relevante zinnen

H301 Giftig bij inslikken.

H311 Giftig bij contact met de huid.

H314 Veroorzaakt ernstige brandwonden en oogletsel.

H317 Kan een allergische huidreactie veroorzaken.

H331 Giftig bij inademing.

H341 Verdacht van het veroorzaken van genetische schade.

H350 Kan kanker veroorzaken.

· Afkortingen en acroniemen:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

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*VOC: Volatile Organic Compounds (USA, EU)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Acute Tox. 3: Acute toxiciteit – Categorie 3**Acute Tox. 4: Acute toxiciteit – Categorie 4**Skin Corr. 1B: Huidcorrosie/-irritatie – Categorie 1B**Skin Irrit. 2: Huidcorrosie/-irritatie – Categorie 2**Eye Irrit. 2: Ernstig oogletsel/oogirritatie – Categorie 2**Skin Sens. 1: Sensibilisatie van de huid – Categorie 1**Muta. 2: Mutageniteit in geslachtscellen – Categorie 2**Carc. 1B: Kankerverwekkendheid – Categorie 1B**STOT SE 3: Specifieke doelorgaantoxiciteit bij eenmalige blootstelling – Categorie 3*

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PUNKT 1: Identifikation af stoffet/blandingen og af selskabet/virksomheden

- **1.1 Produktidentifikator**
- **Handelsnavn:** Paraformaldehyde 20% Solution, EM Grade
- **Artikelnummer:** 15713, 15713-SP, 15713-S
- **1.2 Relevante identificerede anvendelser for stoffet eller blandingen samt anvendelser, der frarådes**
Der står ingen yderligere, relevante informationer til rådighed.
- **Stoffets/præparatets anvendelse** Laboratoriekemikalier
- **1.3 Nærmere oplysninger om leverandøren af sikkerhedsdatabladet**
- **Producent/leverandør**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **For yderligere information:** Product safety department
- **1.4 Nødtelefon:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

PUNKT 2: Fareidentifikation

- **2.1 Klassificering af stoffet eller blandingen**
- **Klassificering i henhold til forordning (EF) nr. 1272/2008**



GHS08 sundhedsfarer

Muta. 2 H341 Mistænkt for at forårsage genetiske defekter.
Carc. 1B H350 Kan fremkalde kræft.



GHS07

Acute Tox. 4 H302 Farlig ved indtagelse.
Acute Tox. 4 H312 Farlig ved hudkontakt.
Acute Tox. 4 H332 Farlig ved indånding.
Skin Irrit. 2 H315 Forårsager hudirritation.
Eye Irrit. 2 H319 Forårsager alvorlig øjenirritation.
Skin Sens. 1 H317 Kan forårsage allergisk hudreaktion.
STOT SE 3 H335 Kan forårsage irritation af luftvejene.

- **2.2 Mærkningselementer**
- **Mærkning i henhold til forordning (EF) nr. 1272/2008**
Dette produkt er klassificeret og mærket iht. CLP-forordningen.
- **Farepiktogrammer**



GHS07



GHS08

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- **Signalord Fare**

- **Farebestemmende komponent(er) til etikettering:**

formaldehyd

- **Faresætninger**

H302+H312+H332 Farlig ved indånding, hudkontakt eller indånding.

H315 Forårsager hudirritation.

H319 Forårsager alvorlig øjenirritation.

H317 Kan forårsage allergisk hudreaktion.

H341 Mistænkt for at forårsage genetiske defekter.

H350 Kan fremkalde kræft.

H335 Kan forårsage irritation af luftvejene.

- **Sikkerhedssætninger**

P261 Undgå indånding af pulver/røg/gas/tåge/damp/spray.

P280 Bær beskyttelseshandsker/beskyttelsestøj/øjenskyttelse/ansigtsbeskyttelse.

P305+P351+P338 VED KONTAKT MED ØJNENE: Skyl forsigtigt med vand i flere minutter. Fjern eventuelle kontaktlinser, hvis dette kan gøres let. Fortsæt skylning.

P322 Særlige foranstaltninger (se på denne etiket).

P405 Opbevares under lås.

P501 Bortskaffelse af indholdet/holderen i henhold til de lokale/regionale/nationale/internationale forskrifter.

- **2.3 Andre farer**

- **Resultater af PBT- og vPvB-vurdering**

- **PBT:** Ikke relevant.








- **vPvB:** Ikke relevant.

PUNKT 3: Sammensætning af/oplysning om indholdsstoffer

- **3.2 Kemisk betegnelse: Blandinger**

- **Beskrivelse:** Blanding med nedenstående stoffer med ufarlige tilsætningsstoffer.

- **Farlige indholdsstoffer:**

CAS: 50-00-0	formaldehyd	>10-≤25%
EINECS: 200-001-8	 Acute Tox. 3, H301;  Acute Tox. 3, H311;  Acute Tox. 3, H331;  Muta. 2, H341;  Carc. 1B, H350;  Skin Corr. 1B, H314;  Skin Sens. 1, H317	

- **Yderligere anvisninger:** Teksten til de anførte farehenvisninger fremgår af kapitel 16.

PUNKT 4: Førstehjælpsforanstaltninger

- **4.1 Beskrivelse af førstehjælpsforanstaltninger**

- **Generelle anvisninger:**

Forgiftningssymptomer kan optræde med mange timers forsinkelse, derfor skal lægeovervågningen vare mindst 48 timer efter et uheld.

- **Efter indånding:**

Rigelig tilførsel af frisk luft. Søg for en sikkerheds skyld læge.

I tilfælde af bevidstløshed skal den tilskadedkomne lægges ned og transporteres i stabilt sideleje.

- **Efter hudkontakt:** Skal omgående vaskes af med vand og sæbe, skyl godt efter.

- **Efter øjenkontakt:**

Skyl øjnene med åbent øjenlåg i flere minutter under rindende vand. Søg læge, hvis problemerne er vedvarende.

- **Efter indtagelse:** Søg læge.

- **4.2 Vigtigste symptomer og virkninger, både akutte og forsinkede**

Der står ingen yderligere, relevante informationer til rådighed.

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- **4.3 Angivelse af om øjeblikkelig lægehjælp og særlig behandling er nødvendig**
Der står ingen yderligere, relevante informationer til rådighed.

PUNKT 5: Brandbekæmpelse

- **5.1 Slukningsmidler**
- **Egnede slukningsmidler:**
CO₂, slukningspulver eller vandspraystråle. Større brande bekæmpes med vandspraystråle eller alkoholbestandigt skum.
- **5.2 Særlige farer i forbindelse med stoffet eller blandingen**
Der står ingen yderligere, relevante informationer til rådighed.
- **5.3 Anvisninger for brandmandskab**
- **Særlige værnemidler:** Bær åndedrætsværn.

PUNKT 6: Forholdsregler over for udslip ved uheld

- **6.1 Personlige sikkerhedsforanstaltninger, personlige værnemidler og nødprocedurer** Ikke påkrævet.
- **6.2 Miljøbeskyttelsesforanstaltninger:**
Fortynd med rigeligt vand.
Må ikke udledes i kloaksystemet/overfladevand/grundvand.
- **6.3 Metoder og udstyr til inddæmning og oprensning:**
Opsamles med væskebindende materiale (sand, kiselgur, syrebindemiddel, universalbindemiddel, savsmuld).
Kontamineret materiale skal bortskaffes som affald ifølge punkt 13.
Sørg for tilstrækkelig udluftning.
- **6.4 Henvisning til andre punkter**
Information om sikker håndtering se kapitel 7.
Informationer vedrørende personlige værnemidler se kapitel 8.
Informationer om bortskaffelse se kapitel 13.

PUNKT 7: Håndtering og opbevaring

- **7.1 Forholdsregler for sikker håndtering**
Sørg for god udluftning/udsugning på arbejdspladsen.
Beholdere skal åbnes og håndteres med forsigtighed.
Undgå aerosoldannelse.
- **Anvisninger vedrørende brand- og eksplosionsbeskyttelse:** Hold åndedrætsværn i beredskab.
- **7.2 Betingelser for sikker opbevaring, herunder eventuel uforenelighed**
- **Opbevaring:**
- **Krav til opbevaringsrum og beholdere:** Ingen særlige krav.
- **Henvisninger vedrørende opbevaring med andre stoffer:** Ikke påkrævet.
- **Yderligere oplysninger vedrørende opbevaringsbetingelserne:** Hold beholderen tætsluttende lukket.
- **7.3 Særlige anvendelser** Der står ingen yderligere, relevante informationer til rådighed.

PUNKT 8: Eksponeringskontrol/personlige værnemidler

- **Yderligere anvisninger vedrørende udformning af tekniske anlæg:** Ingen yderligere oplysninger, se punkt 7.

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· 8.1 Kontrolparametre

· Indholdsstoffer med arbejdspladsrelaterede grænseværdier, der skal overvåges:

50-00-0 formaldehyd

GV	Loftværdi: 0,4 mg/m ³ , 0,3 ppm
LK	

· **Yderligere anvisninger:** Baseret på de lister, der var gældende på tidspunktet for udarbejdelsen.

· 8.2 Eksponeringskontrol

· Personlige værnemidler:

· Generelle forholdsregler vedrørende beskyttelse og hygiejne:

Skal holdes borte fra føde- og drikkevarer og foderstoffer.
 Forurenet, gennemvædet tøj skal det tages af med det samme.
 Vask hænder inden der holdes pause og ved arbejdsophør.
 Adskilt opbevaring af beskyttelsesklædning.
 Undgå kontakt med øjne og hud.

· Åndedrætsværn:

Ved kortvarig eller ringe belastning skal der benyttes åndedrætsværn med filter, ved intensiv eller længere eksponering skal der benyttes luftforsynet åndedrætsværn.

· Håndbeskyttelse:



Beskyttelseshandsker

Handskematerialet skal være uigennemtrængeligt og kunne tåle produktet/stoffet/præparatet.

På grund af manglende tests kan der ikke anbefales noget handskemateriale til produktet/præparatet/kemikalieblandingen.

Ved valg af handskematerialet skal der tages højde for gennemtrængningstider, permeabilitetstal og nedbrydning.

· Handskemateriale:

Valg af en egnet handske afhænger ikke blot af materialet, men også af yderligere kvalitetskriterier og er forskelligt fra den ene fabrikant til den anden. Da produktet er et præparat af flere forskellige stoffer, kan handskematerialernes bestandighed ikke beregnes på forhånd og skal derfor efterprøves inden brugen.

· Handskematerialets gennemtrængningstid

Hos handskefabrikanten skal man forespørge om den nøjagtige gennemtrængningstid og overholde denne.

· Øjenbeskyttelse:



Tætsluttende beskyttelsesbriller

PUNKT 9: Fysiske og kemiske egenskaber

· 9.1 Oplysninger om grundlæggende fysiske og kemiske egenskaber

· Generelle oplysninger

· Udseende:

Form:	Væske
Farve:	Klar
Lugt:	Karakteristisk
Lugttærskel:	Ikke bestemt.

pH-værdi:	Ikke bestemt.
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· Tilstandsændring	
Smeltepunkt/frysepunkt:	Ikke bestemt.
Begyndelseskogepunkt og kogepunktsinterval:	>93 °C
· Flammepunkt:	>60 °C
· Antændelighed (fast stof, luftart):	Ikke relevant.
· Antændelsepunkt:	300 °C
· Dekomponeringstemperatur:	Ikke bestemt.
· Selvantændelsestemperatur:	Produktet er ikke selvantændeligt.
· Eksplorative egenskaber:	Ikke bestemt.
· Eksplisionsgrænser:	
Nedre:	7 Vol %
Øvre:	73 Vol %
· Damptryk ved 20 °C:	23 hPa
· Densitet ved 20 °C:	0,962 g/cm ³
· Relativ massefylde:	Ikke bestemt.
· Dampmassefylde:	Ikke bestemt.
· Fordampningshastighed	Ikke bestemt.
· Opløselighed i/blandbarhed med vand:	Fuldt blandbar.
· Fordelingskoefficient: n-oktanol/vand:	Ikke bestemt.
· Viskositet:	
dynamisk:	Ikke bestemt.
kinematisk:	Ikke bestemt.
· Opløsningsmiddelindhold:	
Organiske opløsningsmidler:	20,0 %
Vand	80,0 %
VOC (EU)	20,00 %
· Tørstofindhold:	0,0 %
· 9.2 Andre oplysninger	Der står ingen yderligere, relevante informationer til rådighed.

PUNKT 10: Stabilitet og reaktivitet

- **10.1 Reaktivitet** Der står ingen yderligere, relevante informationer til rådighed.
- **10.2 Kemisk stabilitet**
- **Termisk nedbrydning/forhold, der bør undgås** Ingen nedbrydning ved formålsbestemt brug.
- **10.3 Risiko for farlige reaktioner** Der er ikke kendskab til nogen farlige reaktioner.
- **10.4 Forhold, der skal undgås** Der står ingen yderligere, relevante informationer til rådighed.
- **10.5 Materialer, der skal undgås:** Der står ingen yderligere, relevante informationer til rådighed.
- **10.6 Farlige nedbrydningsprodukter:** Der er ikke kendskab til nogen farlige nedbrydningsprodukter.

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PUNKT 11: Toksikologiske oplysninger

· 11.1 Oplysninger om toksikologiske virkninger

· Akut toksicitet

Farlig ved indånding, hudkontakt eller indånding.

· Klassificeringsrelevante LD/LC50-værdier:

50-00-0 formaldehyd

Oral	LD50	>200 mg/kg (rat)
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· Primær irriteringsvirkning:

· Hudætsning/-irritation

Forårsager hudirritation.

· Alvorlig øjenskade/øjenirritation

Forårsager alvorlig øjenirritation.

· Respiratorisk sensibilisering eller hudsensibilisering

Kan forårsage allergisk hudreaktion.

· CMR-virkninger (kræftfremkaldende egenskaber, mutagenicitet og reproduktionstoksicitet)

· Kimcellemutagenicitet

Mistænkt for at forårsage genetiske defekter.

· Kræftfremkaldende egenskaber

Kan fremkalde kræft.

· Reproduktionstoksicitet

Kriterierne for klassificering kan på grundlag af de foreliggende data ikke anses for at være opfyldt.

· Enkel STOT-eksponering

Kan forårsage irritation af luftvejene.

· Gentagne STOT-eksponeringer

Kriterierne for klassificering kan på grundlag af de foreliggende data ikke anses for at være opfyldt.

· Aspirationsfare

Kriterierne for klassificering kan på grundlag af de foreliggende data ikke anses for at være opfyldt.

PUNKT 12: Miljøoplysninger

· 12.1 Toksicitet

· **Toksicitet i vand:** Der står ingen yderligere, relevante informationer til rådighed.

· **12.2 Persistens og nedbrydelighed** Der står ingen yderligere, relevante informationer til rådighed.

· **12.3 Bioakkumuleringspotentiale** Der står ingen yderligere, relevante informationer til rådighed.

· **12.4 Mobilitet i jord** Der står ingen yderligere, relevante informationer til rådighed.

· Yderligere økologiske oplysninger:

· Generelle anvisninger:

Fareklasse for vand 2 (Selvklassificering): vandforurenende

Må ikke udledes i grundvandet, vandløb eller kloaksystemet.

Risiko for forurening af drikkevandet allerede ved udslip af små mængder i undergrunden.

· 12.5 Resultater af PBT- og vPvB-vurdering

· **PBT:** Ikke relevant.

· **vPvB:** Ikke relevant.

· **12.6 Andre negative virkninger** Der står ingen yderligere, relevante informationer til rådighed.

PUNKT 13: Bortskaffelse

· 13.1 Metoder til affaldsbehandling

· **Anbefaling:** Må ikke bortskaffes sammen med husholdningsaffald. Må ikke udledes i kloaksystemet.

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- **Urensede emballager:**
- **Anbefaling:** Bortskaffes i overensstemmelse med myndighedernes forskrifter.
- **Anbefalet rengøringsmiddel:** Vand, eventuelt tilsat rengøringsmidler.

PUNKT 14: Transportoplysninger

· **14.1 UN-nummer**

· **ADR, IMDG, IATA**

UN1993

· **14.2 UN-forsendelsesbetegnelse (UN proper shipping name)**

· **ADR**

1993 BRANDFARLIG VÆSKE, N.O.S.

· **IMDG, IATA**

FLAMMABLE LIQUID, N.O.S.

· **14.3 Transportfareklasse(r)**

· **ADR**



· **klasse**

3 Brandfarlige væsker

· **IMDG, IATA**

· **Class**

Ikke relevant

· **14.4 Emballagegruppe**

· **ADR, IMDG, IATA**

III

· **14.5 Miljøfarer:**

Ikke relevant.

· **14.6 Særlige forsigtighedsregler for brugeren**

· **Stowage Category**

Advarsel: Brandfarlige væsker

A

· **14.7 Bulktransport i henhold til bilag II til MARPOL og IBC-koden**

Ikke relevant.

· **Transport/yderligere oplysninger:**

· **ADR**

· **Begrænsede mængder (LQ)**

5L

· **Undtagne mængder (EQ)**

Kode: E1

Største tilladte nettomængde pr. indvendig emballage: 30 ml

Største tilladte nettomængde pr. ydre emballage: 1000 ml

· **IMDG**

· **Limited quantities (LQ)**

5L

· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**

UN 1993 BRANDFARLIG VÆSKE, N.O.S., 3, III

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PUNKT 15: Oplysninger om regulering

- **15.1 Særlige bestemmelser/særlig lovgivning for stoffet eller blandingen med hensyn til sikkerhed, sundhed og miljø**
- **Direktiv 2012/18/EU**
- **Navngivne farlige stoffer - BILAG I** Ingen af indholdsstofferne er optaget i listen.
- **Forordning (EF) nr. 1907/2006 BILAG XVII** Begrænsninger: 3, 28
- **Nationale forskrifter:**
- **Oplysninger vedrørende beskæftigelsesbegrænsning:**
Arbejdstagere må ikke udsættes for de kræftfremkaldende farestoffer som dette præparat indeholder. I enkelte tilfælde kan myndighederne bevillige undtagelser.
- **MAL-Code:** 5-6
- **15.2 Kemikaliesikkerhedsvurdering:** Der er ikke udført kemikaliesikkerhedsvurdering.

PUNKT 16: Andre oplysninger

Alle ovenstående angivelser er baseret på vores aktuelle viden, udgør dog ikke nogen tilsikring af produkttegenskaber og stifter heller ikke noget kontraktligt retsforhold.

- **Risikoangivelser**
 - H301 Giftig ved indtagelse.
 - H311 Giftig ved hudkontakt.
 - H314 Forårsager svære forbrændinger af huden og øjenskader.
 - H317 Kan forårsage allergisk hudreaktion.
 - H331 Giftig ved indånding.
 - H341 Mistænkt for at forårsage genetiske defekter.
 - H350 Kan fremkalde kræft.
- **Forkortelser og akronymer:**
 - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
 - IMDG: International Maritime Code for Dangerous Goods
 - IATA: International Air Transport Association
 - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - ELINCS: European List of Notified Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - VOC: Volatile Organic Compounds (USA, EU)
 - Måleteknisk Arbejdshygiejnisk Luftbehov
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - vPvB: very Persistent and very Bioaccumulative
 - Acute Tox. 3: Akut toksicitet – Kategori 3
 - Acute Tox. 4: Akut toksicitet – Kategori 4
 - Skin Corr. 1B: Hudætsning/hudirritation – Kategori 1B
 - Skin Irrit. 2: Hudætsning/hudirritation – Kategori 2
 - Eye Irrit. 2: Alvorlige øjenskader/øjenirritation – Kategori 2
 - Skin Sens. 1: Hudsensibilisering – Kategori 1
 - Muta. 2: Kimcellemutagenicitet – Kategori 2
 - Carc. 1B: Carcinogenicitet – Kategori 1B
 - STOT SE 3: Specifik målorgantoksicitet (enkelt eksponering) – Kategori 3

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KOHTA 1: Aineen tai seoksen ja yhtiön tai yrityksen tunnistetiedot

- **1.1 Tuotetunniste**
- **Kauppanimike:** Paraformaldehyde 20% Solution, EM Grade
- **Artikkelinumero:** 15713, 15713-SP, 15713-S
- **1.2 Aineen tai seoksen merkitykselliset tunnistetut käytöt ja käytöt, joita ei suositella**
Merkittäviä lisätietoja ei ole saatavilla.
- **Aineen / valmisteen käyttö** Laboratoriokemikaalit
- **1.3 Käyttöturvallisuustiedotteen toimittajan tiedot**
- **Valmistaja/toimittaja:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Tietoja antaa:** Product safety department
- **1.4 Hätäpuhelinnumero:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

KOHTA 2: Vaaran yksilöinti

- **2.1 Aineen tai seoksen luokitus**
- **Luokitus asetuksen (EY) N:o 1272/2008 mukaisesti**



GHS08 terveysvaara

Muta. 2 H341 Epäillään aiheuttavan perimävaurioita.
Carc. 1B H350 Saattaa aiheuttaa syöpää.



GHS07

Acute Tox. 4 H302 Haitallista nieltynä.
Acute Tox. 4 H312 Haitallista joutuessaan iholle.
Acute Tox. 4 H332 Haitallista hengitettynä.
Skin Irrit. 2 H315 Ärsyttää ihoa.
Eye Irrit. 2 H319 Ärsyttää voimakkaasti silmiä.
Skin Sens. 1 H317 Voi aiheuttaa allergisen ihoreaktion.
STOT SE 3 H335 Saattaa aiheuttaa hengitysteiden ärsytystä.

- **2.2 Merkinnät**
- **Merkinnät asetuksen (EY) N:o 1272/2008 mukaisesti** Tuote on luokiteltu ja merkitty CLP-asetuksen mukaan.
- **Varoitusmerkit**



GHS07 GHS08

- **Huomiosana** Vaara

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(jatkuu sivulla 1)

· **Vaaran määrävät komponentit etiketeissä:**

formaldehydi

· **Vaaralausekkeet**

H302+H312+H332 Haitallista nieltynä, joutuessaan iholle tai hengitettynä.

H315 Ärsyttää ihoa.

H319 Ärsyttää voimakkaasti silmiä.

H317 Voi aiheuttaa allergisen ihoreaktion.

H341 Epäillään aiheuttavan perimävaurioita.

H350 Saattaa aiheuttaa syöpää.

H335 Saattaa aiheuttaa hengitysteiden ärsytystä.

· **Turvausekkeet**

P261 Vältä pölyn/savun/kaasun/sumun/höyryn/suihkeen hengittämistä.

P280 Käytä suojakäsineitä/suojavaatetusta/silmiensuojainta/kasvosuojainta.

P305+P351+P338 JOS KEMIKAALIA JOUTUU SILMIIN: Huuhto huolellisesti vedellä usean minuutin ajan.

Poista mahdolliset piilolinssit, jos sen voi tehdä helposti. Jatka huuhtomista.

P322 Erityistoimenpiteitä tarvitaan (katso pakkauksen merkinnöissä).

P405 Varastoi lukitussa tilassa.

P501 Säilytä säiliö(t) noudattaen paikallisia/alueellisia/kansallisia/kansainvälisiä määräyksiä.

· **2.3 Muut vaarat**

· **PBT- ja vPvB-arvioinnin tulokset**

· **PBT:** Ei voida käyttää.

· **vPvB:** Ei voida käyttää.

KOHTA 3: Koostumus ja tiedot aineosista

· **3.2 Kemialliset ominaisuudet: Seokset**

· **Selostus:** Seuraavista aineista koostuva seos, jossa vaarattomia lisäaineita.

· **Sisältää vaarallisia aineita:**

CAS: 50-00-0	formaldehydi	>10-≤25%
EINECS: 200-001-8	Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Muta. 2, H341; Carc. 1B, H350; Skin Corr. 1B, H314; Skin Sens. 1, H317	

· **Lisätietoja:** Annettujen turvaohjeiden sanamuoto kappaleesta 16.

KOHTA 4: Ensiaputoimenpiteet

· **4.1 Ensiaputoimenpiteiden kuvaus**

· **Yleisohjeet:**

Myrkytysoireet voivat ilmaantua vasta useiden tuntien kuluttua. Tästä syystä henkilöt on pidettävä lääkärin tarkkailun alaisena ainakin 48 tuntia onnettomuuden jälkeen.

· **Hengitettynä:**

Huolehdittava riittävästä raittiin ilman saannista; käännyttävä varmuuden vuoksi lääkärin puoleen.

Tajuton pidettävä ja kuljetettava kyljellään.

· **Ihokosketuksessa:** Pestävä heti vedellä ja saippualla ja huuhdottava hyvin.

· **Aineen päästyä silmiin:**

Silmiä huuhdotaan luomet auki juoksevan veden alla useita minuutteja. Oireiden kestäessä käännytään lääkärin puoleen.

· **Nieltyä:** Saatettava lääkärin hoitoon.

· **4.2 Tärkeimmät oireet ja vaikutukset, sekä välittömät että viivästyneet** Merkittäviä lisätietoja ei ole saatavilla.

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- **4.3 Mahdollisesti tarvittavaa välitöntä lääketieteellistä apua ja erityishoitoa koskevat ohjeet**
Merkittäviä lisätietoja ei ole saatavilla.

KOHTA 5: Palontorjuntatoimenpiteet

- **5.1 Sammutusaineet**
- **Sopivat sammutusaineet:**
CO₂, kuivakemikaalisammutin tai vesisuihku. Suuremmat palot torjutaan vesisuihulla tai alkoholeja kestäväällä vaahdolla.
- **5.2 Aineesta tai seoksesta johtuvat erityiset vaarat** Merkittäviä lisätietoja ei ole saatavilla.
- **5.3 Palontorjuntaa koskevat ohjeet**
- **Erityinen suojavarustus:** Käytettävä hengityssuojainta.

KOHTA 6: Toimenpiteet onnettomuuspäästöissä

- **6.1 Varotoimenpiteet, henkilönsuojaimet ja menettely hätätilanteessa** Ei tarvita.
- **6.2 Ympäristöön kohdistuvat varotoimet:**
Ohennettava runsaalla vedellä.
Estettävä pääsy viemäreihin/pintavesiin/pohjaveteen.
- **6.3 Suojarakenteita ja puhdistusta koskevat menetelmät ja -välineet:**
Imettävä nestettä sitovalla aineella (hiekkä, piimaa, hapon sidosaaine, yleisidosaine, sahajauho).
Saastunut aine on jätteenä hävitettävä kohdan 13 mukaisesti.
Huolehdittava riittävästä tuuletuksesta.
- **6.4 Viittäukset muihin kohtiin**
Turvallista käsittelyä koskevia ohjeita kappaleessa 7.
Henkilökohtaista suojavarustusta koskevia ohjeita kappaleessa 8.
Aineen hävitystä koskevia ohjeita kappaleessa 13.

KOHTA 7: Käsittely ja varastointi

- **7.1 Turvallisen käsittelyn edellyttämät toimenpiteet**
Huolehdittava hyvästä tuuletuksesta/imusta työpaikalla.
Säiliöt avattava ja käsiteltävä varovasti.
Vältettävä aerosolin muodostusta.
- **Palo- ja räjähdysuojaohteet:** Pidettävä hengityssuojain käyttövalmiina.
- **7.2 Turvallisen varastoinnin edellyttämät olosuhteet, mukaan luettuina yhteensopimattomuudet**
- **Varastointi:**
- **Varastotiloille ja säiliöille asetettavat vaatimukset:** Ei erikoisvaatimuksia.
- **Yhteisvarastointiohteet:** Ei tarvita.
- **Lisätietoja varastointiehtoihin:** Astiat on pidettävä tiiviisti suljettuina.
- **7.3 Erityinen loppukäyttö** Merkittäviä lisätietoja ei ole saatavilla.

KOHTA 8: Altistumisen ehkäiseminen ja henkilönsuojaimet

- **Lisäohjeita teknisten laitteiden varustukseen:** Ei muita tietoja, ks. kohta 7.

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· 8.1 Valvontaa koskevat muuttujat

· **Aineosat työpaikkakohtaisin valvottavin raja-arvoin:**

50-00-0 formaldehydi

HTP	Pitkäaikaisarvo: 0,37 mg/m ³ , 0,3 ppm
	Kattoarvo: 1,2 mg/m ³ , 1 ppm

· **Lisäohjeet:** Tiedot perustuvat valmistushetkellä voimassaoleviin luetteloihin.

· 8.2 Altistumisen ehkäiseminen

· **Henkilökohtainen suojavarustus:**

· **Yleiset suoja- ja hygienia-toimenpiteet:**

Pidettävä loitolla elintarvikkeista, juomista ja rehuista.

Likaantuneet, aineen saastuttamat vaatekappaleet on riisuttava välittömästi.

Kädet on pestävä ennen taukoja ja työn päätyttyä.

Suojavaatetus on säilytettävä erikseen.

Vältettävä ihokosketusta ja kosketusta silmiin.

· **Hengityssuoja:**

Lyhytaikaisessa tai vähäisessä altistuksessa hengityssuojasuodin; intensiivisessä tai pitkäaikaisessa rasituksessa ulkoilmasta riippumaton hengityssuojain.

· **Käsisuojus:**



Suojakäsineet

Käsin materiaalin tulee olla tuotetta/ainetta/valmistetta kestävä ja läpäisemätöntä.

Puuttuvien testien vuoksi suositusta soveltuvasta suojakäsin materiaalista tuotteelle/ valmisteelle / kemikaalikohteelle ei voida antaa.

Suojakäsin materiaalin valinnassa on otettava huomioon läpäisyajat, läpäisevyyskerroin ja kuluminen.

· **Käsinmateriaali**

Soveltuvan käsinetyypin valikoima ei riipu yksinomaan materiaalista vaan myös muista laatuominaisuuksista ja vaihtelee eri valmistajilla. Koska tuote on valmiste, joka koostuu eri aineista, ei suojakäsin materiaalin kestävyys ole ennalta arvioitavissa vaan pitää tarkistaa ennen käyttöä.

· **Käsinmateriaalin läpäisy aika**

Tarkka läpäisy aika on selvítettävä suojakäsinevalmistajalta ja sitä on noudatettava.

· **Silmäsuojus:**



Tiiviit suojalasit

KOHTA 9: Fysikaaliset ja kemialliset ominaisuudet

· **9.1 Fysikaalisia ja kemiallisia perusominaisuuksia koskevat tiedot**

· **Yleiset ohjeet**

· **Olomuoto:**

Muoto: Neste

Väri: Kirkas

· **Haju:** Tyypillinen

· **Hajukynnys:** Ei määrätty.

· **pH-arvo:** Ei määrätty.

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(jatkuu sivulla 4)

· Tilanmuutos	
Sulamis- tai jäätymispiste:	<i>Ei määrätty.</i>
Kiehumispiste ja kiehumisalue:	<i>>93 °C</i>
· Leimahduspiste:	<i>>60 °C</i>
· Syttyvyys (kiinteät aineet, kaasut):	<i>Ei voida käyttää.</i>
· Syttymislämpötila:	<i>300 °C</i>
· Hajoamislämpötila:	<i>Ei määrätty.</i>
· Itsesyttymislämpötila:	<i>Tuote ei ole itsestään syttyvä.</i>
· Räjähävyys:	<i>Ei määrätty.</i>
· Räjähdyksrajat:	
Alempi:	<i>7 Vol %</i>
Ylempi:	<i>73 Vol %</i>
· Höyrypaine 20 °C lämpötilassa:	<i>23 hPa</i>
· Tiheys 20 °C lämpötilassa:	<i>0,962 g/cm³</i>
· Suhteellinen tiheys	<i>Ei määrätty.</i>
· Höyryntiheys:	<i>Ei määrätty.</i>
· Haihtumisnopeus:	<i>Ei määrätty.</i>
· Liukenevuus/sekoittuvuus veteen:	<i>Täydellisesti sekoittuva.</i>
· Jakautumiskerroin: n-oktanoli/vesi:	<i>Ei määrätty.</i>
· Viskositeetti:	
Dynaaminen:	<i>Ei määrätty.</i>
Kinemaattinen:	<i>Ei määrätty.</i>
· Liuoteainepitoisuus:	
Orgaaniset liuoteaineet:	<i>20,0 %</i>
Vesi:	<i>80,0 %</i>
VOC (EY)	<i>20,00 %</i>
· Kinneainepitoisuus:	<i>0,0 %</i>
· 9.2 Muut tiedot	<i>Merkittäviä lisätietoja ei ole saatavilla.</i>

KOHTA 10: Stabiilisuus ja reaktiivisuus

- **10.1 Reaktiivisuus** Merkittäviä lisätietoja ei ole saatavilla.
- **10.2 Kemiallinen stabiilisuus**
- **Terminen hajoavuus / vältettävät olosuhteet:** *Ei hajoantumista määräystenmukaisessa käytössä.*
- **10.3 Vaarallisten reaktioiden mahdollisuus** *Ei tiedossa vaarallisia reaktioita.*
- **10.4 Vältettävät olosuhteet** Merkittäviä lisätietoja ei ole saatavilla.
- **10.5 Yhteensopimattomat materiaalit:** *Merkittäviä lisätietoja ei ole saatavilla.*
- **10.6 Vaaralliset hajoamistuotteet:** *Tiedossa ei ole vaarallisia hajoamistuotteita.*

FI

(jatkuu sivulla 6)

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KOHTA 11: Myrkyllisyyteen liittyvät tiedot

- **11.1 Tiedot myrkyllisistä vaikutuksista**
 - **Välitön myrkyllisyys**
Haitallista nieltynä, joutuessaan iholle tai hengitettynä.
- | | | |
|--|------|------------------|
| · Luokitellurelevantti LD/LC50-arvot: | | |
| 50-00-0 formaldehydi | | |
| Oraali | LD50 | >200 mg/kg (rat) |
- **Ensisijainen ärsyttävä vaikutus:**
 - **Ihosityttövyys/ihoärsytys**
Ärsyttää ihoa.
 - **Vakava silmävaurio/silmä-ärsytys**
Ärsyttää voimakkaasti silmiä.
 - **Hengitysteiden tai ihon herkistyminen**
Voi aiheuttaa allergisen ihoreaktion.
 - **CMR-vaikutukset eli syöpää aiheuttavat, perimää vaurioittavat ja lisääntymiselle vaaralliset vaikutukset**
 - **Sukusolujen perimää vaurioittavat vaikutukset**
Epäillään aiheuttavan perimävaurioita.
 - **Syöpää aiheuttavat vaikutukset**
Saattaa aiheuttaa syöpää.
 - **Lisääntymiselle vaaralliset vaikutukset** Saatavilla olevien tietojen perusteella luokituskriteerit eivät täyty.
 - **Elinkohtainen myrkyllisyys – kerta-altistuminen**
Saattaa aiheuttaa hengitysteiden ärsytystä.
 - **Elinkohtainen myrkyllisyys – toistuva altistuminen**
Saatavilla olevien tietojen perusteella luokituskriteerit eivät täyty.
 - **Aspiraatiovaara** Saatavilla olevien tietojen perusteella luokituskriteerit eivät täyty.

KOHTA 12: Tiedot vaarallisuudesta ympäristölle

- **12.1 Myrkyllisyys**
- **Vesimyrkyllisyys:** Merkittäviä lisätietoja ei ole saatavilla.
- **12.2 Pysyvyys ja hajoavuus** Merkittäviä lisätietoja ei ole saatavilla.
- **12.3 Biokertyvyys** Merkittäviä lisätietoja ei ole saatavilla.
- **12.4 Liikkuvuus maaperässä** Merkittäviä lisätietoja ei ole saatavilla.
- **Ekologisia lisätietoja:**
- **Yleisohjeita:**
Vesistövaarallisuusluokka 2 (Oma luokitus): vesistöä vaarantava
Estetään pääsy pohjaveteen, vesistöihin, viemäristöön.
Juomavesi vaaraantuu jo pienten määrien päästessä maaperään.
- **12.5 PBT- ja vPvB-arvioinnin tulokset**
- **PBT:** Ei voida käyttää.
- **vPvB:** Ei voida käyttää.
- **12.6 Muut haitalliset vaikutukset** Merkittäviä lisätietoja ei ole saatavilla.

KOHTA 13: Jätteiden käsittelyyn liittyvät näkökohdat

- **13.1 Jätteiden käsittelymenetelmät**
- **Suositus:** Ei voida hävittää yhdessä talousjätteiden kanssa. Ei saa päästää viemäristöön.
- **Puhdistamattomat pakkaukset:**
- **Suositus:** Hävitettävä virallisten määräysten mukaisesti.

(jatkuu sivulla 7)

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· Suositeltava puhdistusaine: Vesi, johon tarvittaessa lisätään puhdistusaineita.

KOHTA 14: Kuljetustiedot

· 14.1 YK-numero · ADR, IMDG, IATA	UN1993
· 14.2 Kuljetuksessa käytettävä virallinen nimi · ADR · IMDG, IATA	1993 PALAVA NESTE, N.O.S. FLAMMABLE LIQUID, N.O.S.
· 14.3 Kuljetuksen vaaraluokka · ADR	
	
· luokka	3 Palavat nesteet
· IMDG, IATA · Class	tarpeeton
· 14.4 Pakkausryhmä · ADR, IMDG, IATA	III
· 14.5 Ympäristövaarat:	Ei voida käyttää.
· 14.6 Erityiset varotoimet käyttäjälle · Stowage Category	Varoitus: Palavat nesteet A
· 14.7 Kuljetus irtolastina Marpol-sopimuksen II liitteen ja IBC-säännösten mukaisesti	Ei voida käyttää.
· Kuljetus/lisätietoja:	
· ADR · Rajoitetut määrät (LQ) · Poikkeusmäärät (EQ)	5L Koodi: E1 Enimmäisnettomäärä sisäpakkausta kohti: 30 ml Enimmäisnettomäärä ulkopakkausta kohti: 1000 ml
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 1993 PALAVA NESTE, N.O.S., 3, III

KOHTA 15: Lainsäädäntöä koskevat tiedot

- 15.1 Nimenomaisesti ainetta tai seosta koskevat turvallisuus-, terveys- ja ympäristösäännökset tai -lainsäädäntö
- Direktiivi 2012/18/EU
- Nimetyt vaaralliset aineet - LIITE I sisältäviä aineita ei ole lueteltu
- NEUVOSTON ASETUS (EY) N:o 1907/2006 LIITE XVII Rajoitusehdot: 3, 28

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- **Kansalliset määräykset:**
- **Työskenteleyä rajoittavat huomautukset:**
Työntekijöitä ei saa altistaa tämän valmisteen sisältämille syöpää aiheuttaville vaarallisille aineille. Virastot voivat erikoistapauksessa antaa poikkeusluvan.
- **15.2 Kemikaaliturvallisuusarviointi:** *Kemikaaliturvallisuusarviointia ei ole tehty.*

KOHTA 16: Muut tiedot

Annetut tiedot perustuvat tähänhetkisiin tietoihimme. Ne eivät kuitenkaan anna takuuta tuotteen ominaisuuksista eivätkä aikaansaa sopimuksellista oikeussuhdetta.

- **Asiaankuuluvat lausekkeet**

- H301 Myrkyllistä nieltynä.
- H311 Myrkyllistä joutuessaan iholle.
- H314 Voimakkaasti ihoa syövyttävää ja silmiä vaurioittavaa.
- H317 Voi aiheuttaa allergisen ihoreaktion.
- H331 Myrkyllistä hengitettynä.
- H341 Epäillään aiheuttavan perimävaurioita.
- H350 Saattaa aiheuttaa syöpää.

- **Lyhenteet ja lyhytnimet:**

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 3: Välitön myrkyllisyys – Katgoria 3
- Acute Tox. 4: Välitön myrkyllisyys – Katgoria 4
- Skin Corr. 1B: Ihosyövyttävyys/ihoärsytys – Katgoria 1B
- Skin Irrit. 2: Ihosyövyttävyys/ihoärsytys – Katgoria 2
- Eye Irrit. 2: Vakava silmävaurio/silmä-ärsytys – Katgoria 2
- Skin Sens. 1: Ihoa herkistävä – Katgoria 1
- Muta. 2: Sukusolujen perimää vaurioittavat vaikutukset – Katgoria 2
- Carc. 1B: Syöpää aiheuttavat vaikutukset – Katgoria 1B
- STOT SE 3: Elinkohtainen myrkyllisyys (kerta-altistuminen) – Katgoria 3

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RUBRIQUE 1: Identification de la substance/du mélange et de la société/l'entreprise

- **1.1 Identificateur de produit**
- **Nom du produit:** Paraformaldehyde 20% Solution, EM Grade
- **Code du produit:** 15713, 15713-SP, 15713-S
- **1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées**
Pas d'autres informations importantes disponibles.
- **Emploi de la substance / de la préparation** Produits chimiques pour laboratoires
- **1.3 Renseignements concernant le fournisseur de la fiche de données de sécurité**
- **Producteur/fournisseur:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Service chargé des renseignements:** Product safety department
- **1.4 Numéro d'appel d'urgence:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

RUBRIQUE 2: Identification des dangers

- **2.1 Classification de la substance ou du mélange**
- **Classification selon le règlement (CE) n° 1272/2008**



GHS08 danger pour la santé

- Muta. 2 H341 Susceptible d'induire des anomalies génétiques.
Carc. 1B H350 Peut provoquer le cancer.



GHS07

- Acute Tox. 4 H302 Nocif en cas d'ingestion.
Acute Tox. 4 H312 Nocif par contact cutané.
Acute Tox. 4 H332 Nocif par inhalation.
Skin Irrit. 2 H315 Provoque une irritation cutanée.
Eye Irrit. 2 H319 Provoque une sévère irritation des yeux.
Skin Sens. 1 H317 Peut provoquer une allergie cutanée.
STOT SE 3 H335 Peut irriter les voies respiratoires.

- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** Le produit est classifié et étiqueté selon le règlement CLP.
- **Pictogrammes de danger**



GHS07 GHS08

- **Mention d'avertissement** Danger

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· Composants dangereux déterminants pour l'étiquetage:

Formaldéhyde

· Mentions de danger

H302+H312+H332 Nocif en cas d'ingestion, de contact cutané ou d'inhalation.

H315 Provoque une irritation cutanée.

H319 Provoque une sévère irritation des yeux.

H317 Peut provoquer une allergie cutanée.

H341 Susceptible d'induire des anomalies génétiques.

H350 Peut provoquer le cancer.

H335 Peut irriter les voies respiratoires.

· Conseils de prudence

P261 Éviter de respirer les poussières/fumées/gaz/brouillards/vapeurs/aérosols.

P280 Porter des gants de protection/des vêtements de protection/un équipement de protection des yeux/du visage.

P305+P351+P338 EN CAS DE CONTACT AVEC LES YEUX: rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer.

P322 Mesures spécifiques (voir sur cette étiquette).

P405 Garder sous clef.

P501 Éliminer le contenu/récipient conformément à la réglementation locale/régionale/nationale/internationale.





· 2.3 Autres dangers
· Résultats des évaluations PBT et vPvB
· PBT: Non applicable.

· vPvB: Non applicable.

RUBRIQUE 3: Composition/informations sur les composants

· 3.2 Caractérisation chimique: Mélanges
· Description: Mélange des substances mentionnées à la suite avec des additifs non dangereux.

· Composants dangereux:

CAS: 50-00-0	Formaldéhyde	>10-≤25%
EINECS: 200-001-8	 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331;  Muta. 2, H341; Carc. 1B, H350;  Skin Corr. 1B, H314;  Skin Sens. 1, H317	

· Indications complémentaires: Pour le libellé des phrases de risque citées, se référer au chapitre 16.

RUBRIQUE 4: Premiers secours

· 4.1 Description des premiers secours
· Remarques générales:

Les symptômes d'intoxication peuvent apparaître après de nombreuses heures seulement; une surveillance médicale est donc nécessaire au moins 48 heures après un accident.

· Après inhalation:

Donner de l'air frais en abondance et consulter un médecin pour plus de sécurité.

En cas d'inconscience, coucher et transporter la personne en position latérale stable.

· Après contact avec la peau: Laver immédiatement à l'eau et au savon et bien rincer.

· Après contact avec les yeux:

Rincer les yeux, pendant plusieurs minutes, sous l'eau courante en écartant bien les paupières. Si les troubles persistent, consulter un médecin.

· Après ingestion: Consulter immédiatement un médecin.

· 4.2 Principaux symptômes et effets, aigus et différés Pas d'autres informations importantes disponibles.

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- **4.3 Indication des éventuels soins médicaux immédiats et traitements particuliers nécessaires**
Pas d'autres informations importantes disponibles.

RUBRIQUE 5: Mesures de lutte contre l'incendie

- **5.1 Moyens d'extinction**
- **Moyens d'extinction:**
CO₂, poudre d'extinction ou eau pulvérisée. Combattre les foyers importants avec de l'eau pulvérisée ou de la mousse résistant à l'alcool.
- **5.2 Dangers particuliers résultant de la substance ou du mélange**
Pas d'autres informations importantes disponibles.
- **5.3 Conseils aux pompiers**
- **Équipement spécial de sécurité:** Porter un appareil de protection respiratoire.

RUBRIQUE 6: Mesures à prendre en cas de dispersion accidentelle

- **6.1 Précautions individuelles, équipement de protection et procédures d'urgence** Pas nécessaire.
- **6.2 Précautions pour la protection de l'environnement:**
Diluer avec beaucoup d'eau.
Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.
- **6.3 Méthodes et matériel de confinement et de nettoyage:**
Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).
Evacuer les matériaux contaminés en tant que déchets conformément au point 13.
Assurer une aération suffisante.
- **6.4 Référence à d'autres rubriques**
Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.
Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.
Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

RUBRIQUE 7: Manipulation et stockage

- **7.1 Précautions à prendre pour une manipulation sans danger**
Veiller à une bonne ventilation/aspiration du poste de travail.
Ouvrir et manipuler les récipients avec précaution.
Eviter la formation d'aérosols.
- **Préventions des incendies et des explosions:** Tenir des appareils de protection respiratoire prêts.
- **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Aucune exigence particulière.
- **Indications concernant le stockage commun:** Pas nécessaire.
- **Autres indications sur les conditions de stockage:** Tenir les emballages hermétiquement fermés.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

RUBRIQUE 8: Contrôles de l'exposition/protection individuelle

- **Indications complémentaires pour l'agencement des installations techniques:**
Sans autre indication, voir point 7.

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· 8.1 Paramètres de contrôle

· Composants présentant des valeurs-seuil à surveiller par poste de travail:

50-00-0 Formaldéhyde

VME	Valeur momentanée: 1 ppm
	Valeur à long terme: 0,5 ppm
	C1B, M2

· Remarques supplémentaires:

Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.

· 8.2 Contrôles de l'exposition

· Equipement de protection individuel:

· Mesures générales de protection et d'hygiène:

Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.

Retirer immédiatement les vêtements souillés ou humectés.

Se laver les mains avant les pauses et en fin de travail.

Conserver à part les vêtements de protection.

Eviter tout contact avec les yeux et avec la peau.

· Protection respiratoire:

En cas d'exposition faible ou de courte durée, utiliser un filtre respiratoire; en cas d'exposition intense ou durable, utiliser un appareil de respiration indépendant de l'air ambiant.

· Protection des mains:



Gants de protection

Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.

À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.

Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.

· Matériau des gants

Le choix de gants appropriés dépend non seulement du matériau, mais aussi d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre. Puisque le produit représente une préparation composée de plusieurs substances, la résistance des matériaux des gants ne peut pas être calculée à l'avance et doit, alors, être contrôlée avant l'utilisation.

· Temps de pénétration du matériau des gants

Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.

· Protection des yeux:



Lunettes de protection hermétiques

RUBRIQUE 9: Propriétés physiques et chimiques

· 9.1 Informations sur les propriétés physiques et chimiques essentielles

· Indications générales

· Aspect:

Forme:

Liquide

Couleur:

Transparent

· Odeur:

Caractéristique

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· Seuil olfactif:	Non déterminé.
· valeur du pH:	Non déterminé.
· Changement d'état Point de fusion/point de congélation:	Non déterminé.
Point initial d'ébullition et intervalle d'ébullition:	>93 °C
· Point d'éclair	>60 °C
· Inflammabilité (solide, gaz):	Non applicable.
· Température d'inflammation:	300 °C
· Température de décomposition:	Non déterminé.
· Température d'auto-inflammabilité:	Le produit ne s'enflamme pas spontanément.
· Propriétés explosives:	Non déterminé.
· Limites d'explosion: Inférieure:	7 Vol %
Supérieure:	73 Vol %
· Pression de vapeur à 20 °C:	23 hPa
· Densité à 20 °C:	0,962 g/cm ³
· Densité relative	Non déterminé.
· Densité de vapeur:	Non déterminé.
· Taux d'évaporation:	Non déterminé.
· Solubilité dans/miscibilité avec l'eau:	Entièrement miscible
· Coefficient de partage: n-octanol/eau:	Non déterminé.
· Viscosité: Dynamique:	Non déterminé.
Cinématique:	Non déterminé.
· Teneur en solvants: Solvants organiques:	20,0 %
Eau:	80,0 %
VOC (CE)	20,00 %
Teneur en substances solides:	0,0 %
· 9.2 Autres informations	Pas d'autres informations importantes disponibles.

RUBRIQUE 10: Stabilité et réactivité

- **10.1 Réactivité** Pas d'autres informations importantes disponibles.
- **10.2 Stabilité chimique**
- **Décomposition thermique/conditions à éviter:** Pas de décomposition en cas d'usage conforme.
- **10.3 Possibilité de réactions dangereuses** Aucune réaction dangereuse connue.
- **10.4 Conditions à éviter** Pas d'autres informations importantes disponibles.
- **10.5 Matières incompatibles:** Pas d'autres informations importantes disponibles.
- **10.6 Produits de décomposition dangereux:** Pas de produits de décomposition dangereux connus

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RUBRIQUE 11: Informations toxicologiques

· 11.1 Informations sur les effets toxicologiques

· Toxicité aiguë

Nocif en cas d'ingestion, de contact cutané ou d'inhalation.

· Valeurs LD/LC50 déterminantes pour la classification:

50-00-0 Formaldéhyde

Oral	LD50	>200 mg/kg (rat)
------	------	------------------

· Effet primaire d'irritation:

· Corrosion cutanée/irritation cutanée

Provoque une irritation cutanée.

· Lésions oculaires graves/irritation oculaire

Provoque une sévère irritation des yeux.

· Sensibilisation respiratoire ou cutanée

Peut provoquer une allergie cutanée.

· Effets CMR (cancérogène, mutagène et toxique pour la reproduction)

· Mutagénicité sur les cellules germinales

Susceptible d'induire des anomalies génétiques.

· Cancérogénicité

Peut provoquer le cancer.

· Toxicité pour la reproduction

Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

· Toxicité spécifique pour certains organes cibles - exposition unique

Peut irriter les voies respiratoires.

· Toxicité spécifique pour certains organes cibles - exposition répétée

Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

· Danger par aspiration Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

RUBRIQUE 12: Informations écologiques

· 12.1 Toxicité

· **Toxicité aquatique:** Pas d'autres informations importantes disponibles.

· **12.2 Persistance et dégradabilité** Pas d'autres informations importantes disponibles.

· **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.

· **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.

· Autres indications écologiques:

· Indications générales:

Catégorie de pollution des eaux 2 (D) (Classification propre): polluant

Ne pas laisser pénétrer dans la nappe phréatique, les eaux ou les canalisations.

Danger pour l'eau potable dès fuite d'une petite quantité dans le sous-sol.

· 12.5 Résultats des évaluations PBT et VPVB

· **PBT:** Non applicable.

· **vPvB:** Non applicable.

· **12.6 Autres effets néfastes** Pas d'autres informations importantes disponibles.

RUBRIQUE 13: Considérations relatives à l'élimination

· 13.1 Méthodes de traitement des déchets

· **Recommandation:** Ne doit pas être évacué avec les ordures ménagères. Ne pas laisser pénétrer dans les égouts.

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- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.
- **Produit de nettoyage recommandé:** Eau, éventuellement avec des produits de nettoyage

RUBRIQUE 14: Informations relatives au transport

- **14.1 Numéro ONU**
- **ADR, IMDG, IATA**

UN1993

- **14.2 Désignation officielle de transport de l'ONU**

- **ADR**
- **IMDG, IATA**

1993 LIQUIDE INFLAMMABLE, N.S.A.
FLAMMABLE LIQUID, N.O.S.

- **14.3 Classe(s) de danger pour le transport**

- **ADR**



- **Classe**

3 Liquides inflammables.

- **IMDG, IATA**
- **Class**

néant

- **14.4 Groupe d'emballage**

- **ADR, IMDG, IATA**

III

- **14.5 Dangers pour l'environnement:**

Non applicable.

- **14.6 Précautions particulières à prendre par l'utilisateur**

Attention: Liquides inflammables.

- **Stowage Category**

A

- **14.7 Transport en vrac conformément à l'annexe II de la convention Marpol et au recueil IBC**

Non applicable.

- **Indications complémentaires de transport:**

- **ADR**

- **Quantités limitées (LQ)**
- **Quantités exceptées (EQ)**

5L
Code: E1
Quantité maximale nette par emballage intérieur: 30 ml
Quantité maximale nette par emballage extérieur: 1000 ml

- **IMDG**

- **Limited quantities (LQ)**
- **Excepted quantities (EQ)**

5L
Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

- **"Règlement type" de l'ONU:**

UN 1993 LIQUIDE INFLAMMABLE, N.S.A., 3, III

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RUBRIQUE 15: Informations relatives à la réglementation

- **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**
- **Directive 2012/18/UE**
- **Substances dangereuses désignées - ANNEXE I** Aucun des composants n'est compris.
- **RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII** Conditions de limitation: 3, 28
- **Prescriptions nationales:**
- **Indications sur les restrictions de travail:**
Le personnel ne doit pas être exposé aux substances dangereuses cancérigènes contenues dans cette préparation. Les autorités peuvent autoriser des exceptions dans des cas particuliers.
- **15.2 Évaluation de la sécurité chimique:** Une évaluation de la sécurité chimique n'a pas été réalisée.

RUBRIQUE 16: Autres informations

Ces indications sont fondées sur l'état actuel de nos connaissances, mais ne constituent pas une garantie quant aux propriétés du produit et ne donnent pas lieu à un rapport juridique contractuel.

- **Phrases importantes**
- H301 Toxique en cas d'ingestion.
- H311 Toxique par contact cutané.
- H314 Provoque des brûlures de la peau et des lésions oculaires graves.
- H317 Peut provoquer une allergie cutanée.
- H331 Toxique par inhalation.
- H341 Susceptible d'induire des anomalies génétiques.
- H350 Peut provoquer le cancer.
- **Acronymes et abréviations:**
- ADR: Accord européen sur le transport des marchandises dangereuses par Route
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 3: Toxicité aiguë – Catégorie 3
- Acute Tox. 4: Toxicité aiguë – Catégorie 4
- Skin Corr. 1B: Corrosion cutanée/irritation cutanée – Catégorie 1B
- Skin Irrit. 2: Corrosion cutanée/irritation cutanée – Catégorie 2
- Eye Irrit. 2: Lésions oculaires graves/irritation oculaire – Catégorie 2
- Skin Sens. 1: Sensibilisation cutanée – Catégorie 1
- Muta. 2: Mutagénicité sur les cellules germinales – Catégorie 2
- Carc. 1B: Cancérogénicité – Catégorie 1B
- STOT SE 3: Toxicité spécifique pour certains organes cibles (exposition unique) – Catégorie 3

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ABSCHNITT 1: Bezeichnung des Stoffs beziehungsweise des Gemischs und des Unternehmens

- **1.1 Produktidentifikator**
- **Handelsname:** Paraformaldehyde 20% Solution, EM Grade
- **Artikelnummer:** 15713, 15713-SP, 15713-S
- **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**
Keine weiteren relevanten Informationen verfügbar.
- **Verwendung des Stoffes / des Gemisches** Laborchemikalien
- **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**
- **Hersteller/Lieferant:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com

Science Services GmbH
Unterhachinger Str. 75
81737 München Germany

Tel: +49(0)89 18 93 668-0
safety@scienceservices.de

Deutschland: +49 (0)89 19240, 24h Giftnotruf Munchen, www.toxinfo.org
Osterreich: +43 1406 43 43, Gesundheit Osterreich GmbH, 24 h
- **Auskunftgebender Bereich:** Product safety department
- **1.4 Notrufnummer:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

ABSCHNITT 2: Mögliche Gefahren

- **2.1 Einstufung des Stoffs oder Gemischs**
- **Einstufung gemäß Verordnung (EG) Nr. 1272/2008**



GHS08 Gesundheitsgefahr

- Muta. 2 H341 Kann vermutlich genetische Defekte verursachen.
Carc. 1B H350 Kann Krebs erzeugen.



GHS07

- Acute Tox. 4 H302 Gesundheitsschädlich bei Verschlucken.
Acute Tox. 4 H312 Gesundheitsschädlich bei Hautkontakt.
Acute Tox. 4 H332 Gesundheitsschädlich bei Einatmen.
Skin Irrit. 2 H315 Verursacht Hautreizungen.
Eye Irrit. 2 H319 Verursacht schwere Augenreizung.
Skin Sens. 1 H317 Kann allergische Hautreaktionen verursachen.

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STOT SE 3 H335 Kann die Atemwege reizen.

· 2.2 Kennzeichnungselemente

· Kennzeichnung gemäß Verordnung (EG) Nr. 1272/2008

Das Produkt ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

· Gefahrenpiktogramme



GHS07 GHS08

· Signalwort Gefahr

· Gefahrbestimmende Komponenten zur Etikettierung:

Formaldehyd

· Gefahrenhinweise

H302+H312+H332 Gesundheitsschädlich bei Verschlucken, Hautkontakt oder Einatmen.

H315 Verursacht Hautreizungen.

H319 Verursacht schwere Augenreizung.

H317 Kann allergische Hautreaktionen verursachen.

H341 Kann vermutlich genetische Defekte verursachen.

H350 Kann Krebs erzeugen.

H335 Kann die Atemwege reizen.

· Sicherheitshinweise

P261 Einatmen von Staub/Rauch/Gas/Nebel/Dampf/Aerosol vermeiden.

P280 Schutzhandschuhe/Schutzkleidung/Augenschutz/Gesichtsschutz tragen.

P305+P351+P338 BEI KONTAKT MIT DEN AUGEN: Einige Minuten lang behutsam mit Wasser spülen. Eventuell vorhandene Kontaktlinsen nach Möglichkeit entfernen. Weiter spülen.

P322 Gezielte Maßnahmen (siehe auf diesem Kennzeichnungsetikett).

P405 Unter Verschluss aufbewahren.

P501 Entsorgung des Inhalts / des Behälters gemäß den örtlichen / regionalen / nationalen / internationalen Vorschriften.

· Zusätzliche Angaben:

Nur für gewerbliche Anwender.

· 2.3 Sonstige Gefahren

· Ergebnisse der PBT- und vPvB-Beurteilung

· **PBT:** Nicht anwendbar.

· **vPvB:** Nicht anwendbar.

ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

· 3.2 Chemische Charakterisierung: Gemische

· **Beschreibung:** Gemisch aus nachfolgend angeführten Stoffen mit ungefährlichen Beimengungen.

· Gefährliche Inhaltsstoffe:

CAS: 50-00-0	Formaldehyd	>10-≤25%
EINECS: 200-001-8	Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Muta. 2, H341; Carc. 1B, H350; Skin Corr. 1B, H314; Skin Sens. 1, H317	

· **Zusätzliche Hinweise:** Der Wortlaut der angeführten Gefahrenhinweise ist dem Abschnitt 16 zu entnehmen.

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ABSCHNITT 4: Erste-Hilfe-Maßnahmen

· **4.1 Beschreibung der Erste-Hilfe-Maßnahmen**

· **Allgemeine Hinweise:**

Vergiftungssymptome können erst nach vielen Stunden auftreten, deshalb ärztliche Überwachung mindestens 48 Stunden nach einem Unfall.

· **Nach Einatmen:**

Reichlich Frischluftzufuhr und sicherheitshalber Arzt aufsuchen.

Bei Bewusstlosigkeit Lagerung und Transport in stabiler Seitenlage.

· **Nach Hautkontakt:** Sofort mit Wasser und Seife abwaschen und gut nachspülen.

· **Nach Augenkontakt:**

Augen mehrere Minuten bei geöffnetem Lidspalt unter fließendem Wasser spülen. Bei anhaltenden Beschwerden Arzt konsultieren.

· **Nach Verschlucken:** Sofort Arzt aufsuchen.

· **4.2 Wichtigste akute und verzögert auftretende Symptome und Wirkungen**

Keine weiteren relevanten Informationen verfügbar.

· **4.3 Hinweise auf ärztliche Soforthilfe oder Spezialbehandlung**

Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 5: Maßnahmen zur Brandbekämpfung

· **5.1 Löschmittel**

· **Geeignete Löschmittel:**

CO₂, Löschpulver oder Wassersprühstrahl. Größeren Brand mit Wassersprühstrahl oder alkoholbeständigem Schaum bekämpfen.

· **5.2 Besondere vom Stoff oder Gemisch ausgehende Gefahren**

Keine weiteren relevanten Informationen verfügbar.

· **5.3 Hinweise für die Brandbekämpfung**

· **Besondere Schutzausrüstung:** Atemschutzgerät anlegen.

ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

· **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**
Nicht erforderlich.

· **6.2 Umweltschutzmaßnahmen:**

Mit viel Wasser verdünnen.

Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.

· **6.3 Methoden und Material für Rückhaltung und Reinigung:**

Mit flüssigkeitsbindendem Material (Sand, Kieselgur, Säurebinder, Universalbinder, Sägemehl) aufnehmen.

Kontaminiertes Material als Abfall nach Abschnitt 13 entsorgen.

Für ausreichende Lüftung sorgen.

· **6.4 Verweis auf andere Abschnitte**

Informationen zur sicheren Handhabung siehe Abschnitt 7.

Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.

Informationen zur Entsorgung siehe Abschnitt 13.

ABSCHNITT 7: Handhabung und Lagerung

· **7.1 Schutzmaßnahmen zur sicheren Handhabung**

Für gute Belüftung/Absaugung am Arbeitsplatz sorgen.

Behälter mit Vorsicht öffnen und handhaben.

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- Aerosolbildung vermeiden.
- **Hinweise zum Brand- und Explosionsschutz:** Atemschutzgeräte bereithalten.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** Keine besonderen Anforderungen.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:** Behälter dicht geschlossen halten.
- **Lagerklasse:**
- **Klassifizierung nach Betriebsicherheitsverordnung (BetrSichV):** -
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

- **Zusätzliche Hinweise zur Gestaltung technischer Anlagen:** Keine weiteren Angaben, siehe Abschnitt 7.
- **8.1 Zu überwachende Parameter**

· **Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:**

50-00-0 Formaldehyd

AGW	Langzeitwert: 0,37 mg/m ³ , 0,3 ml/m ³ 2(I);AGS, Sh, Y, X
-----	--

- **Zusätzliche Hinweise:** Als Grundlage dienen die bei der Erstellung gültigen Listen.
- **8.2 Begrenzung und Überwachung der Exposition**
- **Persönliche Schutzausrüstung:**
- **Allgemeine Schutz- und Hygienemaßnahmen:**
 Von Nahrungsmitteln, Getränken und Futtermitteln fernhalten.
 Beschmutzte, getränkte Kleidung sofort ausziehen.
 Vor den Pausen und bei Arbeitsende Hände waschen.
 Getrennte Aufbewahrung der Schutzkleidung.
 Berührung mit den Augen und der Haut vermeiden.
- **Atemschutz:**
 Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition umluftunabhängiges Atemschutzgerät verwenden.
- **Handschutz:**



Schutzhandschuhe

Das Handschuhmaterial muss undurchlässig und beständig gegen das Produkt / den Stoff / die Zubereitung sein. Aufgrund fehlender Tests kann keine Empfehlung zum Handschuhmaterial für das Produkt / die Zubereitung / das Chemikaliengemisch abgegeben werden.

Auswahl des Handschuhmaterials unter Beachtung der Durchbruchzeiten, Permeationsraten und der Degradation.

- **Handschuhmaterial**

Die Auswahl eines geeigneten Handschuhs ist nicht nur vom Material, sondern auch von weiteren Qualitätsmerkmalen abhängig und von Hersteller zu Hersteller unterschiedlich. Da das Produkt eine Zubereitung aus mehreren Stoffen darstellt, ist die Beständigkeit von Handschuhmaterialien nicht vorausberechenbar und muß deshalb vor dem Einsatz überprüft werden.

- **Durchdringungszeit des Handschuhmaterials**

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

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· Augenschutz:


Dichtschließende Schutzbrille

ABSCHNITT 9: Physikalische und chemische Eigenschaften

· 9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften
· Allgemeine Angaben
· Aussehen:
Form: Flüssigkeit

Farbe: Klar

· Geruch: Charakteristisch

· Geruchsschwelle: Nicht bestimmt.

· pH-Wert: Nicht bestimmt.

· Zustandsänderung
Schmelzpunkt/Gefrierpunkt: Nicht bestimmt.

Siedebeginn und Siedebereich: >93 °C

· Flammpunkt: >60 °C

· Entzündbarkeit (fest, gasförmig): Nicht anwendbar.

· Zündtemperatur: 300 °C

· Zersetzungstemperatur: Nicht bestimmt.

· Selbstentzündungstemperatur: Das Produkt ist nicht selbstentzündlich.

· Explosive Eigenschaften: Nicht bestimmt.

· Explosionsgrenzen:
Untere: 7 Vol %

Obere: 73 Vol %

· Dampfdruck bei 20 °C: 23 hPa

· Dichte bei 20 °C: 0,962 g/cm³
· Relative Dichte: Nicht bestimmt.

· Dampfichte: Nicht bestimmt.

· Verdampfungsgeschwindigkeit: Nicht bestimmt.

· Löslichkeit in / Mischbarkeit mit
Wasser: Vollständig mischbar.

· Verteilungskoeffizient: n-Octanol/Wasser: Nicht bestimmt.

· Viskosität:
Dynamisch: Nicht bestimmt.

Kinematisch: Nicht bestimmt.

· Lösemittelgehalt:
Organische Lösemittel: 20,0 %

Wasser: 80,0 %

VOC (EU) 20,00 %

Festkörpergehalt: 0,0 %

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· 9.2 Sonstige Angaben

Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 10: Stabilität und Reaktivität

- **10.1 Reaktivität** Keine weiteren relevanten Informationen verfügbar.
- **10.2 Chemische Stabilität**
- **Thermische Zersetzung / zu vermeidende Bedingungen:**
Keine Zersetzung bei bestimmungsgemäßer Verwendung.
- **10.3 Möglichkeit gefährlicher Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität**
Gesundheitsschädlich bei Verschlucken, Hautkontakt oder Einatmen.

· Einstufungsrelevante LD/LC50-Werte:

50-00-0 Formaldehyd

Oral	LD50	>200 mg/kg (rat)
------	------	------------------

- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut**
Verursacht Hautreizungen.
- **Schwere Augenschädigung/-reizung**
Verursacht schwere Augenreizung.
- **Sensibilisierung der Atemwege/Haut**
Kann allergische Hautreaktionen verursachen.
- **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**
- **Keimzell-Mutagenität**
Kann vermutlich genetische Defekte verursachen.
- **Karzinogenität**
Kann Krebs erzeugen.
- **Reproduktionstoxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Spezifische Zielorgan-Toxizität bei einmaliger Exposition**
Kann die Atemwege reizen.
- **Spezifische Zielorgan-Toxizität bei wiederholter Exposition**
Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Aspirationsgefahr** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

ABSCHNITT 12: Umweltbezogene Angaben

- **12.1 Toxizität**
- **Aquatische Toxizität:** Keine weiteren relevanten Informationen verfügbar.
- **12.2 Persistenz und Abbaubarkeit** Keine weiteren relevanten Informationen verfügbar.
- **12.3 Bioakkumulationspotenzial** Keine weiteren relevanten Informationen verfügbar.
- **12.4 Mobilität im Boden** Keine weiteren relevanten Informationen verfügbar.

(Fortsetzung auf Seite 7)

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gemäß 1907/2006/EG, Artikel 31

Druckdatum: 31.10.2018

überarbeitet am: 31.10.2018

Handelsname: Paraformaldehyde 20% Solution, EM Grade


(Fortsetzung von Seite 6)

- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**
Wassergefährdungsklasse 2 (Selbsteinstufung): deutlich wassergefährdend
Nicht in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.
Trinkwassergefährdung bereits beim Auslaufen geringer Mengen in den Untergrund.
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 13: Hinweise zur Entsorgung

- **13.1 Verfahren der Abfallbehandlung**
- **Empfehlung:** Darf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
- **Ungereinigte Verpackungen:**
- **Empfehlung:** Entsorgung gemäß den behördlichen Vorschriften.
- **Empfohlenes Reinigungsmittel:** Wasser, gegebenenfalls mit Zusatz von Reinigungsmitteln.

ABSCHNITT 14: Angaben zum Transport

- | | |
|---|---|
| 14.1 UN-Nummer | UN1993 |
| ADR, IMDG, IATA | |
| 14.2 Ordnungsgemäße UN-Versandbezeichnung | 1993 ENTZÜNDBARER FLÜSSIGER STOFF, N.A.G. |
| ADR | FLAMMABLE LIQUID, N.O.S. |
| IMDG, IATA | |
| 14.3 Transportgefahrenklassen | |
| ADR | |
|  | |
| Klasse | 3 Entzündbare flüssige Stoffe |
| IMDG, IATA | |
| Class | entfällt |
| 14.4 Verpackungsgruppe | III |
| ADR, IMDG, IATA | |
| 14.5 Umweltgefahren: | Nicht anwendbar. |
| 14.6 Besondere Vorsichtsmaßnahmen für den Verwender | Achtung: Entzündbare flüssige Stoffe |
| Stowage Category | A |
| 14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code | Nicht anwendbar. |

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(Fortsetzung von Seite 7)

· Transport/weitere Angaben:
· ADR

- **Begrenzte Menge (LQ)** 5L
- **Freigestellte Mengen (EQ)** Code: E1
- Höchste Nettomenge je Innenverpackung: 30 ml*
- Höchste Nettomenge je Außenverpackung: 1000 ml*

· IMDG

- **Limited quantities (LQ)** 5L
- **Excepted quantities (EQ)** Code: E1
- Maximum net quantity per inner packaging: 30 ml*
- Maximum net quantity per outer packaging: 1000 ml*

- **UN "Model Regulation":** UN 1993 ENTZÜNDBARER FLÜSSIGER STOFF, N.A.G.,
3, III

ABSCHNITT 15: Rechtsvorschriften

- **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**

- **Richtlinie 2012/18/EU**

- **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Keiner der Inhaltsstoffe ist enthalten.

- **VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII** Beschränkungsbedingungen: 3, 28

- **Nationale Vorschriften:**

- **Hinweise zur Beschäftigungsbeschränkung:**

Arbeitnehmer dürfen den in dieser Zubereitung enthaltenen krebserzeugenden Gefahrstoffen nicht ausgesetzt sein. Im Einzelfall kann die Behörde Ausnahmen zulassen.

- **Technische Anleitung Luft:**

Klasse	Anteil in %
Wasser	80,0
I	20,0

- **Wassergefährdungsklasse: WGK 2 (Selbsteinstufung):** deutlich wassergefährdend.

- **Sonstige Vorschriften, Beschränkungen und Verbotsverordnungen**

Das Produkt unterliegt der Anlage 2 der Chemikalienverbotsverordnung (ChemVerbotsV) - Anforderungen in Bezug auf die Abgabe

- **15.2 Stoffsicherheitsbeurteilung:** Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.

ABSCHNITT 16: Sonstige Angaben

Die Angaben stützen sich auf den heutigen Stand unserer Kenntnisse, sie stellen jedoch keine Zusicherung von Produkteigenschaften dar und begründen kein vertragliches Rechtsverhältnis.

- **Relevante Sätze**

H301 Giftig bei Verschlucken.

H311 Giftig bei Hautkontakt.

H314 Verursacht schwere Verätzungen der Haut und schwere Augenschäden.

H317 Kann allergische Hautreaktionen verursachen.

H331 Giftig bei Einatmen.

H341 Kann vermutlich genetische Defekte verursachen.

(Fortsetzung auf Seite 9)

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(Fortsetzung von Seite 8)

*H350 Kann Krebs erzeugen.***Abkürzungen und Akronyme:***ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**VOC: Volatile Organic Compounds (USA, EU)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Acute Tox. 3: Akute Toxizität – Kategorie 3**Acute Tox. 4: Akute Toxizität – Kategorie 4**Skin Corr. 1B: Hautreizende/-ätzende Wirkung – Kategorie 1B**Skin Irrit. 2: Hautreizende/-ätzende Wirkung – Kategorie 2**Eye Irrit. 2: Schwere Augenschädigung/Augenreizung – Kategorie 2**Skin Sens. 1: Sensibilisierung der Haut – Kategorie 1**Muta. 2: Keimzellmutagenität – Kategorie 2**Carc. 1B: Karzinogenität – Kategorie 1B**STOT SE 3: Spezifische Zielorgan-Toxizität (einmalige Exposition) – Kategorie 3*

DE

Sigurnosno-tehnički list

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ODJELJAK 1: Identifikacija tvari/smjese i podaci o tvrtki/poduzeću

- **1.1 Identifikacijska oznaka proizvoda**
- **Naziv proizvoda:** Paraformaldehide 20% Solution, EM Grade
- **Šifra proizvoda:** 15713, 15713-SP, 15713-S
- **1.2 Relevantne identificirane uporabe tvari ili smjese i uporabe koje se ne preporučuju**
Nema daljnjih bitnih informacija na raspolaganju.
- **Uporaba tvari/pripravaka** kemikalije za laboratorij
- **1.3 Podaci o dobavljaču koji isporučuje sigurnosno-tehnički list**
- **Proizvođač/uvoznik/distributer:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Daljnje informacije se mogu nabaviti:** Product safety department
- **1.4 Broj telefona za izvanredna stanja**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

ODJELJAK 2: Identifikacija opasnosti

- **2.1 Razvrstavanje tvari ili smjese**
- **Razvrstavanje u skladu s Uredbom (EZ) br. 1272/2008**



GHS08 opasnost za zdravlje

Muta. 2 H341 Sumnja na moguća genetska oštećenja.
Carc. 1B H350 Može uzrokovati rak.



GHS07

Acute Tox. 4 H302 Štetno ako se proguta.
Acute Tox. 4 H312 Štetno u dodiru s kožom.
Acute Tox. 4 H332 Štetno ako se udiše.
Skin Irrit. 2 H315 Nadražuje kožu.
Eye Irrit. 2 H319 Uzrokuje jako nadraživanje oka.
Skin Sens. 1 H317 Može izazvati alergijsku reakciju na koži.
STOT SE 3 H335 Može nadražiti dišni sustav.

- **2.2 Elementi označavanja**
- **Označavanje sukladno Uredbi (EG) br. 1272/2008**
Proizvod je razvrstan i označen sukladno Uredbi o razvrstavanju, označavanju i pakiranju.
- **Piktogrami opasnosti**



GHS07



GHS08

(Nastavak na strani 2)

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Naziv proizvoda: Paraformaldehide 20% Solution, EM Grade

(Nastavak sa strane 1)

- **Oznaka opasnosti** Opasnost
- **Oznake koje označavaju opasnost:**
formaldehid
- **Oznake upozorenja**
H302+H312+H332 Štetno ako se proguta, u dodiru s kožom ili ako se udiše.
H315 Nadražuje kožu.
H319 Uzrokuje jako nadraživanje oka.
H317 Može izazvati alergijsku reakciju na koži.
H341 Sumnja na moguća genetska oštećenja.
H350 Može uzrokovati rak.
H335 Može nadražiti dišni sustav.
- **Oznake obavijesti**
P261 Izbjegavati udisanje prašine/dima/plina/maglice/pare/aerosola.
P280 Nositi zaštitne rukavice/zaštitnu odjeću/zaštitu za oči/zaštitu za lice.
P305+P351+P338 U SLUČAJU DODIRA S OČIMA: oprezno ispirati vodom nekoliko minuta. Ukloniti kontaktne leće ukoliko ih nosite i ako se one lako uklanjaju. Nastaviti ispiranje.
P322 Potrebne su posebne mjere (vidi na ovoj naljepnici).
P405 Skladištiti pod ključem.
P501 Odložite sadržaje /spremnike u skladu s lokalnim/regionalnim/nacionalni/međunarodnim odredbama.
- **2.3 Ostale opasnosti**
- **Rezultati PBT- i vPvB procjena**
- **PBT:** Ne primjenjuje se.
- **vPvB:** Ne primjenjuje se.

ODJELJAK 3: Sastav/informacije o sastojcima

- **3.2 Kemijska svojstva: Smjese**
- **Opis:** Smjesa od sljedećih navedenih materijala s neopasnim primjesama.

· **Sastojci koji pridonose opasnosti proizvoda:**

50-00-0	formaldehid	>10-≤25%
	☠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; ☠ Muta. 2, H341; Carc. 1B, H350; ⚠ Skin Corr. 1B, H314; ⚠ Skin Sens. 1, H317	

- **Dodatne informacije:** Tekst navedenih napomena o opasnostima nalazi se u 16. poglavlju.

ODJELJAK 4: Mjere prve pomoći

- **4.1 Opis mjera prve pomoći**
- **Opće upute:**
Simptomi trovanja mogu se pojaviti nakon dužeg vremena, stoga je potreban liječnički nadzor od najmanje 48 sati nakon nezgode.
- **Nakon udisanja:**
Omogućiti dotok većih količina svježeg zraka i za svaki slučaj potražiti liječničku pomoć.
U besvijesnom stanju ležanje i transport u stabilnom bočnom položaju.
- **Nakon dodira s kožom:** Odmah oprati vodom i sapunom te dobro isprati.
- **Nakon dodira s očima:**
Isprati oči tekućom vodom nekoliko minuta. Oči prilikom ispiranja moraju biti otvorene. U slučaju trajnih smetnji savjetovati se s liječnikom.
- **Nakon gutanja:** Odmah potražiti liječnika.
- **4.2 Najvažniji simptomi i učinci, akutni i odgođeni** Nema daljnjih bitnih informacija na raspolaganju.

(Nastavak na strani 3)

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(Nastavak sa strane 2)

- **4.3 Navod o slučaju potrebe za hitnom liječničkom pomoći i posebnom obradom**
Nema daljnjih bitnih informacija na raspolaganju.

ODJELJAK 5: Mjere gašenja požara

- **5.1 Sredstva za gašenje**
- **Prikladna:**
CO₂, prah za gašenje, raspršeni mlaz vode. Veći požar suzbijati raspršenim mlazom vode ili pjenom koja je postojana na alkohol.
- **5.2 Posebne opasnosti koje proizlaze iz tvari ili smjese** Nema daljnjih bitnih informacija na raspolaganju.
- **5.3 Savjeti za gasitelje požara**
- **Posebna oprema za zaštitu vatrogasaca:** Stavite uređaj za zaštitu disanja.

ODJELJAK 6: Mjere kod slučajnog ispuštanja

- **6.1 Osobne mjere opreza, zaštitna oprema i postupci za izvanredna stanja** Nepotrebno
- **6.2 Mjere zaštite okoliša**
Razrijediti s mnogo vode.
Ne smije dospjeti u kanalizaciju/površinske vode/podzemne vode.
- **6.3 Metode i materijal za sprječavanje širenja i čišćenje**
Pokupiti pomoću materijala koji vežu tekućinu na sebe (pijesak, kremenca zemlja, vezivo kiselina, univerzalna veziva, piljevina).
Kontaminirani materijal zbrinuti kao otpad prema točki 13.
Voditi brigu da bude dostatno provjetreno.
- **6.4 Uputa na druge odjeljke**
Informacije o sigurnom rukovanju vidi poglavlje 7.
Informacije o osobnoj zaštitnoj opremi vidi poglavlje 8.
Informacije o zbrinjavanju vidi poglavlje 13.

ODJELJAK 7: Rukovanje i skladištenje

- **7.1 Mjere opreza za sigurno rukovanje**
Voditi brigu o dobroj provjetrenosti/isisavanju na radnom mjestu.
Oprezno otvarati spremnike i rukovati istima.
Izbjegavati nastajanje aerosola.
- **Upute za zaštitu od požara i eksplozije:** Imati u pripravi uređaje za zaštitu disanja.
- **7.2 Uvjeti sigurnog skladištenja, uzimajući u obzir moguće inkompatibilnosti**
- **Skladištenje:**
- **Zahtjevi koje skladišni prostori i spremnici moraju ispunjavati:** Nema posebnih zahtjeva.
- **Upute za zajedničko skladištenje:** Nepotrebno.
- **Dotadne informacije o uvjetima skladištenja:** Spremnici moraju biti nepropusno zatvoreni.
- **7.3 Posebna krajnja uporaba ili uporabe** Nema daljnjih bitnih informacija na raspolaganju.

ODJELJAK 8: Nadzor nad izloženošću/osobna zaštita

- **Dotadne upute za oblikovanje tehničkih sustava:** Nema daljnjih podataka, vidi točka 7.

(Nastavak na strani 4)

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(Nastavak sa strane 3)

· 8.1 Nadzorni parametri

· Nadzor izloženosti na radnom mjestu:

50-00-0 formaldehid

GVI	Kratkotrajna vrijednost: 2,5 mg/m ³ , 2 ppm
	Dugotrajna vrijednost: 2,5 mg/m ³ , 2 ppm

· **Dodatne informacije:** Kao osnova su služili popisi, koji su bili važeći u trenutku izrade.

· 8.2 Nadzor nad izloženosti

· Mjere osobne zaštite:

· Opće zaštitne i higijenske mjere:

- Držati dalje od živežnih namirnica, pića i krme.
- Odmah skinuti zamazanu i tekućinom natopljenu odjeću.
- Prije pauze i kraja radnog vremena oprati ruke.
- Zaštitnu odjeću čuvati odvojeno.
- Izbjegavati dodir s očima i kožom.

· Zaštita organa za disanje:

Prilikom kratkotrajnog ili neznatnog opterećenja koristiti uređaj za disanje s filtrom; u slučaju intenzivnog, odnosno dužeg izlaganja koristiti uređaj za zaštitu disanja koji je neovisan od okolnog zraka.

· Zaštita ruku:



Zaštitne rukavice

Materijal za rukavice mora biti nepropustan i postojan na proizvod / tvar /pripravak.

S obzirom da nema ispitivanja, ne može se dati preporuka za materijal za rukavice za proizvod / pripremu / mješavinu kemikalija.

Kod odabira materijala za rukavice obratiti pozornost na vrijeme perforacije materijala, stupanj permeacije i degradaciju.

· Materijal za rukavice

Odabir prikladnih rukavica ovisi ne samo o materijalu, već i o drugim obilježjima kvalitete i različit je od proizvođača do proizvođača. Kako proizvod predstavlja spoj nekoliko različitih materijala, postojanost materijala za rukavice ne može se izračunati unaprijed i stoga se mora provjeriti prije uporabe.

· Vrijeme prodiranja materijala za rukavice

Točno vrijeme perforacije materijala može se saznati kod proizvođača zaštitnih rukavica i treba ga se pridržavati.

· zaštita očiju:



Zaštitne naočale, koje nepropustno naliježu

ODJELJAK 9: Fizikalna i kemijska svojstva

· 9.1 Informacije o osnovnim fizikalnim i kemijskim svojstvima

· Opće informacije

· Izgled:

Oblik:	Tekućina
Boja:	Bistar
Miris:	Karakterističan
Prag mirisa:	Nije određeno.

(Nastavak na strani 5)

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(Nastavak sa strane 4)

· pH vrijednost:	Nije određeno.
· Promjena stanja Talište/ledište: Početno vrelište i raspon vrenja:	Neodređen. >93 °C
· Plamište:	>60 °C
· Zapaljivost (kruta tvar, plin):	Nije primjenjiv.
· Temperatura paljenja:	300 °C
· Temperatura raspada:	Nije određeno.
· Temperatura samozapaljenja:	Proizvod nije samozapaljiv.
· Eksplozivna svojstva:	Nije određeno.
· Granice eksplozivnosti: Donja: Gornja:	7 Vol % 73 Vol %
· Tlak pare kod 20 °C:	23 hPa
· Gustoća kod 20 °C: · Relativna gustoća · Gustoća pare · Brzina isparavanja	0,962 g/cm ³ Nije određeno. Nije određeno. Nije određeno.
· Topivost u / Miješanje s vodom:	Može se u potpunosti miješati.
· Koeficijent raspodjele: n-oktanol/voda:	Nije određeno.
· Viskoznost: dinamička: kinematička:	Nije određeno. Nije određeno.
· Koncentracija otapala: organska otapala: voda: Sadržaj hlapivog	20,0 % 80,0 % 20,00 %
· Koncentracija čvrstog tijela:	0,0 %
· 9.2 Ostale informacije	Nema daljnjih bitnih informacija na raspolaganju.

ODJELJAK 10: Stabilnost i reaktivnost

- 10.1 Reaktivnost Nema daljnjih bitnih informacija na raspolaganju.
- 10.2 Kemijska stabilnost
- Termičko raspadanje / Uvjeti koje treba izbjegavati: Ne rastvara se kod predviđene uporabe.
- 10.3 Mogućnost opasnih reakcija Nisu poznate opasne reakcije.
- 10.4 Uvjeti koje treba izbjegavati Nema daljnjih bitnih informacija na raspolaganju.
- 10.5 Inkompatibilni materijali Nema daljnjih bitnih informacija na raspolaganju.
- 10.6 Opasni proizvodi raspadanja Nisu poznati nikakvi opasni proizvodi rastvaranja.

HR

(Nastavak na strani 6)

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Naziv proizvoda: Paraformaldehide 20% Solution, EM Grade

(Nastavak sa strane 5)

ODJELJAK 11: Toksikološke informacije

11.1 Informacije o toksikološkim učincima

Akutna toksičnost

Štetno ako se proguta, u dodiru s kožom ili ako se udiše.

LD/LC50-vrijednosti koje su relevantne za stupnjevanje:

50-00-0 formaldehid

Oralno	LD50	>200 mg/kg (rat)
--------	------	------------------

Primarno nadražujuće djelovanje:

Nagrivanje/nadraživanje kože

Nadražuje kožu.

Ozbiljno oštećenje/nadraživanje očiju

Uzrokuje jako nadraživanje oka.

Izazivanje preosjetljivosti dišnih putova ili kože

Može izazvati alergijsku reakciju na koži.

Informacije o sljedećim grupama potencijalnih učinaka:

CMR djelovanje (kancerogeno, mutageno i za reproduktivni sistem toksično djelovanje)

Mutageni učinak na spolne stanice

Sumnja na moguća genetska oštećenja.

Karcinogenost

Može uzrokovati rak.

Reproduktivna toksičnost

Temeljem dostupnih podataka razvidno je da nisu ispunjeni kriteriji za razvrstavanje.

TCO – jednokratno izlaganje

Može nadražiti dišni sustav.

TCO – ponavljano izlaganje

Temeljem dostupnih podataka razvidno je da nisu ispunjeni kriteriji za razvrstavanje.

Opasnost od aspiracije

Temeljem dostupnih podataka razvidno je da nisu ispunjeni kriteriji za razvrstavanje.

ODJELJAK 12: Ekološke informacije

12.1 Toksičnost

Akvatična toksičnost: Nema daljnjih bitnih informacija na raspolaganju.

12.2 Postojanost i razgradivost Nema daljnjih bitnih informacija na raspolaganju.

12.3 Bioakumulacijski potencijal Nema daljnjih bitnih informacija na raspolaganju.

12.4 Pokretljivost u tlu Nema daljnjih bitnih informacija na raspolaganju.

Daljnje ekološke upute:

Opće upute:

Klasa zagađenja vode 2 (Samostupnjevanje): zagađuje vodu

Ne dopustiti da dospije u podzemene vode, vodu ili kanalizaciju.

Zagađenje pitke vode već kod istjecanja najmanjih količina u tlo.

12.5 Rezultati ocjenjivanja svojstava PBT i vPvB

PBT: Nije primjenjiv.

vPvB: Nije primjenjiv.

12.6 Ostali štetni učinci Nema daljnjih bitnih informacija na raspolaganju.

ODJELJAK 13: Zbrinjavanje

13.1 Metode obrade otpada

Preporuka: Ne smije se zbrinjavati zajedno s komunalnim otpadom. Ne smije dospjeti u kanalizaciju.

(Nastavak na strani 7)

Sigurnosno-tehnički list
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(Nastavak sa strane 6)

- **Onečišćena ambalaža:**
- **Preporuka:** Odlaganje shodno propisima nadležnih organa.
- **Preporučljivo sredstvo za čišćenje:** Voda, u datom slučaju uz dodatak sredstava za čišćenje.

ODJELJAK 14: Informacije o prijevozu

· 14.1 UN broj · ADR, IMDG, IATA	UN1993
· 14.2 Pravilno otpremno ime prema UN-u · ADR · IMDG, IATA	1993 ZAPALJIVA TEKUĆINA, N.D.N. FLAMMABLE LIQUID, N.O.S.
· 14.3 Razred(i) opasnosti pri prijevozu · ADR	
	
· klasa	3 zapaljive tekućine
· IMDG, IATA · Class	poništava
· 14.4 Skupina pakiranja · ADR, IMDG, IATA	III
· 14.5 Opasnosti za okoliš	Nije primjenjiv.
· 14.6 Posebne mjere opreza za korisnika · Stowage Category	Upozorenje: zapaljive tekućine A
· 14.7 Prijevoz u razlivenom stanju u skladu s Prilogom II. Konvenciji MARPOL i Kodeksom IBC	Nije primjenjiv.
· Transport/daljnji podaci:	
· ADR · Ograničene količine · Izuzete količine (EQ)	5L Oznaka: E1 Najveća neto količina po unutrašnjem pakovanju: 30 ml Najveća neto količina po vanjskom pakovanju: 1000 ml
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Regulacija modela":	UN 1993 ZAPALJIVA TEKUĆINA, N.D.N., 3, III

HR

(Nastavak na strani 8)

Sigurnosno-tehnički list

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ODJELJAK 15: Informacije o propisima

- **15.1 Propisi u području sigurnosti, zdravlja i okoliša/posebni propisi za tvar ili smjesu**
- **Direktiva 2012/18/EU**
- **Imena opasnih tvari – PRILOG I** Nijedan sastojak nije na popisu
- **UREDBA (EZ) br. 1907/2006 PRILOG XVII.** Uvjeti ograničenja: 3, 28
- **Nacionalni propisi:**
- **Upute za ograničenje zapošljavanja:**
Posloprimci ne smiju biti izloženi opasnim i kancerogenim materijalima, koji su sadržani u ovom pripravku. U pojedinačnom slučaju nadležni organi mogu odobriti iznimke.
- **15.2 Procjena kemijske sigurnosti** Nije izvršena procjena sigurnosti tvari.

ODJELJAK 16: Ostale informacije

Podaci počivaju na današnjoj razini naših znanja, međutim ne predstavljaju nikakvo jamstvo o osobinama materijala i ne zasnivaju nikakav ugovorni pravni odnos.

- **Značenje oznaka upozorenja:**
H301 Otrovno ako se proguta.
H311 Otrovno u dodiru s kožom.
H314 Uzrokuje teške opekline kože i ozljede oka.
H317 Može izazvati alergijsku reakciju na koži.
H331 Otrovno ako se udiše.
H341 Sumnja na moguća genetska oštećenja.
H350 Može uzrokovati rak.
- **Skraćenice i kratice:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 3: Akutna toksičnost – 3. kategorija
Acute Tox. 4: Akutna toksičnost – 4. kategorija
Skin Corr. 1B: Nagrizanje/nadraživanje za kožu – Kategorija 1B
Skin Irrit. 2: Nagrizanje/nadraživanje za kožu – Kategorija 2
Eye Irrit. 2: Teške ozljede oka/nadražujuće za oko – 2. kategorija
Skin Sens. 1: Izazivanje preosjetljivosti kože – 1. kategorija
Muta. 2: Mutageni učinak na zametne stanice – 2. kategorija
Carc. 1B: Karcinogenost – 1B. kategorija
STOT SE 3: Specifična toksičnost za ciljane organe (jednokratno izlaganje) – 3. kategorija

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

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SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** Paraformaldehide 20% Solution, EM Grade

· **Articolo numero:** 15713, 15713-SP, 15713-S

· **1.2 Usi identificati pertinenti della sostanza o della miscela e usi sconsigliati**
Non sono disponibili altre informazioni.

· **Utilizzazione della Sostanza / del Preparato** Prodotti chimici per laboratorio

· **1.3 Informazioni sul fornitore della scheda di dati di sicurezza**

· **Produttore/fornitore:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Societa Italiana Chimici

Via Rio Nell Ellba 140

00138 Rome, Italy

Tel: 39 06 8800211

Fax: 39 30 06 8815313

Web: www.sichim.com

· **Informazioni fornite da:** Product safety department

· **1.4 Numero telefonico di emergenza:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

SEZIONE 2: Identificazione dei pericoli

· **2.1 Classificazione della sostanza o della miscela**

· **Classificazione secondo il regolamento (CE) n. 1272/2008**



GHS08 pericolo per la salute

Muta. 2 H341 Sospettato di provocare alterazioni genetiche.

Carc. 1B H350 Può provocare il cancro.



GHS07

Acute Tox. 4 H302 Nocivo se ingerito.

Acute Tox. 4 H312 Nocivo per contatto con la pelle.

Acute Tox. 4 H332 Nocivo se inalato.

Skin Irrit. 2 H315 Provoca irritazione cutanea.

Eye Irrit. 2 H319 Provoca grave irritazione oculare.

Skin Sens. 1 H317 Può provocare una reazione allergica cutanea.

STOT SE 3 H335 Può irritare le vie respiratorie.

· **2.2 Elementi dell'etichetta**

· **Etichettatura secondo il regolamento (CE) n. 1272/2008**

Il prodotto è classificato ed etichettato conformemente al regolamento CLP.

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· **Pittogrammi di pericolo**



GHS07 GHS08

· **Avvertenza Pericolo**

· **Componenti pericolosi che ne determinano l'etichettatura:**
formaldeide

· **Indicazioni di pericolo**

H302+H312+H332 Nocivo se ingerito, a contatto con la pelle o se inalato.

H315 Provoca irritazione cutanea.

H319 Provoca grave irritazione oculare.

H317 Può provocare una reazione allergica cutanea.

H341 Sospettato di provocare alterazioni genetiche.

H350 Può provocare il cancro.

H335 Può irritare le vie respiratorie.

· **Consigli di prudenza**

P261 Evitare di respirare la polvere/i fumi/i gas/la nebbia/i vapori/gli aerosol.

P280 Indossare guanti/indumenti protettivi/Proteggere gli occhi/il viso.

P305+P351+P338 **IN CASO DI CONTATTO CON GLI OCCHI: sciacquare accuratamente per parecchi minuti. Togliere le eventuali lenti a contatto se è agevole farlo. Continuare a sciacquare.**

P322 Misure specifiche (vedere su questa etichetta).

P405 Conservare sotto chiave.

P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.

· **2.3 Altri pericoli**

· **Risultati della valutazione PBT e vPvB**

· **PBT:** Non applicabile.

· **vPvB:** Non applicabile.

SEZIONE 3: Composizione/informazioni sugli ingredienti

· **3.2 Caratteristiche chimiche: Miscela**

· **Descrizione:** Miscela delle seguenti sostanze con additivi non pericolosi.

· **Sostanze pericolose:**

CAS: 50-00-0	formaldeide	>10-≤25%
EINECS: 200-001-8	Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Muta. 2, H341; Carc. 1B, H350; Skin Corr. 1B, H314; Skin Sens. 1, H317	

· **Ulteriori indicazioni:** Il testo dell'avvertenza dei pericoli citati può essere appreso dal capitolo 16

SEZIONE 4: Misure di primo soccorso

· **4.1 Descrizione delle misure di primo soccorso**

· **Indicazioni generali:**

I sintomi di avvelenamento possono comparire dopo molte ore, per tale motivo è necessaria la sorveglianza di un medico nelle 48 ore successive all'incidente.

· **Inalazione:**

Portare il soggetto in zona molto ben areata e per sicurezza consultare un medico.

Se il soggetto è svenuto provvedere a tenerlo durante il trasporto in posizione stabile su un fianco.

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- **Contatto con la pelle:** Lavare immediatamente con acqua e sapone sciacquando accuratamente.
- **Contatto con gli occhi:**
Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte Se persiste il dolore consultare il medico.
- **Ingestione:** Chiamare subito il medico.
- **4.2 Principali sintomi ed effetti, sia acuti che ritardati** Non sono disponibili altre informazioni.
- **4.3 Indicazione dell'eventuale necessità di consultare immediatamente un medico e di trattamenti speciali**
Non sono disponibili altre informazioni.

SEZIONE 5: Misure antincendio

- **5.1 Mezzi di estinzione**
- **Mezzi di estinzione idonei:**
CO₂, polvere o acqua nebulizzata. Estinguere gli incendi di grosse dimensioni con acqua nebulizzata o con schiuma resistente all'alcool.
- **5.2 Pericoli speciali derivanti dalla sostanza o dalla miscela** Non sono disponibili altre informazioni.
- **5.3 Raccomandazioni per gli addetti all'estinzione degli incendi**
- **Mezzi protettivi specifici:** Indossare il respiratore.

SEZIONE 6: Misure in caso di rilascio accidentale

- **6.1 Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza** Non necessario.
- **6.2 Precauzioni ambientali:**
Diluire abbondantemente con acqua.
Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.
- **6.3 Metodi e materiali per il contenimento e per la bonifica:**
Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).
Smaltimento del materiale contaminato conformemente al punto 13.
Provvedere ad una sufficiente areazione.
- **6.4 Riferimento ad altre sezioni**
Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.
Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.
Per informazioni relative allo smaltimento vedere Capitolo 13.

SEZIONE 7: Manipolazione e immagazzinamento

- **7.1 Precauzioni per la manipolazione sicura**
Accurata ventilazione/aspirazione nei luoghi di lavoro.
Aprire e manipolare i recipienti con cautela.
Evitare la formazione di aerosol.
- **Indicazioni in caso di incendio ed esplosione:** Tener pronto il respiratore.
- **7.2 Condizioni per lo stoccaggio sicuro, comprese eventuali incompatibilità**
- **Stoccaggio:**
- **Requisiti dei magazzini e dei recipienti:** Non sono richiesti requisiti particolari.
- **Indicazioni sullo stoccaggio misto:** Non necessario.
- **Ulteriori indicazioni relative alle condizioni di immagazzinamento:** Mantenere i recipienti ermeticamente chiusi.
- **7.3 Usi finali particolari** Non sono disponibili altre informazioni.

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SEZIONE 8: Controllo dell'esposizione/protezione individuale

· *Ulteriori indicazioni sulla struttura di impianti tecnici: Nessun dato ulteriore, vedere punto 7.*

· **8.1 Parametri di controllo**

· **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:**

50-00-0 formaldeide

TWA	Limite Ceiling: 0,37 mg/m ³ , 0,3 ppm sen, A2
-----	---

· *Ulteriori indicazioni: Le liste valide alla data di compilazione sono state usate come base.*

· **8.2 Controlli dell'esposizione**

· **Mezzi protettivi individuali:**

· **Norme generali protettive e di igiene del lavoro:**

- Tenere lontano da cibo, bevande e foraggi.*
- Togliere immediatamente gli abiti contaminati.*
- Lavarsi le mani prima dell'intervallo o a lavoro terminato.*
- Custodire separatamente l'equipaggiamento protettivo.*
- Evitare il contatto con gli occhi e la pelle.*

· **Maschera protettiva:**

Nelle esposizioni brevi e minime utilizzare la maschera; nelle esposizioni più intense e durature indossare l'autorespiratore.

· **Guanti protettivi:**



Guanti protettivi

Il materiale dei guanti deve essere impermeabile e stabile contro il prodotto/ la sostanza/ la formulazione.

A causa della mancanza di tests non può essere consigliato alcun tipo di materiale per i guanti con cui manipolare il prodotto / la formulazione / la miscela di sostanze chimiche.

Scelta del materiale dei guanti in considerazione dei tempi di passaggio, dei tassi di permeazione e della degradazione.

· **Materiale dei guanti**

La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro. Poiché il prodotto rappresenta una formulazione di più sostanze, la stabilità dei materiali dei guanti non è calcolabile in anticipo e deve essere testata prima dell'impiego

· **Tempo di permeazione del materiale dei guanti**

Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.

· **Occhiali protettivi:**



Occhiali protettivi a tenuta

SEZIONE 9: Proprietà fisiche e chimiche

· **9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali**

· **Indicazioni generali**

· **Aspetto:**

Forma: Liquido

Colore: Chiaro

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· Odore:	Caratteristico
· Soglia olfattiva:	Non definito.
· valori di pH:	Non definito.
· Cambiamento di stato	
Punto di fusione/punto di congelamento:	Non definito.
Punto di ebollizione iniziale e intervallo di ebollizione:	>93 °C
· Punto di infiammabilità:	>60 °C
· Infiammabilità (solidi, gas):	Non applicabile.
· Temperatura di accensione:	300 °C
· Temperatura di decomposizione:	Non definito.
· Temperatura di autoaccensione:	Prodotto non autoinfiammabile.
· Proprietà esplosive:	Non definito.
· Limiti di infiammabilità:	
Inferiore:	7 Vol %
Superiore:	73 Vol %
· Tensione di vapore a 20 °C:	23 hPa
· Densità a 20 °C:	0,962 g/cm ³
· Densità relativa	Non definito.
· Densità di vapore:	Non definito.
· Velocità di evaporazione	Non definito.
· Solubilità in/Miscibilità con acqua:	Completamente miscibile.
· Coefficiente di ripartizione: n-ottanolo/acqua:	Non definito.
· Viscosità:	
Dinamica:	Non definito.
Cinematica:	Non definito.
· Tenore del solvente:	
Solventi organici:	20,0 %
Acqua:	80,0 %
VOC (CE)	20,00 %
Contenuto solido:	0,0 %
· 9.2 Altre informazioni	Non sono disponibili altre informazioni.

SEZIONE 10: Stabilità e reattività

- **10.1 Reattività** Non sono disponibili altre informazioni.
- **10.2 Stabilità chimica**
- **Decomposizione termica/ condizioni da evitare:** Il prodotto non si decompone se utilizzato secondo le norme.
- **10.3 Possibilità di reazioni pericolose** Non sono note reazioni pericolose.
- **10.4 Condizioni da evitare** Non sono disponibili altre informazioni.
- **10.5 Materiali incompatibili:** Non sono disponibili altre informazioni.

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· **10.6 Prodotti di decomposizione pericolosi:** Non sono noti prodotti di decomposizione pericolosi.

SEZIONE 11: Informazioni tossicologiche

· **11.1 Informazioni sugli effetti tossicologici**

· **Tossicità acuta**

Nocivo se ingerito, a contatto con la pelle o se inalato.

· **Valori LD/LC50 rilevanti per la classificazione:**

50-00-0 formaldeide

Orale	LD50	>200 mg/kg (rat)
-------	------	------------------

· **Irritabilità primaria:**

· **Corrosione/irritazione cutanea**

Provoca irritazione cutanea.

· **Lesioni oculari gravi/irritazioni oculari gravi**

Provoca grave irritazione oculare.

· **Sensibilizzazione respiratoria o cutanea**

Può provocare una reazione allergica cutanea.

· **Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)**

· **Mutagenicità delle cellule germinali**

Sospettato di provocare alterazioni genetiche.

· **Cancerogenicità**

Può provocare il cancro.

· **Tossicità per la riproduzione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

· **Tossicità specifica per organi bersaglio (STOT) - esposizione singola**

Può irritare le vie respiratorie.

· **Tossicità specifica per organi bersaglio (STOT) - esposizione ripetuta**

Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

· **Pericolo in caso di aspirazione** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

SEZIONE 12: Informazioni ecologiche

· **12.1 Tossicità**

· **Tossicità acquatica:** Non sono disponibili altre informazioni.

· **12.2 Persistenza e degradabilità** Non sono disponibili altre informazioni.

· **12.3 Potenziale di bioaccumulo** Non sono disponibili altre informazioni.

· **12.4 Mobilità nel suolo** Non sono disponibili altre informazioni.

· **Ulteriori indicazioni in materia ambientale:**

· **Ulteriori indicazioni:**

Pericolosità per le acque classe 2 (D) (Autoclassificazione): pericoloso

Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature.

Pericolo per le acque potabili anche in caso di perdite nel sottosuolo di piccole quantità di prodotto.

· **12.5 Risultati della valutazione PBT e vPvB**

· **PBT:** Non applicabile.

· **vPvB:** Non applicabile.

· **12.6 Altri effetti avversi** Non sono disponibili altre informazioni.

SEZIONE 13: Considerazioni sullo smaltimento

· **13.1 Metodi di trattamento dei rifiuti**

· **Consigli:** Non smaltire il prodotto insieme ai rifiuti domestici Non immettere nelle fognature.

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- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.
- **Detergente consigliato:** Acqua eventualmente con l'aggiunta di detersivi.

SEZIONE 14: Informazioni sul trasporto

- **14.1 Numero ONU**
- **ADR, IMDG, IATA**

UN1993

- **14.2 Nome di spedizione dell'ONU**
- **ADR**
- **IMDG, IATA**

1993 LIQUIDO INFIAMMABILE, N.A.S.
FLAMMABLE LIQUID, N.O.S.

- **14.3 Classi di pericolo connesso al trasporto**
- **ADR**



- **Classe** 3 Liquidi infiammabili

- **IMDG, IATA**
- **Class**

non applicabile

- **14.4 Gruppo di imballaggio**
- **ADR, IMDG, IATA**

III

- **14.5 Pericoli per l'ambiente:**

Non applicabile.

- **14.6 Precauzioni speciali per gli utilizzatori**
- **Stowage Category**

Attenzione: Liquidi infiammabili
A

- **14.7 Trasporto di rifiuti secondo l'allegato II di MARPOL ed il codice IBC**

Non applicabile.

- **Trasporto/ulteriori indicazioni:**

- **ADR**
- **Quantità limitate (LQ)**
- **Quantità esenti (EQ)**

5L
Codice: E1
Quantità massima netta per imballaggio interno: 30 ml
Quantità massima netta per imballaggio esterno: 1000 ml

- **IMDG**
- **Limited quantities (LQ)**
- **Excepted quantities (EQ)**

5L
Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

- **UN "Model Regulation":**

UN 1993 LIQUIDO INFIAMMABILE, N.A.S., 3, III

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SEZIONE 15: Informazioni sulla regolamentazione

· **15.1 Disposizioni legislative e regolamentari su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**

· **Direttiva 2012/18/UE**

· **Sostanze pericolose specificate - ALLEGATO I** Nessuno dei componenti è contenuto.

· **REGOLAMENTO (CE) n. 1907/2006 ALLEGATO XVII** Restrizioni: 3, 28

· **Disposizioni nazionali:**

· **Indicazioni relative alla limitazione delle attività lavorative:**

Il personale non deve essere esposto alle sostanze cancerogene contenute in questo preparato L'autorità può ammettere nei singoli casi delle eccezioni.

· **Istruzione tecnica aria:**

Classe	quota in %
NC	20,0

· **15.2 Valutazione della sicurezza chimica:** Una valutazione della sicurezza chimica non è stata effettuata.

SEZIONE 16: Altre informazioni

I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.

· **Frasei rilevanti**

H301 Tossico se ingerito.

H311 Tossico per contatto con la pelle.

H314 Provoca gravi ustioni cutanee e gravi lesioni oculari.

H317 Può provocare una reazione allergica cutanea.

H331 Tossico se inalato.

H341 Sospettato di provocare alterazioni genetiche.

H350 Può provocare il cancro.

· **Abbreviazioni e acronimi:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 3: Tossicità acuta – Categoria 3

Acute Tox. 4: Tossicità acuta – Categoria 4

Skin Corr. 1B: Corrosione/irritazione della pelle – Categoria 1B

Skin Irrit. 2: Corrosione/irritazione della pelle – Categoria 2

Eye Irrit. 2: Gravi lesioni oculari/irritazione oculare – Categoria 2

Skin Sens. 1: Sensibilizzazione della pelle – Categoria 1

Muta. 2: Mutagenicità sulle cellule germinali – Categoria 2

Carc. 1B: Cancerogenicità – Categoria 1B

STOT SE 3: Tossicità specifica per organi bersaglio (esposizione singola) – Categoria 3

製品安全データシート

JIS Z7253 による分類

印刷日: 2018.10.31

改訂日: 2018.10.31

1 化学物質等及び会社情報

- ・製品識別子
- ・商品名: **Paraformaldehyde 20% Solution, EM Grade**
- ・製品番号: 15713, 15713-SP, 15713-S
- ・該当純物質または混合物の関連特定用途及び使用禁止用途 追加的な関連情報は得られていません。
- ・成分の利用/調合 実験用化学物質
- ・安全データシートの供給元の詳細情報
- ・製造者/納入者:
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- ・その他の情報問い合わせ先: Product safety department
- ・緊急通報用電話番号:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 危険有害性の要約

- ・純物質または混合物の分類



健康に危険

生殖細胞変異原性 区分2

H341 遺伝性疾患のおそれの疑い

発がん性 区分1B

H350 発がんのおそれ



急性毒性(経口) 区分4

H302 飲み込むと有害

急性毒性(経皮) 区分4

H312 皮膚に接触すると有害

急性毒性(吸入) 区分4

H332 吸入すると有害

皮膚腐食性/刺激性 区分2

H315 皮膚刺激

重篤な眼の損傷性/眼刺激性 区分2A

H319 強い眼刺激

感作性(皮膚) 区分1

H317 アレルギー性皮膚反応を起こすおそれ

引火性液体 区分4

H227 可燃性液体

- ・ラベル要素

- ・GHS ラベル要素

本製品はGHS(化学品の分類および表示に関する世界調和システム)により分類及び表示されています。

- ・危険図表



GHS07



GHS08

- ・表示語 危険

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危険と定められた成分をラベル表示:

ホルムアルデヒド

危険文句

可燃性液体

飲み込んだり, 皮膚に接触したり, 吸入すると有害

皮膚刺激

強い眼刺激

アレルギー性皮膚反応を起こすおそれ

遺伝性疾患のおそれの疑い

発がんのおそれ

注意文句

裸火/高温のもののような着火源から遠ざけること。 - 禁煙。

粉じん/煙/ガス/ミスト/蒸気/スプレーの吸入を避けること。

保護手袋/保護衣/保護眼鏡/保護面を着用すること。

眼に入った場合: 水で数分間注意深く洗うこと。次にコンタクトレンズを着用していて容易に外せる場合は外すこと。その後も洗浄を続けること。

施錠して保管すること。

現地/地域/国/国際規定に従い内容物・容器の露出

その他の危険性

・PBT (残留性、生物濃縮性、毒性物質) 及び vPvB (高残留性、高生物濃縮性物質) アセスメント

・PBT (残留性、生物濃縮性、毒性物質): 情報なし

・vPvB (高残留性、高生物濃縮性物質): 情報なし

3 組成・成分情報

化学的特性: 混合物

・説明: 危険のない混ぜ合わせかたをした以下成分からなる混合物

危険な含有成分:

50-00-0	ホルムアルデヒド	>10-≤25%
	⚠ 急性毒性(経口) 区分3, H301; 急性毒性(経皮) 区分3, H311; 急性毒性(吸入) 区分3, H331; ⚠ 生殖細胞変異原性 区分2, H341; 発がん性 区分1B, H350; ⚠ 皮膚腐食性/刺激性 区分1B, H314; ⚠ 感作性(皮膚) 区分1, H317	

4 応急措置

応急手当処置に関する説明

一般情報:

中毒症状は時間がかかり経過した後に現れる場合もあるため、事故後最低 4 8 時間は医師の監視のもとで過ごすこと

吸い込んだ場合:

外気を十分に送り込み、安全のため医師を呼ぶ

意識不明の場合には安定させた状態で横向きに寝かせ、移送する

皮膚が触れた場合: 即刻石鹸と水で洗い、よくすすぐ

眼に入った場合:

瞼を開けたまま、流水で何分間か眼をすすぎ、状態がよくなる場合には医者に相談する

飲み込んだ場合: 即医者を呼ぶ

医師への指示事項:

・最も重要な急性及び慢性の症状及び影響 追加的な関連情報は得られていません。

・何らかの即時医療処置及び特別治療の必要性を示す兆候 追加的な関連情報は得られていません。

JP

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5 火災時の措置

- ・消火剤
- ・適切な消火剤:
CO₂, 消火粉末剤あるいは水放射。火が大きい場合には水放射もしくは耐アルコール性泡を使用
- ・本化学物質または混合物から発生する特別な危険性 追加的な関連情報は得られていません。
- ・消防士向けアドバイス
- ・特別な保護装備: 呼吸保護マスクを着用

6 漏出時の措置

- ・個人的予防措置、保護具及び応急処置法 必要ない
- ・環境関連予防措置:
大量の水で薄める
下水処理施設、地上水あるいは地下水に達しないようにする
- ・封じ込め及び浄化のための方法及び材料:
液体吸収材 (砂、珪藻土、酸結合剤、ユニバーサル結合剤、おがくず) で吸収する
13 項に下がい汚染材は廃棄物として処理する
十分な換気を心がける
- ・他のセクションへの言及
安全な取り扱い方に関しては 7 項を参照
人の保護装備の情報に関しては 8 項を参照
廃棄処分に関しては 13 項参照

7 取扱い・保管上の注意

- ・取り扱い方:
安全操作のための予防措置
作業場では十分な換気、埃を吸い取るよう心がける
容器は十分に注意しながら開封し、取り扱う
エアゾールの発生を防ぐ
- ・火災および爆発防止に関する注意事項: 呼吸保護装置を用意しておく
- ・混融危険性を含めた安全貯蔵条件
- ・保管:
保管スペースおよび容器に関する要求事項: 特別な要求事項なし
同じ場所に保管する際の注意事項: 必要ない
保管条件に関するその他の注意事項: 容器は密閉した状態に保つ
特定の最終用途 追加的な関連情報は得られていません。

8 暴露防止及び保護措置

- ・技術設備の形体に関する追加注意事項: その他の申し立てなし、7 項参照
 - ・管理パラメーター
 - ・作業場において限界値の監視を要する成分:
- | 50-00-0 ホルムアルデヒド | |
|------------------|---|
| OEL | 長期値: 0.12 mg/m ³ , 0.1 ppm
最大許容濃度: 0.24 mg/m ³ , 0.2 ppm |
- ・追加注意事項: 生成時に有効なリストがもとなっている

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- ・ 暴露管理
- ・ 人的保護装備:
- ・ 一般防止措置および衛生措置:
 - 食物、飲み物、飼料からは遠ざける
 - 汚れのしみ込んだ衣類は即刻脱ぐ
 - 休憩の前、作業終了後には手を洗う
 - 防護服は別に保管する
 - 眼に入らないよう、また皮膚に接触しないよう注意する
- ・ 呼吸保護器具:
 - 短時間もしくは負担が小さい場合には呼吸フィルター付装置を、集中的にあるいは長時間触れる場合には、酸素ポンペ付き呼吸保護装備を使用すること
- ・ 手の保護:



保護手袋

手袋の材質は物質/材料/調合剤に対して耐性であり、成分を通すことがあってはならないテストをおこなっていないため、物質/調合剤/化合物を取り扱う際の手袋の材質として勧められるものはない

浸透時間、透過性および劣化の点を留意しながら手袋の材質を選択する

- ・ 手袋材
 - 適当な手袋は材質だけでなく、その他の品質によっても変わり、各メーカーによって異なる。調合する際の物質は複数の成分から生成されるため、手袋材の耐久性は予想できない。このため使用前には必ずチェックしなければならない
- ・ 手袋材の浸透時間 正確な浸透時間については保護手袋メーカーに問い合わせ、それを遵守すること
- ・ 眼の保護:



密閉式保護めがね

9 物理的及び化学的性質

- ・ 基本的な物理及び化学特性に関する情報
- ・ 一般指示事項
- ・ 外観

形:	液体
色:	透明
- ・ におい: 特徴的
- ・ 嗅覚閾値: 決まっていない.
- ・ pH-値: 決まっていない.
- ・ 状態の変化

融点/融解範囲:	決まっていない
沸点/沸点範囲:	>93 °C
- ・ 引火点: >60 °C
- ・ 発火性 (個体、気体): 情報なし
- ・ 発火温度: 300 °C

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・分解温度:	決まっていない。
・自然発火性:	プロダクトは自然発火しない
・爆発の危険:	決まっていない。
・爆発限界:	
下限:	7 Vol %
上限:	73 Vol %
・蒸気圧 約 20 °C:	23 hPa
・密度 約 20 °C:	0.962 g/cm ³
・相対的密度	決まっていない。
・蒸気密度	決まっていない。
・気化速度	決まっていない。
・以下成分における消和性/との混和性	
水:	完全に混合できる
・分配係数 (n-オクタノール/水):	決まっていない。
・粘性:	
力学的:	決まっていない。
運動性:	決まっていない。
・溶剤含有量:	
有機溶剤:	20.0 %
水:	80.0 %
・固形物含有量:	0.0 %
・他の情報	追加的な関連情報は得られていません。

10 安定性及び反応性

- ・反応性 追加的な関連情報は得られていません。
- ・化学的安定性
- ・熱分解/回避すべき条件: 規定どおりの使用では分解しない
- ・危険反応の可能性 危険な反応は起きていない
- ・避けるべき条件 追加的な関連情報は得られていません。
- ・不適合物質: 追加的な関連情報は得られていません。
- ・危険な分解生成物: 危険な分解プロダクトはない

11 有害性情報

- ・毒性学的影響に関する情報
- ・急性毒性:

・分類上の LD/LC50 値:
50-00-0 ホルムアルデヒド
□ LD50 >200 mg/kg (rat)

- ・初期刺激作用:
- ・皮膚において: 皮膚と粘膜を刺激
- ・眼において: 刺激作用
- ・感作作用: 皮膚接触によって感作作用の可能性あり

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- ・ **毒性に関する補足注意事項:**
 調査に関するEUの最新の一般分類ガイドラインの計算によれば、プロダクトでは以下の危険が見込まれる
 毒性がある
 刺激的
 発ガン性
- ・ **次の種類の潜在的な効果に対する情報**
- ・ **CMR-作用 (癌誘発、因子変異、そして進化危険作用)**
 生殖細胞変異原性 区分2, 発がん性 区分1B

12 環境影響情報

- ・ **毒性**
- ・ **水生生物に対する毒性:** 追加的な関連情報は得られていません。
- ・ **持続性及び分解性** 追加的な関連情報は得られていません。
- ・ **環境システムにおける作用:**
- ・ **生体内蓄積能** 追加的な関連情報は得られていません。
- ・ **土壌内移動性** 追加的な関連情報は得られていません。
- ・ **その他のエコロジーに関する注意事項:**
- ・ **一般注意事項:**
 水への危険度分類2(ドイツの規定)(自己査定): 水に対する危険性あり
 地下水、河川あるいは下水設備に流してはならない
 地下に少量流れ込んでも飲料水を汚染する
- ・ **PBT (残留性、生物濃縮性、毒性物質) 及び vPvB (高残留性、高生物濃縮性物質) アセスメント**
- ・ **PBT (残留性、生物濃縮性、毒性物質):** 情報なし
- ・ **vPvB (高残留性、高生物濃縮性物質):** 情報なし
- ・ **他の副作用** 追加的な関連情報は得られていません。

13 廃棄上の注意

- ・ **廃棄物処理方法**
- ・ **勧告:** 家庭ごみとはいっしょに処分できない。下水処理施設に流してはならない
- ・ **洗浄されていないパッケージ:**
- ・ **勧告:** 関係当局の規則に従って処分する
- ・ **推薦する洗剤:** 水、場合に応じて洗剤も使って

14 輸送上の注意

- | | |
|-------------------|-------------------------------|
| ・ UN 番号 | |
| ・ ADR, IMDG, IATA | UN1993 |
| ・ 国連出荷正式名 | |
| ・ ADR | 1993 FLAMMABLE LIQUID, N.O.S. |
| ・ IMDG, IATA | FLAMMABLE LIQUID, N.O.S. |

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・ 輸送の危険性クラス

・ ADR



・ 分類

3 可燃性液体成分

・ IMDG, IATA

・ Class

無効

・ パッケージの分類

・ ADR, IMDG, IATA

III

・ 環境危険:

情報なし

・ ユーザー用特別予防措置

・ Stowage Category

警告: 可燃性液体成分

A

・ マルポール条約 (MARPOL73/78) 付属書II及び
IBCコードに準じたバルク輸送

情報なし

・ 輸送/その他の説明:

・ ADR

・ Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

・ IMDG

・ Limited quantities (LQ)

・ Excepted quantities (EQ)

5L

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

・ UN 規範規制:

UN 1993 FLAMMABLE LIQUID, N.O.S., 3, III

15 適用法令

・ 該当純物質または混合物に対する安全、衛生及び環境規制・法律

・ 化審法

・ 既存化学物質

50-00-0 ホルムアルデヒド

2-482

・ 特定化学物質

内容成分はリストアップされていない

・ 監視化学物質、旧第二種監視化学物質、旧第三種監視化学物質

50-00-0 ホルムアルデヒド

旧第二種監視化学物質

・ 優先評価化学物質

50-00-0 ホルムアルデヒド

・ 白物質

内容成分はリストアップされていない

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・ 既存化学物質安全性点検結果 (分解性・蓄積性)

50-00-0 ホルムアルデヒド

・ 既存化学物質安全性点検結果 (毒性)

内容成分はリストアップされていない

・ PRTR Class 1 designated substances

PRTR 制度 - 第一種指定化学物質

50-00-0 ホルムアルデヒド

411

・ PRTR Class 2 designated substances

PRTR 制度 - 第二種指定化学物質

内容成分はリストアップされていない

・ Poisonous and Deleterious Substances Control Act - Deleterious Substances

毒物及び劇物取締法 - 劇物

50-00-0 ホルムアルデヒド

・ Poisonous and Deleterious Substances Control Act - Poisonous Substances

毒物及び劇物取締法 - 毒物

内容成分はリストアップされていない

・ Poisonous and Deleterious Substances Control Act - Specified Poisonous Substances

毒物及び劇物取締法 - 特定毒物

内容成分はリストアップされていない

・ 労働安全衛生法

・ 危険物

・ 爆発性の物 (施行令別表第 1 第 1 号)

内容成分はリストアップされていない

・ 発火性の物 (施行令別表第 1 第 2 号)

内容成分はリストアップされていない

・ 酸化性の物 (施行令別表第 1 第 3 号)

内容成分はリストアップされていない

・ 引火性の物 (施行令別表第 1 第 4 号)

内容成分はリストアップされていない

・ 可燃性のガス (施行令別表第 1 第 5 号)

内容成分はリストアップされていない

・ 特定化学物質等

・ 第一類物質

内容成分はリストアップされていない

・ 第二類物質

50-00-0 ホルムアルデヒド

・ 第三類物質

内容成分はリストアップされていない

・ 名称等を通知すべき有害物 (別表第 9)

50-00-0 ホルムアルデヒド

548

・ 製造許可物質

内容成分はリストアップされていない

・ 鉛中毒予防規則 (施行令別表第 4)

内容成分はリストアップされていない

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製品安全データシート

JIS Z7253 による分類

印刷日: 2018.10.31

改訂日: 2018.10.31

商品名: Paraformaldehyde 20% Solution, EM Grade

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- ・ **四アルキル鉛中毒予防規則 (施行令別表第 5)**

内容成分はリストアップされていない

- ・ **有機溶剤中毒予防規則第 (施行令別表第 6 の 2)**

- ・ **第一種有機溶剤等**

内容成分はリストアップされていない

- ・ **第二種有機溶剤等**

内容成分はリストアップされていない

- ・ **第三種有機溶剤等**

内容成分はリストアップされていない

- ・ **強い変異原性が認められた化学物質**

内容成分はリストアップされていない

- ・ **GHS ラベル要素**

本製品はGHS(化学品の分類および表示に関する世界調和システム)により分類及び表示されています。

- ・ **危険図表**



GHS07 GHS08

- ・ **表示語** 危険

- ・ **危険と定められた成分をラベル表示:**

ホルムアルデヒド

- ・ **危険文句**

可燃性液体

飲み込んだり, 皮膚に接触したり, 吸入すると有害

皮膚刺激

強い眼刺激

アレルギー性皮膚反応を起こすおそれ

遺伝性疾患のおそれの疑い

発がんのおそれ

- ・ **注意文句**

裸火/高温のもののような着火源から遠ざけること。 - 禁煙。

粉じん/煙/ガス/ミスト/蒸気/スプレーの吸入を避けること。

保護手袋/保護衣/保護眼鏡/保護面を着用すること。

眼に入った場合: 水で数分間注意深く洗うこと。次にコンタクトレンズを着用していて容易に外せる場合は外すこと。その後も洗浄を続けること。

施錠して保管すること。

現地/地域/国/国際規定に従い内容物・容器の露出

- ・ **国内規定:**

- ・ **使用上の制約に関する注意事項:**

被用者はこの調合に含まれる発ガン性危険成分に暴露されてはならない。ただし、場合に依りて関係当局が例外許可をおろすこともある

- ・ **化学物質の安全性評価:** 化学物質安全性評価が遂行されていない

16 その他の情報

この情報は現在の我々の認識に基づいている。ただし、プロダクトの特性を保証するものではなく、また契約において法的根拠にはならない

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縮約と二文字語:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

PRTR/化管法: 化学物質排出把握管理促進法

引火性液体 区分4: Flammable liquids – Category 4

急性毒性(経口) 区分3: Acute toxicity – Category 3

急性毒性(経口) 区分4: Acute toxicity – Category 4

皮膚腐食性/刺激性 区分1B: Skin corrosion/irritation – Category 1B

皮膚腐食性/刺激性 区分2: Skin corrosion/irritation – Category 2

重篤な眼の損傷性/眼刺激性 区分2A: Serious eye damage/eye irritation – Category 2A

感作性(皮膚) 区分1: Skin sensitisation – Category 1

生殖細胞変異原性 区分2: Germ cell mutagenicity – Category 2

発がん性 区分1B: Carcinogenicity – Category 1B

JP

물질안전보건자료 GHS에 따라

기압점: 2018.10.31

개정: 2018.10.31

1 화학제품과 회사에 관한 정보

- **제품 식별자**
- **제품명: Paraformaldehyde 20% Solution, EM Grade**
- **상품번호:** 15713, 15713-SP, 15713-S
- **해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도** 추가적인 정보가 존재하지 않습니다.
- **제품의 권고 용도와 사용상의 제한:** 실험실화학품
- **안전데이터표(Safety Data Sheet)내 공급업체 관련 상세 정보**
- **제조자/수입자/유통업자 정보:**
 Electron Microscopy Sciences
 1560 Industry Road
 USA-Hatfield, PA 19440
 Tel: 215-412-8400 Fax: 215-412-8450
 email: sgkcck@aol.com
 www.emsdiasum.com

 Samchang Commercial Co., Ltd.
 Yeo Eui Do
 PO Box 1110
 Seoul, Korea
 Tel: 82 2 703 3040
 Fax: 82 2 717 3298

 Daedok Science, Co. Ltd.
 34141 E10 Korea Advanced Institute of Science
 Guseong-Dong, Yuseong-gu, Daejeon,
 Korea
 Phone: 82 42 710 2091
 Fax: 82 42 367 0005
 Website: www.labsmro.com
- **추가적인 정보 획득 가능:** Product safety department
- **비상연락 전화번호:**
 ChemTrec 1-800-424-9300 Contract CCN7661
 1-703-527-3887

2 유해성·위험성

- **순물질 또는 혼합물의 분류**



건강에 위험

생식세포 변이원성 - 구분 2
 발암성 - 구분 1B

H341 유전적인 결함을 일으킬 것으로 의심됨
 H350 암을 일으킬 수 있음



급성 독성 - 경구 - 구분 4
 급성 독성 - 경피 - 구분 4
 급성 독성 - 흡입 - 구분 4
 피부 부식성/피부 자극성 - 구분 2
 심한 눈 손상성/눈 자극성 - 구분 2

H302 삼키면 유해함
 H312 피부와 접촉하면 유해함
 H332 흡입하면 유해함
 H315 피부에 자극을 일으킴
 H319 눈에 심한 자극을 일으킴

(2 쪽에 계속)

물질안전보건자료

GHS에 따라

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피부 과민성 - 구분 1 H317 알레르기성 피부 반응을 일으킬 수 있음

· 라벨표기 요소

· GHS 라벨 요소

본 제품은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· 그림문자



GHS07 GHS08

· 신호어 위험

· **상표상에명확히위험성이표시된성분:**

포르말린

· **유해.위험 문구**

삼키거나 피부에 접촉하거나 흡입하면 유해함.

피부에 자극을 일으킴

눈에 심한 자극을 일으킴

알레르기성 피부 반응을 일으킬 수 있음

유전적인 결함을 일으킬 것으로 의심됨

암을 일으킬 수 있음

· **예방조치 문구**

(분진·흙·가스·미스트·증기·스프레이)의 흡입을 피하십시오.

(보호장갑·보호의·보안경·안면보호구)를(을) 착용하십시오.

삼켰을 시: 몸에 이상이 있을 시 독성물질 센터/병원 연락 필요.

눈에 묻으면 몇 분간 물로 조심해서 씻으십시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으십시오.

잠금장치가 있는 저장장소에 저장하십시오.

현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· 기타 유해성

· PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잔류성, 고 생물농축성 물질) 평가 결과

· PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.

· vPvB(고 잔류성, 고 생물농축성 물질): 해당사항 없음.

3 구성성분의 명칭 및 함유량

· **화 학 적 특 성:** 혼합물

· **설 명:** 무해한 첨가물이 함유된 아래에 열거된 물질로 만들어진 혼합물.

· **위험 요소:**

50-00-0	포르말린	>10-≤25%
	⚠ 급성 독성 - 경구 - 구분 3, H301; 급성 독성 - 경피 - 구분 3, H311; 급성 독성 - 흡입 - 구분 3, H331; ⚠ 생식세포 변이원성 - 구분 2, H341; 발암성 - 구분 1B, H350; ⚠ 피부 부식성/피부 자극성 - 구분 1, H314; ⚠ 피부 과민성 - 구분 1, H317	

4 응급조치 요령

· **응급조치요령 내용**

· **일 반 적 정 보:**

중독 증상은 몇 시간이 지난 뒤에 발생할 수 있다. 따라서 사고가 발생한 후에 적어도 48 시간동안은 의료진의 관찰을 받아야 한다.

(3 쪽에계속)

물질안전보건자료

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- **흡입했을 때:**
 신선한 공기를 쐬고 나서 반드시 의 료진의 도움을 구한다.
 환자가 의식을 잃었을 경우에는 안전한 자세에서 환자를 운반한다.
- **피부에 접촉했을 때:** 즉시 물과 비누로 씻고 잘 행군다.
- **눈에 들어갔을 때:** 흐르는 물에 눈을 몇분동안 씻어내고 나서, 증상이 지속될 경우에는 의사와 상담한 다
- **먹었을 때:** 즉 시 의사의 도움을 구한다.
- **기타 의사의 주의사항:**
- **가장 중요한 급·만성 증상 및 영향** 추가적인 정보가 존재하지 않습니다.
- **즉각적인 의료처치 및 특별치료가 필요함을 시사하는 징후** 추가적인 정보가 존재하지 않습니다.

5 폭발·화재시 대처방법

- **소화제**
- **적절한 소화제:**
 이산화탄소, 진화용 석회 가루 또는 물 방사를 사용하고, 더 큰 화재는 물을 분사 하거나 알코올 이 함유된 거품으로 끈다.
- **본 화학물질이나 혼합물에서 발생하는 특별 유해성** 추가적인 정보가 존재하지 않습니다.
- **소방관에 대한 권고사항**
- **화재 진압 시 착용할 보호구 및 예방조치:** 호흡보호장비설치.

6 누출 사고 시 대처방법

- **개인적 예방조치, 보호장비 및 응급처치 절차** 필요없음.
- **환경 관련 예방조치:**
 많은 물로 희석 시킨다.
 하수도망/해수면위의물/지하수로도달하지않게한다.
- **밀폐 및 정화 방법과 소재:**
 액체가 혼합된 물질(모래, 규조토, 산성결합물, 일반결합물, 톱밥)에 흡입되도록 한다.
 항목 13에 따라 오염된 물질을 쓰레기로 처분한다.
 충분한 환기가 되도록 한다.
- **타 섹션 참조**
 안전 관리에 대한 정보는 제7 장 을 참고하시오.
 개인 보호 장비에 대한 정보는 제8 장 을 참고하시오.
 쓰레기 처리에 대한 정보는 제13 장 을 참고하시오.

7 취급 및 저장방법

- **취급:**
- **안전 취급을 위한 예방조치**
 작업장에서는 통풍이 잘 되고/습기 제거가 잘 되게 주의한다.
 조심스럽게 용기를 개봉하거나 취급한다.
 연무질이 형성되는 것을 피한다.
- **화재 및 폭발 사고 예방대책에 관한 정보:** 호흡보호장비를 항상 비치한다.
- **혼합위험성 등 안전 저장 조건**
- **보관:**
- **안전한 저장 방법:** 특 별 한 요구사항이 없음.
- **하나의 공동 보관 시설에 대한 보관 관련 정보:** 필 요 없음
- **보 관 조 건 에 관 한 추가적인 정보:** 용기를 새지 않게 밀폐한 채 보관한다.

(4 쪽에계속)

물질안전보건자료 GHS에 따라

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· **구체적 최종 사용자** 추가적인 정보가 존재하지 않습니다.

8 노출방지 및 개인보호구

· **첨단시설 디자인에 대한 추가정보:** 더 이상 의 자료는 없음. 항 목 7 을 참고하시 오.

· **통제 변수**

· **화학물질의 노출기준, 생물학적 노출기준 등:**

50-00-0 포르말린

TLV (KR)	장기간의값: 0.3 ppm 발암성1A, 생식세포 변이원성2
PEL (US)	단기간의값: 2 ppm 장기간의값: 0.75 ppm see 29 CFR 1910.1048(c)
REL (US)	장기간의값: 0.016 ppm 최고노출기준: 0.1* ppm *15-min; See Pocket Guide App. A
TLV (US)	단기간의값: 0.37 mg/m ³ , 0.3 ppm 장기간의값: 0.12 mg/m ³ , 0.1 ppm DSEN; RSEN

· **추 가 정 보:** 제 조 할 당 시 에 유 효 한 목 록 을 기 초 로 사 용 했 다.

· **노출 통제**

· **개인 보호구**

· **일반적보호조치및위생조치:**

- 식료 품, 음 료 수 와 사 료 로 부 터 멀 리 떨 어 뜨 려 놓 는 다.
- 더 러 워 지 거 나 음 료 수 가 물 은 옷 은 즉 시 탈 의 한 다.
- 휴 식 전 이 나 작 업 이 끝 날 때 마 다 손 을 씻 는 다.
- 방 호 복 은 따 로 보 관 한 다.
- 눈 과 피 부 와 의 접 촉 은 피 한 다.

· **호흡기 보호:**

단 시 간 또 는 경 미 한 오 염 의 경 우 에 는 호 흡 여 과 기 를 사 용 한 다. 심 각 한 또 는 장 기 간 노 출 시 에 는 호 흡 보 호 장 비 를 사 용 한 다.

· **손 보호:**



보 호 용 장 갑

장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.
테스트를 하지 않았기 때문에 제품 / 조제 / 화학 혼합 물에 적합한 장갑재질에 대한 추천이 없다.
투과 시간, 침투율 과 저하를 고 려해 서 장 갑 재 료 를 선택 한다.

· **장갑의재료**

적합한장갑의선정은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업종에따라서도다르게선정되어야한다. 제품은다양한재료로부터의조제로이루어지는것이기때문에, 장갑재질의안정성은사전에예측되어질수있는것이아니고, 반드시사용전에 (그안전성이) 체크되어져야한다.

· **장 갑 재 료 의 투 과 시 간** 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.

(5 쪽에계속)

물질안전보건자료

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기압점: 2018.10.31

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· 눈 보호:

(4 쪽부터계속)



· 팍조이는보안경

9 물리화학적 특성

· 기본 물리 및 화학적 특성에 대한 정보	
· 일반정보	
· 외형	
· 물리적 상태:	액체
· 색:	밝은
· 냄새:	특색있는
· 후각역치	알맞지않다.
· pH:	알맞지않다.
· 상태변화	
· 녹는점/어는점:	맞지않는
· 초기 끓는점과 끓는점 범위:	>93 °C
· 인화점:	>60 °C
· 인화성(고체, 기체):	해당사항 없음.
· 점화온도:	300 °C
· 분해 온도:	알맞지않다.
· 자기점화:	이제품은자연발화성이없다.
· 폭발위험:	알맞지않다.
· 인화 또는 폭발 범위의 상한/하한	
· 아래로:	7 Vol %
· 위로:	73 Vol %
· 증기압 의경우 20 °C:	23 hPa
· 밀도 의경우 20 °C:	0.962 g/cm ³
· 비중:	알맞지않다.
· 증기밀도:	알맞지않다.
· 증발 속도:	알맞지않다.
· 용해도:	
· 물:	완전히혼합할수있는
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도:	
· 역학성:	알맞지않다.
· 동점성:	알맞지않다.
· 용매내용물	
· 유기용매:	20.0 %
· 물:	80.0 %
· VOC (EU)	20.00 %
· 고체의 함량:	0.0 %

(6 쪽에계속)

물질안전보건자료

GHS에 따라

기압점: 2018.10.31

개정: 2018.10.31

제품명: Paraformaldehyde 20% Solution, EM Grade


· 기타 부작용 추가적인 정보가 존재하지 않습니다.

(6 쪽부터계속)

13 폐기시 주의사항

- 폐기물 처리 방법
- 권고: 생활쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.
- 비위생적 포장:
- 권고: 당국의지침에입각한쓰레기처리.
- 추천 세정제: 경우에따라서세제가첨가된물

14 운송에 필요한 정보

· 유엔 번호	UN1993
· ADR, IMDG, IATA	
· UN 적정 선적명	
· ADR	1993 FLAMMABLE LIQUID, N.O.S.
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S.
· 교통 위험 클래스	
· ADR	
	
· 등급	3 발화성용액
· IMDG, IATA	
· Class	누락되다
· 용기등급	
· ADR, IMDG, IATA	III
· 환경적 유해물질:	해당사항 없음.
· 이용자 특별 예방조치	경고: 발화성용액
· Stowage Category	A
· MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 벌크(bulk) 운송	해당사항 없음.
· 운 송/추가 정보:	
· ADR	
· 한정 수량 (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG	
· Limited quantities (LQ)	5L

(8 쪽에계속)

물질안전보건자료

GHS에 따라

기압점: 2018.10.31

개정: 2018.10.31

제품명: Paraformaldehyde 20% Solution, EM Grade

(7 쪽부터계속)

<ul style="list-style-type: none"> · Excepted quantities (EQ) 	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> · UN "모범 규제": 	UN 1993 FLAMMABLE LIQUID, N.O.S., 3, III

15 법적 규제현황

· 산업안전보건법에 의한 규제:

· 제조 등 금지물질:

어떠한내용물도목록화되어있지않다

· 허가대상물질:

어떠한내용물도목록화되어있지않다

· 관리대상유해물질:

50-00-0 포르말린

· 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률

· Korean Existing Chemical Inventory

50-00-0	포르말린	KE-17074
7732-18-5	Deionized Water, Reagent Grade A.C.S.	KE-35400

· 화학물질관리법

· 사고대비물질

50-00-0 포르말린

· 금지물질

어떠한내용물도목록화되어있지않다

· 제한물질

50-00-0 포르말린

· 유독물질

50-00-0 포르말린

· 허가물질

50-00-0 포르말린

· GHS 라벨 요소

본 제품은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· 그림문자



GHS07 GHS08

· 신호어 위험

· 상표상에명확히위험성이표시된성분:

포르말린

· 유해.위험 문구

삼키거나 피부에 접촉하거나 흡입하면 유해함.
 피부에 자극을 일으킴
 눈에 심한 자극을 일으킴
 알레르기성 피부 반응을 일으킬 수 있음

(9 쪽에계속)

물질안전보건자료

GHS에 따라

기압점: 2018.10.31

개정: 2018.10.31

제품명: Paraformaldehyde 20% Solution, EM Grade

(8 쪽부터계속)

유전적인 결함을 일으킬 것으로 의심됨
암을 일으킬 수 있음

· 예방조치 문구

(분진·흙·가스·미스트·증기·스프레이)의 흡입을 피하십시오.
(보호장갑·보호의·보안경·안면보호구)를(을) 착용하십시오.
삼켰을 시: 몸에 이상이 있을 시 독성물질 센터/병원 연락 필요.
눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으시오.
잠금장치가 있는 저장장소에 저장하십시오.
현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· 국내규정:

· 사용제한에 대한 정보:

노동자들은이러한예방준비하에암을유발시키는성분을함유한위험물을버리지말아야한다. 개별적인경우에관청은예외를허가할수있다.

· 화학물질 안전성 평가: 화학물질 안전성 평가가 수행되지 않음

16 그 밖의 참고사항

이보고는우리지식에대한오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은기술향하지않았으며계약적인법률관계에기반을두고있지도않다

· 최초 작성일자: 2018.10.31

· 개정 횟수 및 최종 개정일자: 1 / 2018.10.31

· 약어와 두문자어:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

Helaian Data Keselamatan menurut P.U.(A) 310/2013

Tarikh cetak 31.10.2018

Disemak semula pada 31.10.2018

1 Pengenalan bahan kimia berbahaya dan pembekal

- **Pengenal pasti produk**
- **Nama dagang:** *Paraformaldehyde 20% Solution, EM Grade*
- **Nombor artikel:** 15713, 15713-SP, 15713-S
- **Kegunaan yang disarankan bagi bahan dan sekatan penggunaan** Tiadak maklumat lanjut yang diperoleh.
- **Penggunaan bahan/sediaan** Bahan kimia makmal
- **Perincian pembekal risalah data keselamatan**
- **Pengilang/Pembekal:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Maklumat lanjut dapat diperoleh daripada:** Product safety department
- **Nombor telefon kecemasan:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Pengenalan bahaya

- **Pengelasan bahan atau campuran**



Bahaya kesihatan

Muta. 2 H341 Disyaki menyebabkan kecacatan genetik.
Kars. 1B H350 Boleh menyebabkan kanser.



Toks. Akut 4 H302 Memudaratkan jika tertelan.
Toks. Akut 4 H312 Memudaratkan jika terkena kulit.
Toks. Akut 4 H332 Memudaratkan jika tersedut.
Kreng. Kulit 2 H315 Menyebabkan kerengsaan kulit.
Pem. Kulit 1 H317 Boleh menyebabkan tindak balas alahan kulit.

- **Melabelkan unsur**
- **Unsur label GHS** Produk ini dikelaskan dan dilabelkan menurut Sistem Terharmoni Global (GHS).
- **Piktogram hazard**



GHS07



GHS08

- **Perkataan isyarat Bahaya**
- **Komponen pelabelan yang menentukan bahaya:**
Formaldehid
- **Pernyataan hazard**
Memudaratkan jika tertelan, terkena kulit atau tersedut.

(Bersambung ke halaman 2)

Helaiian Data Keselamatan menurut P.U.(A) 310/2013

Tarikh cetak 31.10.2018

Disemak semula pada 31.10.2018








Nama dagang: Paraformaldehyde 20% Solution, EM Grade

(Sambungan halaman 1)

- Menyebabkan kerengsaan kulit.
- Boleh menyebabkan tindak balas alahan kulit.
- Disyaki menyebabkan kecacatan genetik.
- Boleh menyebabkan kanser.
- **Pernyataan langkah perlindungan**
- Elakkan daripada tersedut habuk/wasap/gas/kabus/wap/semburan.
- Pakai sarung tangan / pakaian pelindung.
- Gunakan kelengkapan pelindung diri seperti yang diperlukan.
- Langkah khas (lihat label ini).
- Simpan di tempat berkunci.
- Lupuskan kandungan/bekas menurut peraturan tempatan/wilayah/kebangsaan/antarabangsa.
- **Bahaya lain**
- **Keputusan penilaian PBT dan vPvB**
- **PBT:** Tidak berkenaan
- **vPvB:** Tidak berkenaan

3 Komposisi dan maklumat mengenai ramuan bahan kimia berbahaya

- **Ciri kimia:** Campuran
- **Keterangan:** Campuran bahan disenaraikan di bawah bersama dengan bahan tambah tidak berbahaya.
- **Komponen berbahaya :**

50-00-0	Formaldehid	>10- ≤25%
	 Toks. Akut 3, H301;  Toks. Akut 3, H311;  Toks. Akut 3, H331;  Muta. 2, H341;  Kars. 1B, H350;  Kks. Kulit 1B, H314;  Pem. Kulit 1, H317	

4 Langkah-langkah pertolongan cemas

- **Keterangan langkah pertolongan cemas**
- **Maklumat am:**
- Gejala keracunan boleh berlaku selepas beberapa jam, maka rawatan perubatan hendaklah diberikan sekurang-kurangnya 48 jam selepas kemalangan.
- **Jika tersedut:**
- Berikan udara bersih dan pastikan rawatan doktor diperoleh.
- Jika mangsa tidak sedarkan diri, letakkan pesakit dengan stabil dalam kedudukan mengiring untuk diangkat.
- **Jika terkena kulit:** Segera basuh dengan air dan sabun serta bilas bersih-bersih.
- **Jika terkena mata:**
- Bilas mata sambil membukanya di bawah air yang mengalir selama beberapa minit. Jika gejala berterusan, hubungi doktor.
- **Jika tertelan:** Segera hubungi doctor.
- **Maklumat untuk doktor:**
- **Gejala dan kesan paling penting, akut dan lewat** Tiadak maklumat lanjut yang diperoleh.
- **Arahan bagi apa-apa rawatan perubatan dan rawatan khas yang diperlukan**
- Tiadak maklumat lanjut yang diperoleh.

5 Langkah-langkah pepadaman kebakaran

- **Bahan pepadam api**
- **Agan pepadam yang sesuai:**
- CO₂, serbuk atau semburan air. Padam kebakaran besar dengan semburan air atau busa rintangan alkohol.
- **Bahaya khusus yang timbul daripada bahan atau campuran** Tiadak maklumat lanjut yang diperoleh.

(Bersambung ke halaman 3)

Helaiian Data Keselamatan menurut P.U.(A) 310/2013

Tarikh cetak 31.10.2018

Disemak semula pada 31.10.2018

Nama dagang: Paraformaldehide 20% Solution, EM Grade

(Sambungan halaman 2)

- **Panduan kepada pemadam kebakaran**
- **Kelengkapan perlindungan:** Peralatan perlindungan pernafasan mulut.

6 Langkah-langkah pelepasan tidak sengaja

- **Langkah perlindungan diri, kelengkapan pelindung dan prosedur kecemasan** Tidak diperlukan.
- **Langkah perlindungan alam sekitar:**
Cairkan dengan air yang banyak.
Jangan biarkannya memasuki pembentung/air permukaan atau tanah.
- **Kaedah dan bahan untuk pembendungan dan pembersihan:**
Serap dengan bahan cecair pengikat (pasir, diatomit, pengikat asid, pengikat semesta, habuk papan)
Lupuskan bahan tercemar sebagai sisa mengikut perkara 13.
Pastikan pengalihan udara mencukupi.
- **Rujukan ke bahagian lain**
Lihat Bahagian 7 untuk maklumat pengendalian yang selamat.
Lihat Bahagian 8 untuk maklumat kelengkapan perlindungan diri.
Lihat Bahagian 13 untuk maklumat pelupusan.

7 Pengendalian dan penyimpanan

- **Pengendalian:**
- **Langkah perlindungan untuk pengendalian selamat**
Pastikan pengalihan udara/ekzos yang mencukupi di tempat kerja.
Buka dan kendalikan bekas dengan cermat.
Elakkan pembentukan aerosol.
- **Maklumat kebakaran dan perlindungan daripada letupan:** Pastikan alat perlindungan pernafasan sentiasa ada.
- **Keadaan untuk penyimpanan selamat, termasuk apa-apa ketakserasian**
- **Penyimpanan:**
- **Keperluan yang mesti dipenuhi oleh bilik stor dan ruang simpanan.** Tiada keperluan khusus.
- **Maklumat penyimpanan di dalam satu tempat penyimpanan yang biasa:** Tidak diperlukan.
- **Maklumat lanjut tentang syarat penyimpanan:** Pastikan bekas sentiasa bertutup rapat.
- **Kegunaan akhir yang khusus** Tiada maklumat lanjut yang diperolehi.

8 Kawalan pendedahan dan perlindungan diri

- **Maklumat tambahan tentang reka bentuk kemudahan teknikal:** Tiada maklumat lanjut, lihat perkara 7.
- **Parameter kawalan**

- **Ramuan dengan nilai had yang memerlukan pemantauan di tempat kerja:**

50-00-0 Formaldehid

PEL had siling: 0.37 mg/m ³ , 0.3 ppm
--

- **Maklumat tambahan:** Senarai yang sah semasa pembuatan digunakan sebagai asas.

- **Kawalan pendedahan**
- **Kelengkapan perlindungan diri:**
- **Langkah perlindungan dan kebersihan am:**
Jauhkan daripada makanan, minuman dan makanan haiwan.
Segera tanggalkan semua pakaian yang tercemar dan kotor.
Basuh tangan sebelum berhenti rehat dan apabila kerja selesai.
Simpan pakaian perlindungan secara berasingan.
Elakkan daripada terkena mata dan kulit.

(Bersambung ke halaman 4)

Helaiian Data Keselamatan menurut P.U.(A) 310/2013

Tarikh cetak 31.10.2018

Disemak semula pada 31.10.2018

Nama dagang: Paraformaldehyde 20% Solution, EM Grade

(Sambungan halaman 3)

· **Perlindungan pernafasan:**

Jika berlaku pendedahan sekejap atau sedikit pencemaran, gunakan alat penapis pernafasan. Jika berlaku pendedahan yang intensif atau berpanjangan, gunakan alat pernafasan perlindungan serba lengkap.

· **Perlindungan tangan:**



Sarung tangan pelindung.

Bahan sarung tangan hendaklah telus dan kalis terhadap produk/bahan/sediaan.

Oleh sebab tiada ujian yang dijalankan, maka tiada syor bagi bahan sarung tangan yang boleh diberikan untuk produk/sediaan/campuran kimia.

Pemilihan bahan sarung tangan berdasarkan waktu penembusan, kadar pembauran dan degradasi.

· **Bahan sarung tangan**

Pemilihan sarung tangan yang sesuai bukan hanya bergantung pada bahannya, tetapi juga tanda kualiti lainnya serta perbezaannya daripada satu pengeluar dengan pengeluar yang lain. Memandangkan produk merupakan suatu sediaan daripada beberapa bahan, ketahanan bahan sarung tangan tidak boleh dipastikan terlebih dahulu, oleh itu sarung tangan hendaklah diperiksa sebelum digunakan.

· **Jangka masa penyerapan bahan sarung tangan**

Waktu kemunculan yang tepat hendaklah diperoleh pengeluar sarung tangan pelindung dan hendaklah dipatuhi.

· **Perlindungan mata:**



Gogal bertutup rapat

9 Sifat fizikal dan kimia

· **Maklumat tentang ciri fizik dan kimia**

· **Maklumat Am**

· **Rupa:**

Bentuk: Cecair

Warna: Jernih

· **Bau:** Ciri

· **Ambang bau:** Tidak ditentukan.

· **Nilai pH:** Tidak ditentukan.

· **Perubahan pada keadaan**

Takat lebur/takat beku: Tidak ditentukan.

Takat didih awal dan julat didih: >93 °C

· **Takat kilat:** >60 °C

· **Kemudahbakaran (pepejal, gas):** Tidak berkenaan

· **Suhu pencucuhan:** 300 °C

· **Suhu penguraian:** Tidak ditentukan.

· **Suhu pengautocucuhan:** Produk tidak tercucuh sendiri

· **Bahaya letupan:** Tidak ditentukan.

· **Had letupan :**

Bawah: 7 Vol %

(Bersambung ke halaman 5)

Helaiian Data Keselamatan menurut P.U.(A) 310/2013

Tarikh cetak 31.10.2018

Disemak semula pada 31.10.2018

Nama dagang: Paraformaldehde 20% Solution, EM Grade

(Sambungan halaman 4)

Atas:	73 Vol %
· Tekanan wap pada 20 °C:	23 hPa
· Ketumpatan pada 20 °C:	0.962 g/cm ³
· Ketumpatan bandingan	Tidak ditentukan.
· Ketumpatan wap	Tidak ditentukan.
· Kadar penyejatan	Tidak ditentukan.
· Keterlarutan dalam / Keterlarutcampuran dengan Air:	Terlarut campur sepenuhnya.
· Pekali sekatan: n-oktanol/air	Tidak ditentukan.
· Kelikatan:	
Dinamik:	Tidak ditentukan.
Kinematik:	Tidak ditentukan.
· Kandungan pelarut:	
Pelarut organik:	20.0 %
Air:	80.0 %
· Kandungan pepejal:	0.0 %
· Maklumat lain	Tiadak maklumat lanjut yang diperoleh.

10 Kestabilan dan kereaktifan

- **Kereaktifan** Tiadak maklumat lanjut yang diperoleh.
- **Kestabilan kimia**
- **Penguraian termal/keadaan yang perlu dielakkan:** Tiada penguraian jika digunakan mengikut spesifikasi.
- **Kemungkinan tindak balas berbahaya** Tiada tindak balas berbahaya yang diketahui.
- **Keadaan yang perlu dielakkan** Tiadak maklumat lanjut yang diperoleh.
- **Bahan tidak serasi:** Tiadak maklumat lanjut yang diperoleh.
- **Produk penguraian yang berbahaya:** Tiada produk penguraian berbahaya yang diketahui.

11 Maklumat toksikologi

- **Maklumat tentang kesan toksikologi**
- **Ketoksikan akut:**

· **Nilai LD/LC50 yang berkaitan untuk pengelasan:**

50-00-0 Formaldehid

Oral	LD50	>200 mg/kg (rat)
------	------	------------------

- **Kesan kerengsaan primer:**
- **Kakisan atau kerengsaan kulit** Merengsa kepada kulit dan mukus membran.
- **Kerosakan atau kerengsaan mata yang serius** Kesan merengsa.
- **Pemekaan pernafasan / kulit** Pemekaan mungkin berlaku jika terkena kulit.
- **Maklumat tambahan toksikologi:**
 Produk menunjukkan bahaya berikut mengikut kaedah pengiraan Garis Panduan Pengelasan Am EU bagi Sediaan seperti yang dikeluarkan dalam versi terbaru:
 Memudaratkan
 Perengsa
 Karsinogen.

(Bersambung ke halaman 6)

MY

Helaian Data Keselamatan menurut P.U.(A) 310/2013

Tarikh cetak 31.10.2018

Disemak semula pada 31.10.2018

Nama dagang: Paraformaldehde 20% Solution, EM Grade

(Sambungan halaman 5)

- **Maklumat bagi kumpulan berikut tentang kesan yang mungkin timbul.**
- **Kesan CMR (karsinogen, mutagen dan gangguan kesuburan)**
Muta. 2, Kars. 1B

12 Maklumat ekologi

- **Ketoksikan**
- **Ketoksikan akuatik:** Tiadak maklumat lanjut yang diperoleh.
- **Keterusan dan keterdegradasikan** Tiadak maklumat lanjut yang diperoleh.
- **Kelakuan dalam sistem alam sekitar:**
- **Potensi bioakumulatif** Tiadak maklumat lanjut yang diperoleh.
- **Mobiliiti di dalam tanah** Tiadak maklumat lanjut yang diperoleh.
- **Maklumat tambahan ekologi:**
- **Nota am:**
Bahaya air kelas 2 (Peraturan Jerman) (Penilaian sendiri): berbahaya kepada air
Jangan biarkan produk memasuki air tanah, saluran air atau sistem pembetulan.
Bahaya kepada air minuman walaupun amat sedikit produk memasuki tanah.
- **Keputusan penilaian PBT dan vPvB**
- **PBT:** Tidak berkenaan
- **vPvB:** Tidak berkenaan
- **Kesan buruk yang lain** Tiadak maklumat lanjut yang diperoleh.

13 Maklumat pelupusan

- **Kaedah rawatan sisa**
- **Syor:**
Tidak boleh dilupuskan bersama dengan sampah isi rumah. Jangan biarkan produk memasuki sistem pembetulan.
- **Pembungkusan yang tidak bersih:**
- **Syor:** Pelupusan mestilah dijalankan menurut peraturan rasmi
- **Agan pencuci yang disyorkan:** Air, jika perlu, digunakan bersama dengan agan pencuci.

14 Maklumat pengangkutan

- | | |
|---|---|
| <ul style="list-style-type: none"> · Nombor UN · ADR, IMDG, IATA | <p>UN1993</p> |
| <ul style="list-style-type: none"> · Nama penghantaran UN yang betul · ADR · IMDG, IATA | <p>1993 FLAMMABLE LIQUID, N.O.S.
FLAMMABLE LIQUID, N.O.S.</p> |
| <ul style="list-style-type: none"> · pengangkutan kelas bahaya · ADR | <p>3</p> |
| <ul style="list-style-type: none"> · Kelas | <p>3 Cecair mudah terbakar.</p> |



(Bersambung ke halaman 7)

Helaiian Data Keselamatan menurut P.U.(A) 310/2013

Tarikh cetak 31.10.2018

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Nama dagang: Paraformaldehde 20% Solution, EM Grade

(Sambungan halaman 6)

· IMDG, IATA · Class	Tidak sah
· Kumpulan pembungkusan · ADR, IMDG, IATA	III
· Hazard persekitaran:	Tidak berkenaan
· Langkah perlindungan khas untuk pengguna · Stowage Category	Amaran: Cecair mudah terbakar. A
· Pengangkutan dalam pukal menurut Lampiran II MARPOL73/78 dan Kod IBC	Tidak berkenaan
· Pengangkutan/Maklumat Tambahan:	
· ADR · Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· "Peraturan Model" UN:	UN 1993 FLAMMABLE LIQUID, N.O.S., 3, III

15 Maklumat pengawalseliaan

- **Peraturan/undang-undang keselamatan, kesihatan dan persekitaran khusus untuk bahan atau campuran tersebut**
- **Unsur label GHS** Produk ini dikelaskan dan dilabelkan menurut Sistem Terharmoni Global (GHS).
- **Piktogram hazard**



GHS07 GHS08

- **Perkataan isyarat Bahaya**
- **Komponen pelabelan yang menentukan bahaya:**
Formaldehid
- **Pernyataan hazard**
Memudaratkan jika tertelan, terkena kulit atau tersedut.
Menyebabkan kerengsaan kulit.
Boleh menyebabkan tindak balas alahan kulit.
Disyaki menyebabkan kecacatan genetik.
Boleh menyebabkan kanser.
- **Pernyataan langkah perlindungan**
Elakkan daripada tersedut habuk/wasap/gas/kabus/wap/semburan.
Pakai sarung tangan / pakaian pelindung.
Gunakan kelengkapan pelindung diri seperti yang diperlukan.
Langkah khas (lihat label ini).

(Bersambung ke halaman 8)

Helaiian Data Keselamatan menurut P.U.(A) 310/2013

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Nama dagang: Paraformaldehyde 20% Solution, EM Grade

(Sambungan halaman 7)

Simpan di tempat berkunci.

Lupuskan kandungan/bekas menurut peraturan tempatan/wilayah/kebangsaan/antarabangsa.

· **Peraturan kebangsaan:**

· **Maklumat had kegunaan:**

Pekerja tidak dibenarkan terdedah kepada bahan karsinogen berbahaya yang terkandung dalam sediaan ini. Pengecualian boleh dibuat oleh pihak berkuasa dalam kes tertentu.

· **Penilaian keselamatan bahan kimia:** Penilaian Keselamatan Bahan Kimia belum dilakukan.

16 Maklumat lain

Maklumat ini berdasarkan maklumat kami yang terkini. Walau bagaimanapun, ini tidak akan menjadi jaminan bagi apa-apa ciri produk yang khusus dan tidak akan mewujudkan hubungan kontraktual yang sah dari segi undang-undang.

· **Singkatan dan akronim:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Toks. Akut 3: Ketoksikan akut – Kategori 3

Toks. Akut 4: Ketoksikan akut – Kategori 4

Kks. Kulit 1B: Kakisan atau kerengsaan kulit – Kategori 1B

Kreng. Kulit 2: Kakisan atau kerengsaan kulit – Kategori 2

Pem. Kulit 1: Pemekaan kulit – Kategori 1

Muta. 2: Kemutagenan sel germa – Kategori 2

Kars. 1B: Kekarsinogenan – Kategori 1B

物質安全資料表

根據 GB/T 16483-2008, GB/T 17519-2013

打印日期 2018.10.31

在 2018.10.31 審核

1 化學品及企業標識

- 產品識別者
- 化學品中文(英文)名稱, 化學品俗名或商品名: Paraformaldehyde 20% Solution, EM Grade
- 商品編號: 15713, 15713-SP, 15713-S
- 相應純物質或者混合物的相關下位用途及禁止用途 無相關詳細資料。
- 原材料的應用/準備工作進行 實驗室化學物
- 安全技術說明書內供應商詳細信息
- 企業名稱:
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- 可獲取更多資料的部門: Product safety department
- 緊急聯繫電話號碼:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 危險性概述

· 緊急情況概述:

純淨的, 液體, 可燃液體。 吞咽、皮膚接觸或吸入有害。 造成皮膚刺激。 造成嚴重眼睛刺激。 可能造成皮膚過敏。 懷疑造成遺傳性缺陷。 可能致癌。

· GHS危險性類別



健康危險

生殖細胞致突變性物質 第2級 H341 懷疑造成遺傳性缺陷
 致癌物質 第1B級 H350 可能致癌



急毒性物質(吞食) 第4級 H302 吞食有害
 急毒性物質(皮膚) 第4級 H312 皮膚接觸有害
 急毒性物質(吸入) 第4級 H332 吸入有害
 腐蝕/刺激皮膚物質 第2級 H315 造成皮膚刺激
 嚴重損傷/刺激眼睛物質 第2A級 H319 造成嚴重眼睛刺激
 皮膚過敏物質 第1級 H317 可能造成皮膚過敏

易燃液體 第4級 H227 可燃液體

· 標籤因素

- GHS標籤元素 本產品根據化學物質分類及標記全球協調制度(GHS)進行了分類及標記。

(在 2 頁繼續)

物質安全資料表

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化學品中文(英文)名稱, 化學品俗名或商品名: Paraformaldehyde 20% Solution, EM Grade

(在 1 頁繼續)

· 圖示



GHS07 GHS08

· 名稱 危險

· 標籤上辨別危險的成份:

福爾馬林溶液

· 危險字句

可燃液體

吞咽、皮膚接觸或吸入有害。

造成皮膚刺激

造成嚴重眼睛刺激

可能造成皮膚過敏

懷疑造成遺傳性缺陷

可能致癌

· 警戒字句

· 預防措施

遠離明火/熱表面。 — 禁止吸煙。

避免吸入粉塵/煙/氣體/煙霧/蒸氣/噴霧。

穿戴防護手套/防護衣物/眼睛防護具/臉部防護具。

· 事故響應

如進入眼睛：用水小心清洗數分鐘。如帶隱形眼鏡且可方便地取出，取出隱形眼鏡。繼續清洗。

· 安全貯存

加鎖存放。

· 廢棄處置

按照地方/區域/國家/國際法規處理內容物之廢棄/容器。

· 其他有害性

· PBT(殘留性、生物濃縮性、毒性物質) 及 vPvB(高殘留性、高生物濃縮性物質) 評價結果

· PBT(殘留性、生物濃縮性、毒性物質) 不適用的

· vPvB(高殘留性、高生物濃縮性物質): 不適用的

3 成分/組成資訊

· 混合物

· 描述: 由以下含有無害添加劑的成分組成的混合物

· 危險的成分:

50-00-0	福爾馬林溶液	>10-≤25%
	⚠ 急毒性物質(吞食) 第3級, H301; 急毒性物質(皮膚) 第3級, H311; 急毒性物質(吸入) 第3級, H331; ⚠ 生殖細胞致突變性物質 第2級, H341; 致癌物質 第1B級, H350; ⚠ 腐蝕/刺激皮膚物質 第1B級, H314; ⚠ 皮膚過敏物質 第1級, H317	

4 急救措施

· 應急措施要領

· 總說明: 中毒的症狀可能會在幾個小時以後才出現;因此在發生事故之後起碼要有 48 小時的醫療觀察。

· 吸入:

供給新鮮空氣並且確保會叫醫生。

萬一病人不清醒時,請讓病人側躺以便移動。

(在 3 頁繼續)

物質安全資料表

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(在 2 頁繼續)

- **皮膚接觸:** 馬上用水和肥皂進行徹底的沖洗。
- **眼睛接觸:** 張開眼睛在流水下沖洗數分鐘。如果症狀仍然持續,請諮詢醫生。
- **食入:** 馬上召喚醫生。
- **給醫生的資料:**
- **最重要的急慢性症狀及其影響** 無相關詳細資料。
- **需要及時的醫療處理及特別處理的症狀** 無相關詳細資料。

5 消防措施

- **滅火方法**
- **滅火的方法和滅火劑:** 二氧化碳 (CO₂)、滅火粉末或灑水。使用灑水或抗酒精泡沫滅火劑撲滅較大的火種。
- **特別危險性** 無相關詳細資料。
- **特殊滅火方法**
- **消防人員特殊的防護裝備:** 口腔呼吸保護裝置。

6 洩漏應急處理

- **保護措施** 沒有要求。
- **環境保護措施:**
用大量的水進行稀釋。
切勿讓其進入下水道/水面或地下水。
- **密封及淨化方法和材料:**
吸收液體粘合原料 (沙粒、矽藻土、酸性粘合劑、通用粘合劑、鋸屑)。
根據第 13 條條款棄置受汙染物。
確保有足夠的通風裝置。
- **參照其他部分**
有關安全處理的資料請參閱第 7 節。
有關個人保護裝備的資料請參閱第 8 節。
有關棄置的資料請參閱第 13 節。

7 操作處置與儲存

- **操作處置**
- **備存**
確保工作間有良好的通風/排氣裝置。
小心打開及處理貯藏器。
防止氣溶膠的形成。
- **有關火災及防止爆炸的資料:** 提供呼吸保護裝置。
- **混合危險性等安全儲存條件**
- **備存:**
- **儲存庫和容器須要達到的要求:** 沒有特別的要求。
- **有關使用一個普通的儲存設施來儲存的資料:** 不需要。
- **有關儲存條件的更多資料:** 將容器密封。
- **具體的最終用戶** 無相關詳細資料。

8 接觸控制和個體防護

- **工程控制方法:** 沒有進一步數據;見第 7 項。

(在 4 頁繼續)

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(在 3 頁繼續)

· 控制變數

· 在工作場需要監控的限值成分

50-00-0 福爾馬林溶液

PEL (TW) PC-TWA: 1.2 mg/m³, 1 ppm

OEL (CN) 上限值: 0.5 mg/m³

· 額外的資料: 制作期間有效的清單將作為基礎來使用.

· 遺漏控制

· 個人防護設備:

· 一般保護和衛生措施:

遠離食品、飲料和飼料.

立即除去所有的不潔的和被汙染的衣服.

在休息之前和工作完畢後請清洗雙手.

分開儲存保護性衣服.

避免和眼睛及皮膚接觸.

· 呼吸系統防護:

如果曾短暫接觸或在低汙染的情況下,請使用呼吸過濾裝置. 如果曾深入或較長時間接觸,請使用獨立的呼吸保護裝置.

· 手防護:



保護手套

手套的物料必須是不滲透性的,且能抵抗該產品/物質/添加劑.

基於缺乏測試,對於產品/制劑/化學混合物,並不會提供手套材料的建議

選擇手套材料時,請注意材料的滲透時間,滲濾率和降解參數

· 手套材料

選擇合適的手套不單取決於材料,亦取決於質量特征,以及來自哪一間生產廠家,因為該產品是由很多材料配制而成,手套材料的抵抗力並不可預計,所以,必須在使用之前進行檢查

· 滲入手套材料的時間 請向勞保手套生產廠家獲取準確的破裂時間並觀察實際的破裂時間

· 眼睛防護:



密封的護目鏡

9 理化特性

· 有關基本物理及化學特性的資訊

· 一般說明

· 外觀:

形狀: 液體

顏色: 純淨的

· 氣味: 有特性的

· 嗅覺閾限 未決定.

· pH值: 未決定.

· 條件的更改

熔點: 未確定的

(在 5 頁繼續)

物質安全資料表

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化學品中文(英文)名稱, 化學品俗名或商品名: Paraformaldehyde 20% Solution, EM Grade

(在 4 頁繼續)

沸點/初沸點和沸程:	>93 °C
· 閃點:	>60 °C
· 可燃性 (固體、氣體):	不適用的
· 點火溫度:	300 °C
· 分解溫度:	未決定.
· 自燃溫度:	該產品是不自燃的
· 爆炸的危險性:	未決定.
· 爆炸極限:	
較低:	7 Vol %
較高:	73 Vol %
· 蒸氣壓 在 20 °C:	23 hPa
· 密度 在 20 °C:	0.962 g/cm ³
· 相對密度	未決定.
· 蒸氣密度	未決定.
· 蒸發速率	未決定.
· 溶解性	
水:	完全可拌和的
· n-辛醇/水分配係數:	未決定.
· 黏性:	
動態:	未決定.
運動學的:	未決定.
· 溶劑成份:	
有機溶劑:	20.0 %
水:	80.0 %
· 固體成份:	0.0 %
· 其他資訊	無相關詳細資料。

10 穩定性和反應性

- 反應性 無相關詳細資料。
- 穩定性
- 熱分解/要避免的情況: 如果遵照規格使用則不會分解.
- 有害反應可能性 未有已知的危險反應.
- 應避免的條件 無相關詳細資料。
- 不相容的物質: 無相關詳細資料。
- 危險的分解產物: 未知有危險的分解產品.

-TW-

(在 6 頁繼續)

物質安全資料表

根據 GB/T 16483-2008, GB/T 17519-2013

打印日期 2018.10.31

在 2018.10.31 審核

化學品中文(英文)名稱, 化學品俗名或商品名: Paraformaldehyde 20% Solution, EM Grade

(在 5 頁繼續)

11 毒理學資訊

· 對毒性學影響的資訊

· 急性毒性:

· 與分類相關的 LD/LC50 值:

50-00-0 福爾馬林溶液

口腔	LD50	>200 mg/kg (rat)
----	------	------------------

· 主要的刺激性影響:

- 皮膚: 刺激皮膚和粘膜.
- 在眼睛上面: 刺激的影響.
- 致敏作用: 通過皮膚接觸可能造成敏化作用.

· 更多毒物的資料:

根據有關配制的一般歐盟分類指南的計算方法(刊印在最新版本),該產品顯示以下的危險:

有害的
刺激性的
致癌的.

· 對以下組別可能產生影響的資料:

- CMR作用 (致癌、導致基因突變、對生殖系統有害)
生殖細胞致突變性物質 第2級, 致癌物質 第1B級

12 生態學資訊

· 生態毒性

- 水生毒性: 無相關詳細資料。
- 持久性和降解性 無相關詳細資料。
- 環境系統習性:
- 潛在的生物累積性 無相關詳細資料。
- 土壤內移動性 無相關詳細資料。

· 額外的生態學資料:

· 總括注解:

水危害級別 2 (德國規例) (通過名單進行自我評估): 對水是危害的

不要讓該產品接觸地下水、水道或污水系統.

即使是小量的產品滲入地下也會對飲用水造成危險.

- PBT(殘留性、生物濃縮性、毒性物質) 及 vPvB(高殘留性、高生物濃縮性物質)評價結果

- PBT(殘留性、生物濃縮性、毒性物質) 不適用的

- vPvB(高殘留性、高生物濃縮性物質): 不適用的

- 其他副作用 無相關詳細資料。

13 廢棄處置

· 廢棄處置方法

- 建議: 不能將該產品和家居垃圾一起丟棄. 不要讓該產品接觸污水系統.

· 受污染的容器和包裝:

- 建議: 必須根據官方的規章來丟棄.
- 建議的清洗劑: 如有必要請使用水及清潔劑進行清潔.

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14 運輸資訊

<ul style="list-style-type: none"> · 聯合國危險貨物編號(UN號) · ADR, IMDG, IATA 	UN1993
<ul style="list-style-type: none"> · UN適當裝船名 · ADR · IMDG, IATA 	1993 FLAMMABLE LIQUID, N.O.S. FLAMMABLE LIQUID, N.O.S.
<ul style="list-style-type: none"> · 運輸危險等級 · ADR 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · 級別 	3 易燃液體
<ul style="list-style-type: none"> · IMDG, IATA · Class 	無效
<ul style="list-style-type: none"> · 包裝組別 · ADR, IMDG, IATA 	III
<ul style="list-style-type: none"> · 危害環境: 	不適用的
<ul style="list-style-type: none"> · 用戶特別預防措施 · Stowage Category 	警告: 易燃液體 A
<ul style="list-style-type: none"> · MARPOL73/78(針對船舶引起的海洋污染預防協約)附件書2及根據IBC Code(國際裝船貨物編碼)的大量運送 	不適用的
<ul style="list-style-type: none"> · 運輸/額外的資料: 	<ul style="list-style-type: none"> · ADR · Excepted quantities (EQ)
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml 5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> · UN "標準規定": 	UN 1993 FLAMMABLE LIQUID, N.O.S., 3, III

15 法規資訊

<ul style="list-style-type: none"> · 對相應純物質或者混合物的安全、保健及環境法規/法律 	
<ul style="list-style-type: none"> · 中國現有化學物質名錄 	列出所有成分
<ul style="list-style-type: none"> · TCSCA 	
<ul style="list-style-type: none"> · 列管編號 	
50-00-0 福爾馬林溶液	66/01

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· 毒性分類		
50-00-0	福爾馬林溶液	2, 3
· 管制濃度 (w/w%)		
50-00-0	福爾馬林溶液	15
· 大量運作基準 (公斤)		
50-00-0	福爾馬林溶液	50
· TCSI - Taiwan Chemical Substance Inventory		
列出所有成分		

· **GHS標籤元素** 本產品根據化學物質分類及標記全球協調制度(GHS)進行了分類及標記。

· **圖示**



GHS07 GHS08

· **名稱** 危險

· **標籤上辨別危險的成份:**

福爾馬林溶液

· **危險字句**

可燃液體

吞咽、皮膚接觸或吸入有害。

造成皮膚刺激

造成嚴重眼睛刺激

可能造成皮膚過敏

懷疑造成遺傳性缺陷

可能致癌

· **警戒字句**

· **預防措施**

遠離明火/熱表面。—禁止吸煙。

避免吸入粉塵/煙/氣體/煙霧/蒸氣/噴霧。

穿戴防護手套/防護衣物/眼睛防護具/臉部防護具。

· **事故響應**

如進入眼睛：用水小心清洗數分鐘。如帶隱形眼鏡且可方便地取出，取出隱形眼鏡。繼續清洗。

· **安全貯存**

加鎖存放。

· **廢棄處置**

按照地方/區域/國家/國際法規處理內容物之廢棄/容器。

· **國家的規章:**

· **有關使用限制的資料:** 禁止員工接觸在配制中含有致癌的物料。在某些情況中由當局作出例外的決定。

· **化學物質安全性評價:** 尚未進行化學物質安全性評價

16 其他資訊

該資料是基於我們目前的知識。然而,這並不構成對任何特定產品特性的擔保並且不建立一個法律上有效的合同關係。

· **縮寫:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

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IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: 持久性生物累積性有毒物質
vPvB: very Persistent and very Bioaccumulative
易燃液體 第4級: Flammable liquids – Category 4
急毒性物質(吞食) 第3級: Acute toxicity – Category 3
急毒性物質(吞食) 第4級: Acute toxicity – Category 4
腐蝕/刺激皮膚物質 第1B級: Skin corrosion/irritation – Category 1B
腐蝕/刺激皮膚物質 第2級: Skin corrosion/irritation – Category 2
嚴重損傷/刺激眼睛物質 第2A級: Serious eye damage/eye irritation – Category 2A
皮膚過敏物質 第1級: Skin sensitisation – Category 1
生殖細胞致突變性物質 第2級: Germ cell mutagenicity – Category 2
致癌物質 第1B級: Carcinogenicity – Category 1B

TW

Sikkerhetsdatablad

iflg. forordning (EF) nr. 1907/2006, Artikkel 31

Trykkdato: 31.10.2018

revidert den: 31.10.2018

Avsnitt 1: Identifikasjon av stoffet/stoffblandingen og av selskapet/foretaket

- **1.1 Produktidentifikator**
- **Handelsnavn:** *Paraformaldehyde 20% Solution, EM Grade*
- **Artikkelnummer:** *15713, 15713-SP, 15713-S*
- **1.2 Relevante identifiserte bruksområder for stoffet eller stoffblandingen og bruk som frarådes**
Ikke noe mer relevant informasjon tilgjengelig.
- **Bruk av stoffet/ tilberedning** *laboratoriekjemikalier*
- **1.3 Opplysninger om leverandøren av sikkerhetsdatabladet**
- **Produsent/leverandør:**
*Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com*
- **Avdeling for nærmere informasjon:** *Product safety department*
- **1.4 Nødtelefonnummer**
*ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887*

Avsnitt 2: Fareidentifikasjon

- **2.1 Klassifisering av stoffet eller stoffblandingen**
- **Klassifisering i henhold til EC-forskrift nr.1272/2008**



GHS08 Helsefare

Muta. 2 H341 Mistenkes å kunne gi genetiske skader.
Carc. 1B H350 Kan forårsake kreft.



GHS07

Acute Tox. 4 H302 Farlig ved svelging.
Acute Tox. 4 H312 Farlig ved hudkontakt.
Acute Tox. 4 H332 Farlig ved innånding.
Skin Irrit. 2 H315 Irriterer huden.
Eye Irrit. 2 H319 Gir alvorlig øyeirritasjon.
Skin Sens. 1 H317 Kan utløse en allergisk hudreaksjon.
STOT SE 3 H335 Kan forårsake irritasjon av luftveiene.

- **2.2 Merkingselementer**
- **Merking iht. bestemmelse (EC) Nr. 1272/2008**
Produktet er klassifisert og merket i henhold til CLP-forordningen.
- **Farepiktogrammer**



GHS07



GHS08

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· **Varselord Fare**

· **Farebestemmende komponenter ved etikettering:**

formaldehyd

· **Faresetninger**

H302+H312+H332 Farlig ved svelging, hudkontakt eller innånding.

H315 Irriterer huden.

H319 Gir alvorlig øyeirritasjon.

H317 Kan utløse en allergisk hudreaksjon.

H341 Mistenkes å kunne gi genetiske skader.

H350 Kan forårsake kreft.

H335 Kan forårsake irritasjon av luftveiene.

· **Sikkerhetssetninger**

P261 Unngå innånding av støv/røyk/gass/tåke/damp/aerosoler.

P280 Benytt vernehansker/verneklær/vernebriller/ansiktsskjerm.

P305+P351+P338 VED KONTAKT MED ØYNE: Skyll forsiktig med vann i flere minutter. Fjern eventuelle kontaktlinser dersom dette enkelt lar seg gjøre. Fortsett skyllingen.

P322 Særlige tiltak (se på etiketten).

P405 Oppbevares innelåst.

P501 Innholdet / emballasjen skal avhendes i henhold til de lokale / regionale / nasjonale / internasjonale forskrifter.

· **2.3 Andre farer**

· **Resultater av PBT- og vPvB-vurdering**

· **PBT:** Ikke brukbar.

· **vPvB:** Ikke brukbar.

Avsnitt 3: Sammensetning/opplysninger om bestanddeler

· **3.2 Kjemisk karakterisering: Stoffblandinger**

· **Beskrivelse:** Blanding av nedenstående oppførte stoffer med ufarlige tilsetninger.

· **Farlige innholdsstoffer:**

CAS: 50-00-0	formaldehyd	>10-≤25%
EINECS: 200-001-8	☠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; ☠ Muta. 2, H341; Carc. 1B, H350; ☠ Skin Corr. 1B, H314; ☠ Skin Sens. 1, H317	

· **Ytterligere informasjon:** Teksten til de fareangivelsene som er inkludert her, kan konsulteres i kapittel 16.

Avsnitt 4: Førstehjelpstiltak

· **4.1 Beskrivelse av førstehjelpstiltak**

· **Generelle informasjon:**

Forgiftningssymptomer kan også oppstå etter mange timer. Personer må derfor ha legetilsyn i minst 48 timer etter en ulykke.

· **Etter innånding:**

Rikelig frisklufttilførsel, søk legehjelp for sikkerhets skyld.

Ved bevisstløshet lagring og transport i stabil sidestilling.

· **Etter hudkontakt:** Vask straks med vann og sepe og skyll godt etterpå.

· **Etter øyekontakt:**

Skyll øynene med åpne øyenlokk i flere minutter under rennende vann. Ved fortsatt besvær tilkall lege.

· **Etter svelging:** Søk lege straks.

· **4.2 De viktigste symptomene og virkningene, både akutte og forsinkede**

Ikke noe mer relevant informasjon tilgjengelig.

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- **4.3 Angivelse av om umiddelbar legehjelp og spesialbehandling er nødvendig**
Ikke noe mer relevant informasjon tilgjengelig.

Avsnitt 5: Brannsløkkingstiltak

- **5.1 Slokkingsmidler**
- **Egnede slukningsmidler:**
CO₂, slukningspulver eller vann i spredt stråle. Større branner bekjempes med vann i spredt stråle eller med skum som er motstandsdyktig mot alkohol.
- **5.2 Særlige farer knyttet til stoffet eller stoffblandingen** Ikke noe mer relevant informasjon tilgjengelig.
- **5.3 Råd til brannmannskaper**
- **Spesielt verneutstyr:** Ta på egnet åndedrettsbeskyttelse.

Avsnitt 6: Tiltak ved utilsiktede utslipp

- **6.1 Personlige forsiktighetsregler, personlig verneutstyr og nødrutiner** Ikke nødvendig.
- **6.2 Forsiktighetsregler med hensyn til miljø**
Fortynn med rikelig med vann.
La ikke produktet komme ned i kloakk/overflatevann/grunnvann.
- **6.3 Metoder og materialer for oppsamling og rensing**
Ta opp stoffet med væskebindende materiale (sand, kiselgur, syrebindemiddel, universalbindemiddel, sagflis).
Bortskaff kontaminert materiale som avfall i.h.t. punkt 13.
Sørg for tilstrekkelig ventilasjon.
- **6.4 Henvisning til andre avsnitt**
Informasjoner om sikker håndtering, se kapittel 7.
Informasjoner om personlig beskyttelsesutstyr, se kapittel 8.
Informasjoner om bortskaffelse/deponering, se kapittel 13.

Avsnitt 7: Håndtering og lagring

- **7.1 Forsiktighetsregler for sikker håndtering**
Sørg for god ventilasjon/avsugning på arbeidsplassen.
Beholderne må åpnes og håndteres forsiktig.
Unngå aerosoldannelse.
- **Henvisninger om brann- og eksplosjonsvern:** Hold åndedrettsbeskyttelse i beredskap.
- **7.2 Vilkår for sikker lagring, herunder eventuelle uforenligheter**
- **Lagring:**
- **Krav til lagerrom og beholdere:** Ingen spesielle krav.
- **Informasjoner om felles lagring:** Ikke nødvendig.
- **Ytterligere informasjon om lagervilkårene:** Hold beholderne tett tillukket.
- **7.3 Særlig(e) sluttanvendelse(r)** Ikke noe mer relevant informasjon tilgjengelig.

Avsnitt 8: Eksponeringskontroll / personlig verneutstyr

- **Ytterligere informasjon om utforming av tekniske anlegg:** Ingen ytterligere informasjon, se punkt 7.

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· 8.1 Kontrollparametere

· Komponenter med grenseverdier for arbeidsplass som må overholdes:

50-00-0 formaldehyd

AG	Langtidsverdi: 0,6 mg/m ³ , 0,5 ppm
	Takverdi: 1,2 mg/m ³ , 1 ppm
A K	

· **Ytterligere informasjoner:** Basis: listene som var gyldige ved oppstillingen.

· 8.2 Eksponeringskontroll

· Personlig verneutstyr:

· Generelle verne- og hygienetiltak:

Holdes adskilt fra næringsmidler, drikkevarer og forstoffer.

Fjern omgående forurensede, gjennomvætede klær.

Vask hendene før arbeidspauser og ved arbeidets slutt.

Beskyttelsesklær må oppbevares adskilt.

Unngå berøring med øyne og hud.

· Åndedrettsvern:

Ved korttidlig eller liten belastning åndedrettsfilterapparat; ved intensiv eller lengre utsetting: bruk omluft-uavhengig åndedrettsbeskyttelsesapparat.

· Håndvern:



Beskyttelseshansker

Hanskematerialet må være ugjennomtrengelig og bestandig overfor produktet /stoffet /blandingen.

På grunn av manglende tester kan det ikke gis noen anbefaling om hanskemateriale for produktet /tilberedningsprosessen/kjemikalieblandingen.

Hanskematerialet velges under hensyntagen til holdbarhetstid, gjennomtrengelighet og degradering.

· hanskemateriale

Valget av egnet hanske er ikke bare avhengig av materiale, men også av andre kvalitetskjenner og er forskjellig fra produsent til produsent. Da produktet representerer en sammensetning av flere stoffer, kan holdbarheten av hanskematerialet ikke forhåndsberegnes, og denne må testes før bruk.

· gjennomtrengingstid for hanskemateriale

Den nøyaktige holdbarhetstiden må bringes på det rene hos hanskeprodusenten og overholdes.

· Øyevern:



Tettsittende vernebrille

Avsnitt 9: Fysiske og kjemiske egenskaper

· 9.1 Opplysninger om grunnleggende fysiske og kjemiske egenskaper

· alminnelige opplysninger

· Utseende:

Form: Væske

Farge: Klar

· Lukt: Karakteristisk

· Luktterskel: Ikke bestemt.

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· pH-verdi:	Ikke bestemt.
· Tilstandsendring	
Smeltepunkt/frysepunkt:	Ikke bestemt.
Startkokepunkt og kokeområde:	>93 °C
· Flammepunkt:	>60 °C
· Antennelighet (fast stoff, gass):	Ikke brukbar.
· Antennelsestemperatur:	300 °C
· Nedbrytingstemperatur:	Ikke bestemt.
· Selvantennelsestemperatur:	Produktet er ikke selvantennelig.
· Eksplorative egenskaper:	Ikke bestemt.
· Ekspljosjonsgrenser:	
Nedre:	7 Vol %
Øvre	73 Vol %
· Damptrykk ved 20 °C:	23 hPa
· Tetthet ved 20 °C:	0,962 g/cm ³
· Relativ tetthet:	Ikke bestemt.
· Damptetthet:	Ikke bestemt.
· Fordampingshastighet:	Ikke bestemt.
· Løslighet i / blandbarhet med vann:	Fullstendig blandbar.
· Fordelingskoeffisient; n-oktanol/vann:	Ikke bestemt.
· Viskositet:	
Dynamisk:	Ikke bestemt.
Kinematisk:	Ikke bestemt.
· Løsningsmiddelandel:	
Organiske løsningsmidler:	20,0 %
Vann:	80,0 %
VOC (EF)	20,00 %
Andel faste stoffer:	0,0 %
· 9.2 Andre opplysninger	Ikke noe mer relevant informasjon tilgjengelig.

Avsnitt 10: Stabilitet og reaktivitet

- **10.1 Reaktivitet** Ikke noe mer relevant informasjon tilgjengelig.
- **10.2 Kjemisk stabilitet**
- **Termisk spaltning / vilkår som må unngås:** Ingen spaltning ved formålsriktig bruk.
- **10.3 Risiko for farlige reaksjoner** Det kjennes ingen farlige reaksjoner.
- **10.4 Forhold som skal unngås** Ikke noe mer relevant informasjon tilgjengelig.
- **10.5 Uforenlige materialer** Ikke noe mer relevant informasjon tilgjengelig.
- **10.6 Farlige nedbrytingsprodukter** Ingen farlige spaltningsprodukter kjente.

NO

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Avsnitt 11: Toksikologiske opplysninger

· 11.1 Opplysninger om toksikologiske virkninger

· Akutt giftighet

Farlig ved svelging, hudkontakt eller innånding.

· Klassifiseringsrelevante LD/LC50-verdier:

50-00-0 formaldehyd

Oral	LD50	>200 mg/kg (rat)
------	------	------------------

· Primær irriteringsvirkning:

· Hudetsing/hudirritasjon

Irriterer huden.

· Alvorlig øyeskade/øyeirritasjon

Gir alvorlig øyeirritasjon.

· Sensibilisering ved innånding eller hudkontakt

Kan utløse en allergisk hudreaksjon.

· Informasjon om følgende grupper med potensielle virkninger:

· CMR-virkninger (kreftfremkallende virkninger, arvestoffskadelige og reproduksjonsskadelige virkninger)

· Arvestoffskadelig virkning på kjønnseller

Mistenkes å kunne gi genetiske skader.

· Kreftfremkallende egenskap

Kan forårsake kreft.

· Reproduksjonstoksitet Basert på tilgjengelige data, klassifiseringskriteriene ikke oppfylt.

· STOT – enkelteksponering

Kan forårsake irritasjon av luftveiene.

· STOT – gjentatt eksponering Basert på tilgjengelige data, klassifiseringskriteriene ikke oppfylt.

· Aspirasjonsfare Basert på tilgjengelige data, klassifiseringskriteriene ikke oppfylt.

Avsnitt 12: Økologiske opplysninger

· 12.1 Giftighet

· Akvatisk toksisitet: Ikke noe mer relevant informasjon tilgjengelig.

· 12.2 Persistens og nedbrytbarhet Ikke noe mer relevant informasjon tilgjengelig.

· 12.3 Bioakkumuleringsevne Ikke noe mer relevant informasjon tilgjengelig.

· 12.4 Mobilitet i jord Ikke noe mer relevant informasjon tilgjengelig.

· Ytterligere økologiske informasjon:

· Generelle informasjon:

Vannfareklasse 2 (D) (Selvklassifisering): farlig for vann

Ikke la stoffet komme ned i grunnvannet, i vassdrag eller i kloakker.

Fare for drikkevann allerede ved utstrømning av små mengder i marken.

· 12.5 Resultater av PBT- og vPvB-vurdering

· PBT: Ikke brukbar.

· vPvB: Ikke brukbar.

· 12.6 Andre skadevirkninger Ikke noe mer relevant informasjon tilgjengelig.

Avsnitt 13: Sluttbehandling

· 13.1 Avfallsbehandlingsmetoder

· **Anbefaling:** Må ikke bortskaffes sammen med husholdningsavfall. Må ikke komme ned i kloakk.

· Ikke rengjort emballasje:

· **Anbefaling:** Deponering i henhold til myndighetenes forskrifter.

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· **Anbefalt rengjøringsmiddel:** Vann, eventuelt med tilsetning av rengjøringsmidler.

Avsnitt 14: Transportopplysninger

· 14.1 FN-nummer
· ADR, IMDG, IATA

UN1993

· 14.2 FN-forsendelsesnavn
· ADR
· IMDG, IATA

1993 BRANNFARLIG VÆSKE N.O.S.
FLAMMABLE LIQUID, N.O.S.

· 14.3 Transportfareklasse(r)
· ADR



· klasse 3 Brannfarlige væsker

· IMDG, IATA
· Class

bortfaller

· 14.4 Emballasjegruppe
· ADR, IMDG, IATA

III

· 14.5 Miljøfarer

Ikke brukbar.

· 14.6 Særlige forsiktighetsregler ved bruk
· Stowage Category

Advarsel: Brannfarlige væsker
A

· 14.7 Bulktransport i henhold til vedlegg II til
MARPOL 73/78 og IBC-regelverket

Ikke brukbar.

· Transport/ytterligere informasjoner:

· ADR
· Begrenset mengde (LQ)
· Unntatte mengder (EQ)

5L
Kode: E1
Maksimal nettovekt per inneremballasje: 30 ml
Maksimal nettovekt per ytteremballasje: 1000 ml

· IMDG
· Limited quantities (LQ)
· Excepted quantities (EQ)

5L
Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

· UN "Model Regulation":

UN 1993 BRANNFARLIG VÆSKE N.O.S., 3, III

NO

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Avsnitt 15: Opplysninger om regelverk

- **15.1 Særlige bestemmelser / særskilt lovgivning om sikkerhet, helse og miljø for stoffet eller stoffblandingen**
- **Nasjonale forskrifter:**
- **Informasjoner om arbeidsinnskrenkning:**
Arbeidstagere må ikke utsettes for de kreftfremkallende farlige stoffer som er inneholdt i denne blandingen. I enkelte tilfeller kan myndighetene tillate unntak.
- **15.2 Vurdering av kjemikaliesikkerhet** En kjemisk sikkerhetsvurdering er ikke utført.

Avsnitt 16: Andre opplysninger

Opplysningene er basert på vårt kjennskap i dag. De utgjør dog ingen forsikring om produktegenskaper og er ikke grunnlag for noe kontraktsmessig rettsforhold.

- **Relevante satser**
H301 Giftig ved svelging.
H311 Giftig ved hudkontakt.
H314 Gir alvorlige etseskader på hud og øyne.
H317 Kan utløse en allergisk hudreaksjon.
H331 Giftig ved innånding.
H341 Mistenkes å kunne gi genetiske skader.
H350 Kan forårsake kreft.
- **Forkortelser og akronymer:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 3: Akutt giftighet – Kategori 3
Acute Tox. 4: Akutt giftighet – Kategori 4
Skin Corr. 1B: Hudetsing/hudirritasjon – Kategori 1B
Skin Irrit. 2: Hudetsing/hudirritasjon – Kategori 2
Eye Irrit. 2: Alvorlig øyeskade/øyeirritasjon – Kategori 2
Skin Sens. 1: Hudsensibilisering – Kategori 1
Muta. 2: Skade på arvestoffet i kjønnceller – Kategori 2
Carc. 1B: Kreftframkallende egenskaper – Kategori 1B
STOT SE 3: Giftvirkning på bestemte organer (enkelteksponering) – Kategori 3

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SECÇÃO 1: Identificação da substância/mistura e da sociedade/empresa

- **1.1 Identificador do produto**
- **Nome comercial:** *Paraformaldehyde 20% Solution, EM Grade*
- **Código do produto:** *15713, 15713-SP, 15713-S*
- **1.2 Utilizações identificadas relevantes da substância ou mistura e utilizações desaconselhadas**
Não existe mais nenhuma informação relevante disponível.
- **Utilização da substância / da preparação** *Químicos de laboratório*
- **1.3 Identificação do fornecedor da ficha de dados de segurança**
- **Fabricante/fornecedor:**
*Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com*
- **Entidade para obtenção de informações adicionais:** *Product safety department*
- **1.4 Número de telefone de emergência:**
*ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887*

SECÇÃO 2: Identificação dos perigos

- **2.1 Classificação da substância ou mistura**
- **Classificação em conformidade com o Regulamento (CE) n.º 1272/2008**



GHS08 perigo para a saúde

Muta. 2 H341 Suspeito de provocar anomalias genéticas.
Carc. 1B H350 Pode provocar cancro.



GHS07

Acute Tox. 4 H302 Nocivo por ingestão.
Acute Tox. 4 H312 Nocivo em contacto com a pele.
Acute Tox. 4 H332 Nocivo por inalação.
Skin Irrit. 2 H315 Provoca irritação cutânea.
Eye Irrit. 2 H319 Provoca irritação ocular grave.
Skin Sens. 1 H317 Pode provocar uma reacção alérgica cutânea.
STOT SE 3 H335 Pode provocar irritação das vias respiratórias.

- **2.2 Elementos do rótulo**
- **Rotulagem em conformidade com o Regulamento (CE) n.º 1272/2008**
O produto classificou-se e está etiquetado em conformidade com o regulamento CLP.
- **Pictogramas de perigo**



GHS07



GHS08

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· **Palavra-sinal Perigo**

· **Componentes determinantes para os perigos constantes do rótulo:**
formaldeído

· **Advertências de perigo**

H302+H312+H332 Nocivo por ingestão, contacto com a pele ou inalação.

H315 Provoca irritação cutânea.

H319 Provoca irritação ocular grave.

H317 Pode provocar uma reacção alérgica cutânea.

H341 Suspeito de provocar anomalias genéticas.

H350 Pode provocar cancro.

H335 Pode provocar irritação das vias respiratórias.

· **Recomendações de prudência**

P261 Evitar respirar as poeiras/fumos/gases/névoas/vapores/aerossóis.

P280 Usar luvas de protecção/vestuário de protecção/protecção ocular/protecção facial.

P305+P351+P338 SE ENTRAR EM CONTACTO COM OS OLHOS: enxaguar cuidadosamente com água durante vários minutos. Se usar lentes de contacto, retire-as, se tal lhe for possível. Continuar a enxaguar.

P322 Medidas específicas (ver no presente rótulo).

P405 Armazenar em local fechado à chave.

P501 Eliminar o conteúdo/recipiente de acordo com a legislação local/regional/nacional/internacional.

· **2.3 Outros perigos**

· **Resultados da avaliação PBT e mPmB**

· **PBT:** Não aplicável.








· **mPmB:** Não aplicável.

SECÇÃO 3: Composição/informação sobre os componentes

· **3.2 Caracterização química: Misturas**

· **Descrição:** Mistura das seguintes substâncias com aditivos não perigosos.

· **Substâncias perigosas:**

CAS: 50-00-0	formaldeído	>10-≤25%
EINECS: 200-001-8	 Acute Tox. 3, H301;  Acute Tox. 3, H311;  Acute Tox. 3, H331;  Muta. 2, H341;  Carc. 1B, H350;  Skin Corr. 1B, H314;  Skin Sens. 1, H317	

· **Avisos adicionais:** O texto das indicações de perigo aqui incluído poderá ser consultado no capítulo 16.

SECÇÃO 4: Medidas de primeiros socorros

· **4.1 Descrição das medidas de primeiros socorros**

· **Indicações gerais:**

Os sintomas de envenenamento podem surgir apenas após várias horas, por isso é necessária vigilância médica pelo menos 48 horas após o acidente.

· **Em caso de inalação:**

Assegurar uma boa entrada de oxigénio e, por razões de segurança, procurar auxílio médico.

Se a vítima estiver inconsciente, posicioná-la e transportá-la com estabilidade, deitada lateralmente.

· **Em caso de contacto com a pele:** Lavar imediatamente com água e sabão e enxaguar abundantemente.

· **Em caso de contacto com os olhos:**

Enxaguar os olhos durante alguns minutos sob água corrente, mantendo as pálpebras abertas. Em caso de persistência dos sintomas, consultar o médico.

· **Em caso de ingestão:** Consultar imediatamente o médico

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- **4.2 Sintomas e efeitos mais importantes, tanto agudos como retardados**
Não existe mais nenhuma informação relevante disponível.
- **4.3 Indicações sobre cuidados médicos urgentes e tratamentos especiais necessários**
Não existe mais nenhuma informação relevante disponível.

SECÇÃO 5: Medidas de combate a incêndios

- **5.1 Meios de extinção**
- **Meios adequados de extinção:**
CO₂, pó extintor ou jacto de água. Um incêndio de grandes dimensões deve ser combatido com jacto de água ou espuma resistente ao álcool.
- **5.2 Perigos especiais decorrentes da substância ou mistura**
Não existe mais nenhuma informação relevante disponível.
- **5.3 Recomendações para o pessoal de combate a incêndios**
- **Equipamento especial de protecção:** Colocar máscara de respiração.

SECÇÃO 6: Medidas a tomar em caso de fugas acidentais

- **6.1 Precauções individuais, equipamento de protecção e procedimentos de emergência** Não necessário.
- **6.2 Precauções a nível ambiental:**
Diluir em bastante água.
Evitar que penetre na canalização / águas superficiais / águas subterrâneas.
- **6.3 Métodos e materiais de confinamento e limpeza:**
Recolher com produtos que absorvam líquidos (areia, seixos, absorventes universais, serradura).
Eliminar residualmente as substâncias contaminadas como um resíduo segundo o Ponto 13.
Assegurar uma ventilação adequada.
- **6.4 Remissão para outras secções**
Para informações sobre uma manipulação segura, ver o capítulo 7.
Para informações referentes ao equipamento de protecção individual, ver o capítulo 8.
Para informações referentes à eliminação residual, ver o capítulo 13.

SECÇÃO 7: Manuseamento e armazenagem

- **7.1 Precauções para um manuseamento seguro**
Assegurar uma boa ventilação / exaustão no local de trabalho.
Abrir e manusear o recipiente com cuidado
Evitar a formação de aerossóis.
- **Precauções para prevenir incêndios e explosões:** Manter uma máscara de respiração sempre preparada.
- **7.2 Condições de armazenagem segura, incluindo eventuais incompatibilidades**
- **Armazenagem:**
- **Requisitos para espaços ou contentores para armazenagem:** Sem requisitos especiais.
- **Avisos para armazenagem conjunta:** Não necessário.
- **Outros avisos sobre as condições de armazenagem:** Manter o recipiente hermeticamente fechado.
- **7.3 Utilização(ões) final(is) específica(s)** Não existe mais nenhuma informação relevante disponível.

SECÇÃO 8: Controlo da exposição/Protecção individual

- **Indicações adicionais para concepção de instalações técnicas:** Não existem outras informações, ver ponto 7.
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· 8.1 Parâmetros de controlo· **Componentes cujo valor do limite de exposição no local de trabalho deve ser monitorizado:****50-00-0 formaldeído**

VLE	Valor limite de exposição – concentração máxima: 0,3 ppm (S); A2; Irritação ocular e do TRS
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· **Indicações adicionais:** Foram utilizadas como base as listas válidas à data da elaboração.**· 8.2 Controlo da exposição**· **Equipamento de protecção individual:**· **Medidas gerais de protecção e higiene:**

Manter afastado de alimentos, bebidas e forragens.

Despir imediatamente a roupa contaminada e embebida.

Lavar as mãos antes das pausas e no fim do trabalho.

Guardar o vestuário de protecção separadamente.

Evitar o contacto com os olhos e com a pele.

· **Protecção respiratória:**

Utilizar uma máscara respiratória se a exposição for reduzida ou durante um curto espaço de tempo; se esta for mais prolongada ou mais intensa, utilizar uma máscara respiratória independente do ar ambiente.

· **Protecção das mãos:**

Luvas de protecção

O material das luvas tem de ser impermeável e resistente ao produto / à substância / preparação.

Uma vez que não foram realizados testes nesta área, não podemos recomendar um determinado tipo de material para as luvas que seja adequado para o produto / a preparação / a mistura de químicos.

Escolher o material das luvas tendo em consideração a durabilidade, a permeabilidade e a degradação.

· **Material das luvas**

A escolha das luvas mais adequadas não depende apenas do material, mas também de outras características qualitativas e varia de fabricante para fabricante. O facto de o produto ser composto por uma variedade de materiais leva a que não seja possível prever a duração dos mesmos e, conseqüentemente, das luvas, sendo assim necessário proceder a uma verificação antes da sua utilização.

· **Tempo de penetração no material das luvas**

Deve informar-se sobre a validade exacta das suas luvas junto do fabricante e respeitá-la.

· **Protecção dos olhos:**

Óculos de protecção totalmente fechados

SECÇÃO 9: Propriedades físico-químicas· **9.1 Informações sobre propriedades físicas e químicas de base**· **Informações gerais**· **Aspetto:**· **Forma:**

Líquido

· **Cor:**

Claro

· **Odor:**

Característico

· **Limiar olfactivo:**

Não classificado.

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· valor pH:	<i>Não classificado.</i>
· Mudança do estado:	
Ponto de fusão/ponto de congelação:	<i>Não classificado.</i>
Ponto de ebulição inicial e intervalo de ebulição:	<i>>93 °C</i>
· Ponto de inflamação:	<i>>60 °C</i>
· Inflamabilidade (sólido, gás):	<i>Não aplicável.</i>
· Temperatura de ignição:	<i>300 °C</i>
· Temperatura de decomposição:	<i>Não classificado.</i>
· Temperatura de autoignição:	<i>O produto não é auto-inflamável.</i>
· Propriedades explosivas:	<i>Não classificado.</i>
· Limites de explosão:	
Inferior:	<i>7 Vol %</i>
Superior:	<i>73 Vol %</i>
· Pressão de vapor em 20 °C:	<i>23 hPa</i>
· Densidade em 20 °C:	<i>0,962 g/cm³</i>
· Densidade relativa	<i>Não classificado.</i>
· Densidade de vapor	<i>Não classificado.</i>
· Taxa de evaporação:	<i>Não classificado.</i>
· Solubilidade em / miscibilidade com água:	<i>Completamente misturável.</i>
· Coefficiente de partição: n-octanol/água	<i>Não classificado.</i>
· Viscosidade:	
Dinâmico:	<i>Não classificado.</i>
Cinemático:	<i>Não classificado.</i>
· Percentagem de solvente:	
Solventes orgânicos:	<i>20,0 %</i>
Água:	<i>80,0 %</i>
VOC (UE)	<i>20,00 %</i>
· Percentagem de substâncias sólidas:	<i>0,0 %</i>
· 9.2 Outras informações	<i>Não existe mais nenhuma informação relevante disponível.</i>

SECÇÃO 10: Estabilidade e reactividade

- **10.1 Reactividade** *Não existe mais nenhuma informação relevante disponível.*
- **10.2 Estabilidade química**
- **Decomposição térmica / condições a evitar:** *Não existe decomposição se usado de acordo com as especificações.*
- **10.3 Possibilidade de reações perigosas** *Não se conhecem reações perigosas.*
- **10.4 Condições a evitar** *Não existe mais nenhuma informação relevante disponível.*
- **10.5 Materiais incompatíveis:** *Não existe mais nenhuma informação relevante disponível.*
- **10.6 Produtos de decomposição perigosos:** *Não se conhecem produtos de decomposição perigosos.*

PT

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SECÇÃO 11: Informação toxicológica

· 11.1 Informações sobre os efeitos toxicológicos

· Toxicidade aguda

Nocivo por ingestão, contacto com a pele ou inalação.

· Valores LD/LC50 relevantes para a classificação:

50-00-0 formaldeído

por via oral	LD50	>200 mg/kg (rat)
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· Efeito de irritabilidade primário:

· Corrosão/irritação cutânea

Provoca irritação cutânea.

· Lesões oculares graves/irritação ocular

Provoca irritação ocular grave.

· Sensibilização respiratória ou cutânea

Pode provocar uma reacção alérgica cutânea.

· Efeitos CMR (carcinogenicidade, mutagenicidade e efeitos tóxicos na reprodução)

· Mutagenicidade em células germinativas

Suspeito de provocar anomalias genéticas.

· Carcinogenicidade

Pode provocar cancro.

· Toxicidade reprodutiva Com base nos dados disponíveis, os critérios de classificação não são preenchidos.

· Toxicidade para órgãos-alvo específicos (STOT) - exposição única

Pode provocar irritação das vias respiratórias.

· Toxicidade para órgãos-alvo específicos (STOT) - exposição repetida

Com base nos dados disponíveis, os critérios de classificação não são preenchidos.

· Perigo de aspiração Com base nos dados disponíveis, os critérios de classificação não são preenchidos.

SECÇÃO 12: Informação ecológica

· 12.1 Toxicidade

· Toxicidade aquática: Não existe mais nenhuma informação relevante disponível.

· 12.2 Persistência e degradabilidade Não existe mais nenhuma informação relevante disponível.

· 12.3 Potencial de bioacumulação Não existe mais nenhuma informação relevante disponível.

· 12.4 Mobilidade no solo Não existe mais nenhuma informação relevante disponível.

· Outras indicações ecológicas:

· Indicações gerais:

Classe de perigo para a água 2 (D) (auto-classificação): perigoso para a água.

Não deixar chegar às águas subterrâneas, aos cursos de água nem à canalização.

Perigo de poluição da água potável mesmo se forem derramadas quantidades muito pequenas no subsolo.

· 12.5 Resultados da avaliação PBT e mPmB

· PBT: Não aplicável.

· mPmB: Não aplicável.

· 12.6 Outros efeitos adversos Não existe mais nenhuma informação relevante disponível.

SECÇÃO 13: Considerações relativas à eliminação

· 13.1 Métodos de tratamento de resíduos

· Recomendação: Não se pode eliminar juntamente com o lixo doméstico. Não permita que chegue à canalização.

· Embalagens contaminadas:

· Recomendação: Eliminação residual conforme o regulamento dos serviços públicos.

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· *Meio de limpeza recomendado:* Água, eventualmente com adição de produtos de limpeza

SECÇÃO 14: Informações relativas ao transporte

· 14.1 Número ONU

· ADR, IMDG, IATA

UN1993

· 14.2 Designação oficial de transporte da ONU

· ADR

1993 LÍQUIDO INFLAMÁVEL, N.S.A.

· IMDG, IATA

FLAMMABLE LIQUID, N.O.S.

· 14.3 Classes de perigo para efeitos de transporte

· ADR



· Classe

3 Líquidos inflamáveis

· IMDG, IATA

· Class

não aplicável

· 14.4 Grupo de embalagem

· ADR, IMDG, IATA

III

· 14.5 Perigos para o ambiente:

Não aplicável.

· 14.6 Precauções especiais para o utilizador

Atenção: Líquidos inflamáveis

· Stowage Category

A

· 14.7 Transporte a granel em conformidade com o anexo II da Convenção MARPOL e o Código IBC Não aplicável.

· Transporte/outras informações:

· ADR

· Quantidades Limitadas (LQ)

5L

· Quantidades exceptuadas (EQ)

Código: E1

Quantidade líquida máxima por embalagem interior: 30 ml

Quantidade líquida máxima por embalagem exterior: 1000 ml

· IMDG

· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· UN "Model Regulation":

UN 1993 LÍQUIDO INFLAMÁVEL, N.S.A., 3, III

PT

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SECÇÃO 15: Informação sobre regulamentação

- **15.1 Regulamentação/legislação específica para a substância ou mistura em matéria de saúde, segurança e ambiente**
- **Diretiva 2012/18/UE**
- **Substâncias perigosas designadas - ANEXO I Nenhum dos componentes se encontra listado.**
- **Regulamento (CE) n.º 1907/2006 ANEXO XVII Condições de limitação: 3, 28**
- **Disposições nacionais:**
- **Avisos para limitação da exposição no local de trabalho:**
Os trabalhadores não devem ser expostos às substâncias perigosas contidas nesta preparação que podem causar cancro. Em casos isolados os serviços públicos podem permitir excepções.
- **15.2 Avaliação da segurança química:** Não foi realizada nenhuma Avaliação de Segurança Química.

SECÇÃO 16: Outras informações

As informações fornecidas baseiam-se no estado actual dos nossos conhecimentos, embora não representem uma garantia das propriedades do produto e não fundamentam uma relação contratual.

- **Frases relevantes**
- H301 Tóxico por ingestão.
- H311 Tóxico em contacto com a pele.
- H314 Provoca queimaduras na pele e lesões oculares graves.
- H317 Pode provocar uma reacção alérgica cutânea.
- H331 Tóxico por inalação.
- H341 Suspeito de provocar anomalias genéticas.
- H350 Pode provocar cancro.
- **Abreviaturas e acrónimos:**
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 3: Toxicidade aguda – Categoria 3
- Acute Tox. 4: Toxicidade aguda – Categoria 4
- Skin Corr. 1B: Corrosão/irritação cutânea – Categoria 1B
- Skin Irrit. 2: Corrosão/irritação cutânea – Categoria 2
- Eye Irrit. 2: Lesões oculares graves/irritação ocular – Categoria 2
- Skin Sens. 1: Sensibilização cutânea – Categoria 1
- Muta. 2: Mutagenicidade em células germinativas – Categoria 2
- Carc. 1B: Carcinogenicidade – Categoria 1B
- STOT SE 3: Toxicidade para órgãos-alvo específicos (exposição única) – Categoria 3

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SECȚIUNEA 1: Identificarea substanței/amestecului și a societății/întreprinderii

- **1.1 Element de identificare a produsului**
- **Denumire comercială:** Paraformaldehide 20% Solution, EM Grade
- **Nr. articol:** 15713, 15713-SP, 15713-S
- **1.2 Utilizări relevante identificate ale substanței sau amestecului și utilizări contraindicate**
Nu există alte informații relevante.
- **Utilizarea materialului / a preparatului** Chimicale de laborator
- **1.3 Detalii privind furnizorul fișei cu date de securitate**
- **Producător/furnizor:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Informații asigurate de:** Product safety department
- **1.4 Număr de telefon care poate fi apelat în caz de urgență:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

SECȚIUNEA 2: Identificarea pericolelor

- **2.1 Clasificarea substanței sau a amestecului**
- **Clasificarea în conformitate cu Regulamentul (CE) nr. 1272/2008**



GHS08 pericol pentru sănătate

Muta. 2 H341 Susceptibil de a provoca anomalii genetice.
Carc. 1B H350 Poate provoca cancer.



GHS07

Acute Tox. 4 H302 Nociv în caz de înghițire.
Acute Tox. 4 H312 Nociv în contact cu pielea.
Acute Tox. 4 H332 Nociv în caz de inhalare.
Skin Irrit. 2 H315 Provoacă iritarea pielii.
Eye Irrit. 2 H319 Provoacă o iritare gravă a ochilor.
Skin Sens. 1 H317 Poate provoca o reacție alergică a pielii.
STOT SE 3 H335 Poate provoca iritarea căilor respiratorii.

- **2.2 Elemente pentru etichetă**
- **Etichetarea în conformitate cu Regulamentul (CE) nr. 1272/2008**
Produsul este clasificat și etichetat conform regulamentului privind clasificarea, etichetarea și ambalarea (CLP).
- **Pictograme de pericol**



GHS07



GHS08

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· **Cuvânt de avertizare** Pericol

· **Componente periculoase care determină etichetarea:**

formaldehidă

· **Fraze de pericol**

H302+H312+H332 Nociv în caz de înghițire, în contact cu pielea sau prin inhalare.

H315 Provoacă iritarea pielii.

H319 Provoacă o iritare gravă a ochilor.

H317 Poate provoca o reacție alergică a pielii.

H341 Susceptibil de a provoca anomalii genetice.

H350 Poate provoca cancer.

H335 Poate provoca iritarea căilor respiratorii.

· **Fraze de precauție**

P261 Evitați să inspirați praful/fumul/gazul/ceața/vaporii/spray-ul.

P280 Purtați mănuși de protecție/îmbrăcăminte de protecție/echipament de protecție a ochilor/ echipament de protecție a feței.

P305+P351+P338 ÎN CAZ DE CONTACT CU OCHII: clătiți cu atenție cu apă timp de mai multe minute. Scoateți lentilele de contact, dacă este cazul și dacă acest lucru se poate face cu ușurință. Continuați să clătiți.

P322 Măsuri specifice (a se vedea de pe această etichetă).

P405 A se depozita sub cheie.

P501 Aruncați conținutul/containerul în acord cu regulamentele locale/regionale/naționale/ internaționale.

· **2.3 Alte pericole**

· **Rezultatele evaluării PBT și vPvB**

· **PBT:** neaplicabil





· **vPvB:** neaplicabil

SECȚIUNEA 3: Compoziție/informații privind componenții

· **3.2 Caracterizarea chimică: Amestecuri**

· **Descriere:** Amestec format din următoarele substanțe cu aditivi nenocivi.

· **Componente periculoase:**

CAS: 50-00-0	formaldehidă	>10-≤25%
EINECS: 200-001-8	 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331;  Muta. 2, H341; Carc. 1B, H350;  Skin Corr. 1B, H314;  Skin Sens. 1, H317	

· **Indicații suplimentare:** Conținutul exact al textului în indicațiilor în caz de pericol se deduce din capitolul 16.

SECȚIUNEA 4: Măsuri de prim ajutor

· **4.1 Descrierea măsurilor de prim ajutor**

· **Indicații generale:**

Simptomele de otrăvire pot apare după multe ore, din acest motiv este necesară supravegherea atentă a unui medic pentru cel puțin 48 de ore după accident.

· **după inhalare:**

Pacientul trebuie transportat într-un loc bine aerisit și pentru orice eventualitate, trebuie cerut sfatul medicului.

In caz de leșin, pacientul trebuie ținut și transportat în poziție laterală cât mai stabilă.

· **după contactul cu pielea:** Trebuie spălat imediat cu apă și săpun, clătind din abundență.

· **după contactul cu ochii:**

Este necesară spălarea ochilor cu apă curentă timp de câteva minute, ținând pleoapele complet deschise. Dacă durerile persistă trebuie consultat medicul.

· **după înghițire:** Trebuie chemat imediat medicul.

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- **4.2 Cele mai importante simptome și efecte, atât acute, cât și întârziate** Nu există alte informații relevante.
- **4.3 Indicații privind orice fel de asistență medicală imediată și tratamentele speciale necesare**
Nu există alte informații relevante.

SECȚIUNEA 5: Măsuri de combatere a incendiilor

- **5.1 Mijloace de stingere a incendiilor**
- **Extinctorul potrivit:**
CO₂, pulbere sau apă gazoasă. Incendiile puternice trebuie stinse cu apă gazoasă sau cu spumă rezistentă la alcool.
- **5.2 Pericole speciale cauzate de substanța sau amestecul în cauză** Nu există alte informații relevante.
- **5.3 Recomandări destinate pompierilor**
- **Mijloace de protecție specifice:** Trebuie folosită masca de protecție respiratorie.

SECȚIUNEA 6: Măsuri de luat în caz de dispersie accidentală

- **6.1 Precauții personale, echipament de protecție și proceduri de urgență** Nu este necesar.
- **6.2 Precauții pentru mediul înconjurător:**
Este necesară diluarea cu multă apă.
Trebuie evitată infiltrarea în canalizare/ape de suprafață/ape freatice.
- **6.3 Metode și material pentru izolarea incendiilor și pentru curățenie:**
Lichidul trebuie restrâns cu ajutorul materialelor absorbante (nisip, făină fosilică, legătură universală, legătură de acizi, rumeguș).
Materialul contaminat trebuie eliminat ca reziduu în conformitate cu punctul 13.
Trebuie asigurată o aerisire suficientă.
- **6.4 Trimiteri către alte secțiuni**
Pentru informații cu privire la o manipulare sigură vezi capitolul 7.
Pentru informații cu privire la echipamentul de protecție de uz personal vezi capitolul 8.
Pentru informații cu privire la reziduuri vezi capitolul 13.

SECȚIUNEA 7: Manipularea și depozitarea

- **7.1 Precauții pentru manipularea în condiții de securitate**
Trebuie asigurată o bună aerisire/aspire la locul de muncă.
Rezervoarele se vor deschide și manipula cu multă atenție.
Trebuie evitată formarea de aerosol.
- **Indicații în caz de incendiu sau explozie:** Se vor pregăti aparate de protecție respiratorie.
- **7.2 Condiții de depozitare în condiții de securitate, inclusiv eventuale incompatibilități**
- **Mod de păstrare:**
- **Condiții pentru depozite și rezervoare:** Nu sînt necesare condiții speciale.
- **Indicații cu privire la stocarea mixtă:** Nu este necesar.
- **Alte indicații cu privire la condițiile de depozitare:** Rezervoarele se vor închide ermetic.
- **7.3 Utilizare finală specifică (utilizări finale specifice)** Nu există alte informații relevante.

SECȚIUNEA 8: Controale ale expunerii/protecția personală

- **Indicații suplimentare privind instalațiile tehnice:** Fără date suplimentare, a se vedea punctul 7.

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· **8.1 Parametri de control**

· **Ingredienții ale căror valori limită trebuie ținute sub control la locurile de muncă:**

50-00-0 formaldehidă

VLM (RO)	Valoare limita maxima 15 minute: 3 mg/m ³ , 2 ppm
	Valoare limita maxima 8 ore: 1,2 mg/m ³ , 1 ppm
	C2

· **Indicații suplimentare:** S-au folosit ca bază listele valabile în momentul producției.

· **8.2 Controale ale expunerii**

· **Echipament de protecție personală:**

· **Norme generale de protecție și de igienă în timpul lucrului:**

A se ține la distanță de alimente, băuturi și furaje.

A se îndepărta imediat hainele contaminate.

A se spăla mâinile înaintea pauzelor și la terminarea lucrului.

Echipamentul de protecție se va păstra separat.

A se evita contactul cu ochii și pielea.

· **Mască de protecție:**

In cazul expunerilor scurte și minime se va utiliza masca; în cazul celor mai intense și de durată se va utiliza aparatul autorespirator.

· **Protecția mâinilor:**



Mănuși de protecție

Materialul din care sunt fabricate mănușile trebuie să fie impermeabil la aer și rezistent la produs / substanță / preparat.

În absența testelor nu pot fi date recomandări privind materialul de mănuși pentru produs / preparat / amestec chimic.

Alegerea materialului pentru mănuși se va face luându-se în considerație timpul de penetrare, rata de permeabilitate și degradarea.

· **Material pentru mănuși**

Alegerea unei mănuși potrivite nu depinde numai de material, ci și de alte caracteristici de calitate și diferă de la producător la producător. Dacă produsul reprezintă un preparat din mai multe substanțe, durabilitatea materialului pentru mănuși nu poate fi probată în prealabil și de aceea trebuie controlată înainte de folosire.

· **Timp de penetrație al materialului pentru mănuși**

Timpul exact de penetrare trebuie aflat și respectat de către fabricantul mănușilor de protecție.

· **Protecția ochilor:**



Ochelari de protecție bine închiși.

SECȚIUNEA 9: Proprietățile fizice și chimice

· **9.1 Informații privind proprietățile fizice și chimice de bază**

· **Indicații generale**

· **Aspect:**

Formă:

Lichid

Culoare:

deschis

· **Miros:**

caracteristic

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· Pragul de acceptare a mirosului:	Nedefinit.
· Valoare pH:	Nedefinit.
· Schimbare de stare de agregare Punctul de topire/punctul de înghețare:	nedefinit
Punctul inițial de fierbere și intervalul de fierbere:	>93 °C
· Punctul de aprindere:	>60 °C
· Inflamabilitatea (solid, gaz):	neaplicabil
· Temperatură de aprindere:	300 °C
· Temperatura de descompunere:	Nedefinit.
· Temperatura de autoaprindere:	Produsul nu este autoinflamabil.
· Proprietăți explozive:	Nedefinit.
· Limite de inflamabilitate: inferioară:	7 Vol %
superioară:	73 Vol %
· Presiunea de vapori la 20 °C:	23 hPa
· Densitate la 20 °C:	0,962 g/cm ³
· Densitatea relativă:	Nedefinit.
· Densitatea vaporilor:	Nedefinit.
· Viteza de evaporare	Nedefinit.
· Solubil în / amestecabil cu: Apa:	se amestecă complet
· Coeficientul de partiție: n-octanol/apă:	Nedefinit.
· Vâscozitatea: dinamică:	Nedefinit.
cinematică:	Nedefinit.
· Nivelul solventului: Solvent organic:	20,0 %
Apă:	80,0 %
VOC (EC)	20,00 %
· Conținut solid:	0,0 %
· 9.2 Alte informații	Nu există alte informații relevante.

SECȚIUNEA 10: Stabilitate și reactivitate

- 10.1 Reactivitate Nu există alte informații relevante.
- 10.2 Stabilitate chimică
- Descompunere termică/ condiții de evitat: Produsul nu se descompune dacă este folosit conform normelor.
- 10.3 Posibilitatea de reacții periculoase Nu se cunosc reacții periculoase.
- 10.4 Condiții de evitat Nu există alte informații relevante.
- 10.5 Materiale incompatibile: Nu există alte informații relevante.
- 10.6 Produși de descompunere periculoși: Nu sînt cunoscuți produși de descompunere periculoși.

RO

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SECȚIUNEA 11: Informații toxicologice

· **11.1 Informații privind efectele toxicologice**

· **Toxicitate acută**

Nociv în caz de înghițire, în contact cu pielea sau prin inhalare.

· **Valori LD/LC50 relevante pentru clasificare:**

50-00-0 formaldehidă

Oral	LD50	>200 mg/kg (rat)
------	------	------------------

· **Iritabilitate primară:**

· **Corodarea/iritarea pielii**

Provoacă iritarea pielii.

· **Lezarea gravă/iritarea ochilor**

Provoacă o iritare gravă a ochilor.

· **Sensibilizarea căilor respiratorii sau a pielii**

Poate provoca o reacție alergică a pielii.

· **Informații cu privire la următoarele grupe de efecte posibile:**

· **Efecte CMR (efect cancerigen, mutagen și toxic pentru reproducere)**

· **Mutagenitatea celulelor germinative**

Susceptibil de a provoca anomalii genetice.

· **Cancerogenitatea**

Poate provoca cancer.

· **Toxicitatea pentru reproducere** Pe baza datelor disponibile, criteriile de clasificare nu sunt îndeplinite.

· **STOT (toxicitate asupra organelor țintă specifice) – expunere unică**

Poate provoca iritarea căilor respiratorii.

· **STOT (toxicitate asupra organelor țintă specifice) – expunere repetată**

Pe baza datelor disponibile, criteriile de clasificare nu sunt îndeplinite.

· **Pericol prin aspirare** Pe baza datelor disponibile, criteriile de clasificare nu sunt îndeplinite.

SECȚIUNEA 12: Informații ecologice

· **12.1 Toxicitate**

· **Toxicitate acvatică:** Nu există alte informații relevante.

· **12.2 Persistență și degradabilitate** Nu există alte informații relevante.

· **12.3 Potențial de bioacumulare** Nu există alte informații relevante.

· **12.4 Mobilitate în sol** Nu există alte informații relevante.

· **Alte indicații ecologice:**

· **Indicații generale:**

Clasa de pericol pentru ape 2 (Autoclasificare): periculos

A nu se infiltra în apele freatiche, în rețeaua de apă sau în canalizare.

Pericol pentru apele potabile chiar în cazul scurgerii unei mici cantități de produs în subsol.

· **12.5 Rezultatele evaluării PBT și vPvB**

· **PBT:** neaplicabil

· **vPvB:** neaplicabil

· **12.6 Alte efecte adverse** Nu există alte informații relevante.

SECȚIUNEA 13: Considerații privind eliminarea

· **13.1 Metode de tratare a deșeurilor**

· **Recomandare:**

Produsul nu se va îndepărta împreună cu resturile menajere. Se va evita pătrunderea în canalizare.

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- **Ambalaje impure:**
- **Recomandare:** Eliminarea reziduurilor conform dispozițiilor administrative.
- **Detergent recomandat:** Apă, eventual cu adăugare de detergent.

SECȚIUNEA 14: Informații referitoare la transport

· 14.1 Nr. UN: · ADR, IMDG, IATA	UN1993
· 14.2 Denumirea corectă ONU pentru expediție · ADR · IMDG, IATA	1993 LICHID INFLAMABIL, N.S.A. FLAMMABLE LIQUID, N.O.S.
· 14.3 Clasa (clasele) de pericol pentru transport · ADR	
	
· Clasa	3 Substanțe lichide inflamabile
· IMDG, IATA · Class	nu apare
· 14.4 Grup de ambalaj: · ADR, IMDG, IATA	III
· 14.5 Pericole pentru mediul înconjurător:	neaplicabil
· 14.6 Precauții speciale pentru utilizatori · Stowage Category	Atenție: Substanțe lichide inflamabile A
· 14.7 Transport în vrac, în conformitate cu anexa II la Convenția MARPOL și cu Codul IBC	neaplicabil
· Transport/alte informații:	
· ADR · Cantități limitate / cantități limitate (LQ) · Cantități exceptate (EQ)	5L Cod: E1 Cantitatea maximă netă per ambalaj interior: 30 ml Cantitatea maximă netă per ambalaj exterior: 1000 ml
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 1993 LICHID INFLAMABIL, N.S.A., 3, III

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(Continuare pe pagina 8)

**Fișa cu date de securitate
conform (CE) 1907/2006, Articolul 31**

Tipărită la: 31.10.2018

data de actualizare: 31.10.2018

Denumire comercială: Paraformaldehyde 20% Solution, EM Grade

(Continuare pe pagina 7)

SECȚIUNEA 15: Informații de reglementare

- **15.1 Regulamente/legislație în domeniul securității, sănătății și al mediului specifice (specifică) pentru substanța sau amestecul în cauză**
- **Directiva 2012/18/UE**
- **Denumirea substanțelor periculoase - ANEXA I** nici una dintre substanțele conținute nu este consemnată
- **REGULAMENTUL (CE) NR. 1907/2006 ANEXA XVII** Condiții de restricționare: 3, 28
- **Regulamente naționale:**
- **Indicații privind limitarea activității:**
Personalul nu se va expune la substanțele cancerigene conținute în acest produs. Autoritățile pot aproba în anumite cazuri excepții.
- **15.2 Evaluarea securității chimice:** Nu a fost efectuată o evaluare a securității chimice.

SECȚIUNEA 16: Alte informații

Datele au fost raportate pe baza cunoștințelor noastre actuale, nu reprezintă totuși nici o garanție pentru caracteristicile produsului și nu motivează nici un raport juridic contractual.

- **principiile relevante**
H301 Toxic în caz de înghițire.
H311 Toxic în contact cu pielea.
H314 Provoacă arsuri grave ale pielii și lezarea ochilor.
H317 Poate provoca o reacție alergică a pielii.
H331 Toxic în caz de inhalare.
H341 Susceptibil de a provoca anomalii genetice.
H350 Poate provoca cancer.
- **Abrevieri și acronime:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 3: Toxicitate acută – Categoria 3
Acute Tox. 4: Toxicitate acută – Categoria 4
Skin Corr. 1B: Corodarea/iritarea pielii – Categoria 1B
Skin Irrit. 2: Corodarea/iritarea pielii – Categoria 2
Eye Irrit. 2: Lezarea gravă a ochilor/iritarea ochilor – Categoria 2
Skin Sens. 1: Sensibilizarea pielii – Categoria 1
Muta. 2: Mutagenitatea celulelor embrionare – Categoria 2
Carc. 1B: Cancerigenitate – Categoria 1B
STOT SE 3: Toxicitate asupra unui organ țintă specific (o singură expunere) – Categoria 3

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 31.10.2018

Revisión: 31.10.2018

SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

· 1.1 Identificador del producto

· **Nombre comercial:** *Paraformaldehyde 20% Solution, EM Grade*

· **Número del artículo:** *15713, 15713-SP, 15713-S*

· **1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados**
No existen más datos relevantes disponibles.

· **Utilización del producto / de la elaboración** *Sustancias químicas de laboratorio*

· 1.3 Datos del proveedor de la ficha de datos de seguridad

· **Fabricante/distribuidor:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

Tel: 215-412-8400 Fax: 215-412-8450

email: sgkcck@aol.com

www.emsdiasum.com

Aname

C/ Perez Galdos no. 2

28693 Quijorna

Madrid, Spain

Tel: +34.91.816.89.50

Fax: +34.91.816.85.94

email: ventas@aname.es

· **Área de información:** *Product safety department*

· 1.4 Teléfono de emergencia:

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

SECCIÓN 2: Identificación de los peligros

· 2.1 Clasificación de la sustancia o de la mezcla

· **Clasificación con arreglo al Reglamento (CE) n° 1272/2008**



GHS08 peligro para la salud

Muta. 2 H341 Se sospecha que provoca defectos genéticos.

Carc. 1B H350 Puede provocar cáncer.



GHS07

Acute Tox. 4 H302 Nocivo en caso de ingestión.

Acute Tox. 4 H312 Nocivo en contacto con la piel.

Acute Tox. 4 H332 Nocivo en caso de inhalación.

Skin Irrit. 2 H315 Provoca irritación cutánea.

Eye Irrit. 2 H319 Provoca irritación ocular grave.

Skin Sens. 1 H317 Puede provocar una reacción alérgica en la piel.

STOT SE 3 H335 Puede irritar las vías respiratorias.

· 2.2 Elementos de la etiqueta

· **Etiquetado con arreglo al Reglamento (CE) n° 1272/2008**

El producto se ha clasificado y etiquetado de conformidad con el reglamento CLP.

(se continua en página 2)

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· **Pictogramas de peligro**



GHS07 GHS08

· **Palabra de advertencia Peligro**

· **Componentes peligrosos a indicar en el etiquetaje:**

formaldehído

· **Indicaciones de peligro**

H302+H312+H332 Nocivo en caso de ingestión, contacto con la piel o inhalación.

H315 Provoca irritación cutánea.

H319 Provoca irritación ocular grave.

H317 Puede provocar una reacción alérgica en la piel.

H341 Se sospecha que provoca defectos genéticos.

H350 Puede provocar cáncer.

H335 Puede irritar las vías respiratorias.

· **Consejos de prudencia**

P261 Evitar respirar el polvo/el humo/el gas/la niebla/los vapores/el aerosol.

P280 Llevar guantes/prendas/gafas/máscara de protección.

P305+P351+P338 **EN CASO DE CONTACTO CON LOS OJOS: Aclarar cuidadosamente con agua durante varios minutos. Quitar las lentes de contacto, si lleva y resulta fácil. Seguir aclarando.**

P322 Se necesitan medidas específicas (ver en esta etiqueta).

P405 Guardar bajo llave.

P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.

· **2.3 Otros peligros**

· **Resultados de la valoración PBT y mPmB**

· **PBT:** No aplicable.

· **mPmB:** No aplicable.

SECCIÓN 3: Composición/información sobre los componentes

· **3.2 Caracterización química: Mezclas**

· **Descripción:** Mezcla formada por las sustancias especificadas a continuación con adiciones no peligrosas.

· **Componentes peligrosos:**

CAS: 50-00-0	formaldehído	>10-≤25%
EINECS: 200-001-8	⚠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; ⚠ Muta. 2, H341; Carc. 1B, H350; ⚠ Skin Corr. 1B, H314; ⚠ Skin Sens. 1, H317	

· **Indicaciones adicionales:** El texto de los posibles riesgos aquí indicados se puede consultar en el capítulo 16.

SECCIÓN 4: Primeros auxilios

· **4.1 Descripción de los primeros auxilios**

· **Instrucciones generales:**

Los síntomas de intoxicación pueden presentarse después de muchas horas, por lo que se requiere una supervisión médica durante un mínimo de 48 horas después del accidente.

· **En caso de inhalación del producto:**

Suministrar suficiente aire fresco y, para mayor seguridad, consultar el médico.

Las personas desmayadas deben tenderse y transportarse de lado con la suficiente estabilidad.

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- **En caso de contacto con la piel:** Lavar inmediatamente con agua y jabón y enjuagar bien.
- **En caso de con los ojos:**
Limpiar los ojos abiertos durante varios minutos con agua corriente. En caso de trastornos persistentes consultar un médico.
- **En caso de ingestión:** Consultar inmediatamente un médico.
- **4.2 Principales síntomas y efectos, agudos y retardados** No existen más datos relevantes disponibles.
- **4.3 Indicación de toda atención médica y de los tratamientos especiales que deban dispensarse inmediatamente**
No existen más datos relevantes disponibles.

SECCIÓN 5: Medidas de lucha contra incendios

- **5.1 Medios de extinción**
- **Sustancias extintoras apropiadas:**
CO₂, polvo extintor o chorro de agua rociada. Combatir incendios mayores con chorro de agua rociada o espuma resistente al alcohol.
- **5.2 Peligros específicos derivados de la sustancia o la mezcla** No existen más datos relevantes disponibles.
- **5.3 Recomendaciones para el personal de lucha contra incendios**
- **Equipo especial de protección:** Colocarse la protección respiratoria.

SECCIÓN 6: Medidas en caso de vertido accidental

- **6.1 Precauciones personales, equipo de protección y procedimientos de emergencia** No es necesario.
- **6.2 Precauciones relativas al medio ambiente:**
Diluir con mucha agua.
Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.
- **6.3 Métodos y material de contención y de limpieza:**
Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín).
Desechar el material contaminado como vertido según ítem 13.
Asegurar suficiente ventilación.
- **6.4 Referencia a otras secciones**
Ver capítulo 7 para mayor información sobre una manipulación segura.
Ver capítulo 8 para mayor información sobre el equipo personal de protección.
Para mayor información sobre cómo desechar el producto, ver capítulo 13.

SECCIÓN 7: Manipulación y almacenamiento

- **7.1 Precauciones para una manipulación segura**
Asegurar suficiente ventilación /aspiración en el puesto de trabajo.
Abrir y manejar el recipiente con cuidado.
Evitar la formación de aerosoles.
- **Prevención de incendios y explosiones:** Tener preparados los aparatos respiratorios.
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
- **Exigencias con respecto al almacén y los recipientes:** No se requieren medidas especiales.
- **Normas en caso de un almacenamiento conjunto:** No es necesario.
- **Indicaciones adicionales sobre las condiciones de almacenamiento:**
Mantener el recipiente cerrado herméticamente.
- **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

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SECCIÓN 8: Controles de exposición/protección individual

· **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**

Sin datos adicionales, ver punto 7.

· **8.1 Parámetros de control**

· **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:**

50-00-0 formaldehído

LEP	Valor de corta duración: 0,74 mg/m ³ , 0,6 ppm Valor de larga duración: 0,37 mg/m ³ , 0,3 ppm CIB, Sen, s
-----	---

· **Indicaciones adicionales:** Como base se han utilizado las listas vigentes en el momento de la elaboración.

· **8.2 Controles de la exposición**

· **Equipo de protección individual:**

· **Medidas generales de protección e higiene:**

Mantener alejado de alimentos, bebidas y alimentos para animales.

Quitarse de inmediato la ropa ensuciada o impregnada.

Lavarse las manos antes de las pausas y al final del trabajo.

Guardar la ropa protectora por separado.

Evitar el contacto con los ojos y la piel.

· **Protección respiratoria:**

Si la exposición va a ser breve o de poca intensidad, colocarse una máscara respiratoria. Para una exposición más intensa o de mayor duración, usar un aparato de respiración autónomo.

· **Protección de manos:**



Guantes de protección

El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.

Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.

Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

· **Material de los guantes**

La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro. Teniendo en cuenta que el producto está fabricado a partir de diferentes materiales, su calidad no puede ser evaluada de antemano, de modo que los guantes deberán ser controlados antes de su utilización.

· **Tiempo de penetración del material de los guantes**

El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

· **Protección de ojos:**



Gafas de protección herméticas

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SECCIÓN 9: Propiedades físicas y químicas

· 9.1 Información sobre propiedades físicas y químicas básicas

· Datos generales

· Aspecto:

Forma: Líquido

Color: Claro

· Olor: Característico

· Umbral olfativo: No determinado.

· valor pH: No determinado.

· Cambio de estado

Punto de fusión/punto de congelación: Indeterminado.

Punto inicial de ebullición e intervalo de ebullición: >93 °C

· Punto de inflamación: >60 °C

· Inflamabilidad (sólido, gas): No aplicable.

· Temperatura de ignición: 300 °C

· Temperatura de descomposición: No determinado.

· Temperatura de auto-inflamación: El producto no es autoinflamable.

· Propiedades explosivas: No determinado.

· Límites de explosión:

Inferior: 7 Vol %

Superior: 73 Vol %

· Presión de vapor a 20 °C: 23 hPa

· Densidad a 20 °C: 0,962 g/cm³

· Densidad relativa: No determinado.

· Densidad de vapor: No determinado.

· Tasa de evaporación: No determinado.

· Solubilidad en / miscibilidad con agua: Completamente mezclable.

· Coeficiente de reparto: n-octanol/agua: No determinado.

· Viscosidad:

Dinámica: No determinado.

Cinemática: No determinado.

· Concentración del disolvente:

Disolventes orgánicos: 20,0 %

Agua: 80,0 %

VOC (CE) 20,00 %

Contenido de cuerpos sólidos: 0,0 %

· 9.2 Otros datos: No existen más datos relevantes disponibles.

SECCIÓN 10: Estabilidad y reactividad

· 10.1 Reactividad: No existen más datos relevantes disponibles.

· 10.2 Estabilidad química

· Descomposición térmica / condiciones que deben evitarse: No se descompone al emplearse adecuadamente.

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Ficha de datos de seguridad

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- **10.3 Posibilidad de reacciones peligrosas** No se conocen reacciones peligrosas.
- **10.4 Condiciones que deben evitarse** No existen más datos relevantes disponibles.
- **10.5 Materiales incompatibles:** No existen más datos relevantes disponibles.
- **10.6 Productos de descomposición peligrosos:** No se conocen productos de descomposición peligrosos.

SECCIÓN 11: Información toxicológica

- **11.1 Información sobre los efectos toxicológicos**
- **Toxicidad aguda**
Nocivo en caso de ingestión, contacto con la piel o inhalación.

- **Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:**

50-00-0 formaldehído

Oral	LD50	>200 mg/kg (rat)
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- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas**
Provoca irritación cutánea.
- **Lesiones o irritación ocular graves**
Provoca irritación ocular grave.
- **Sensibilización respiratoria o cutánea**
Puede provocar una reacción alérgica en la piel.
- **Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)**
- **Mutagenicidad en células germinales**
Se sospecha que provoca defectos genéticos.
- **Carcinogenicidad**
Puede provocar cáncer.
- **Toxicidad para la reproducción** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Toxicidad específica en determinados órganos (STOT) – exposición única**
Puede irritar las vías respiratorias.
- **Toxicidad específica en determinados órganos (STOT) – exposición repetida**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Peligro de aspiración** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

SECCIÓN 12: Información ecológica

- **12.1 Toxicidad**
- **Toxicidad acuática:** No existen más datos relevantes disponibles.
- **12.2 Persistencia y degradabilidad** No existen más datos relevantes disponibles.
- **12.3 Potencial de bioacumulación** No existen más datos relevantes disponibles.
- **12.4 Movilidad en el suelo** No existen más datos relevantes disponibles.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**
Nivel de riesgo para el agua 2 (autoclasiificación): peligroso para el agua
No dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados.
Una cantidad mínima vertida en el subsuelo ya representa un peligro para el agua potable.
- **12.5 Resultados de la valoración PBT y mPmB**
- **PBT:** No aplicable.
- **mPmB:** No aplicable.
- **12.6 Otros efectos adversos** No existen más datos relevantes disponibles.

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SECCIÓN 13: Consideraciones relativas a la eliminación

- 13.1 Métodos para el tratamiento de residuos
- **Recomendación:** No debe desecharse con la basura doméstica. No debe llegar al alcantarillado.
- **Embalajes sin limpiar:**
- **Recomendación:** Eliminar conforme a las disposiciones oficiales.
- **Producto de limpieza recomendado:** Agua, eventualmente añadiendo productos de limpieza.

SECCIÓN 14: Información relativa al transporte

· 14.1 Número ONU	UN1993
· ADR, IMDG, IATA	
· 14.2 Designación oficial de transporte de las Naciones Unidas	
· ADR	1993 LÍQUIDO INFLAMABLE, N.E.P.
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S.
· 14.3 Clase(s) de peligro para el transporte	
· ADR	
	
· Clase	3 Líquidos inflamables
· IMDG, IATA	
· Class	suprimido
· 14.4 Grupo de embalaje	
· ADR, IMDG, IATA	III
· 14.5 Peligros para el medio ambiente:	No aplicable.
· 14.6 Precauciones particulares para los usuarios	Atención: Líquidos inflamables
· Stowage Category	A
· 14.7 Transporte a granel con arreglo al anexo II del Convenio MARPOL y el Código IBC	No aplicable.
· Transporte/datos adicionales:	
· ADR	
· Cantidades limitadas (LQ)	5L
· Cantidades exceptuadas (EQ)	Código: E1 Cantidad neta máxima por envase interior: 30 ml Cantidad neta máxima por embalaje exterior: 1000 ml
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

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· **"Reglamentación Modelo" de la UNECE:** UN 1993 LÍQUIDO INFLAMABLE, N.E.P., 3, III

SECCIÓN 15: Información reglamentaria

- **15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**
- **Directiva 2012/18/UE**
- **Sustancias peligrosas nominadas - ANEXO I** ninguno de los componentes está incluido en una lista
- **REGLAMENTO (CE) n° 1907/2006 ANEXO XVII** Restricciones: 3, 28
- **Disposiciones nacionales:**
- **Indicaciones sobre las limitaciones de trabajo:**
Los empleados no deben exponerse a las sustancias cancerígenas contenidas en el producto. En casos aislados las autoridades pueden hacer excepciones.
- **15.2 Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

- **Frases relevantes**

H301 Tóxico en caso de ingestión.

H311 Tóxico en contacto con la piel.

H314 Provoca quemaduras graves en la piel y lesiones oculares graves.

H317 Puede provocar una reacción alérgica en la piel.

H331 Tóxico en caso de inhalación.

H341 Se sospecha que provoca defectos genéticos.

H350 Puede provocar cáncer.

- **Abreviaturas y acrónimos:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 3: Toxicidad aguda – Categoría 3

Acute Tox. 4: Toxicidad aguda – Categoría 4

Skin Corr. 1B: Corrosión o irritación cutáneas – Categoría 1B

Skin Irrit. 2: Corrosión o irritación cutáneas – Categoría 2

Eye Irrit. 2: Lesiones oculares graves o irritación ocular – Categoría 2

Skin Sens. 1: Sensibilización cutánea – Categoría 1

Muta. 2: Mutagenicidad en células germinales – Categoría 2

Carc. 1B: Carcinogenicidad – Categoría 1B

STOT SE 3: Toxicidad específica en determinados órganos (exposición única) – Categoría 3

Säkerhetsdatablad

Enligt 1907/2006/EG, Artikel 31

Datum för utskrift: 31.10.2018

Omarbetad: 31.10.2018

AVSNITT 1: Namnet på ämnet/blandningen och bolaget/företaget

- **1.1 Produktbeteckning**
- **Handelsnamn:** *Paraformaldehyde 20% Solution, EM Grade*
- **Artikelnummer:** 15713, 15713-SP, 15713-S
- **1.2 Relevanta identifierade användningar av ämnet eller blandningen och användningar som det avråds från**
Ingen ytterligare relevant information finns till förfogande.
- **Ämnets användning / tillredningen** *Laboratoriekemikalier*
- **1.3 Närmare upplysningar om den som tillhandahåller säkerhetsdatablad**
- **Tillverkare/leverantör:**
*Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com*
- **Område där upplysningar kan inhämtas:** *Product safety department*
- **1.4 Telefonnummer för nödsituationer:**
*ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887*

AVSNITT 2: Farliga egenskaper

- **2.1 Klassificering av ämnet eller blandningen**
- **Klassificering enligt förordning (EG) nr 1272/2008**



GHS08 hälsofara

Muta. 2 H341 Misstänks kunna orsaka genetiska defekter.
Carc. 1B H350 Kan orsaka cancer.



GHS07

Acute Tox. 4 H302 Skadligt vid förtäring.
Acute Tox. 4 H312 Skadligt vid hudkontakt.
Acute Tox. 4 H332 Skadligt vid inandning.
Skin Irrit. 2 H315 Irriterar huden.
Eye Irrit. 2 H319 Orsakar allvarlig ögonirritation.
Skin Sens. 1 H317 Kan orsaka allergisk hudreaktion.
STOT SE 3 H335 Kan orsaka irritation i luftvägarna.

- **2.2 Märkningsuppgifter**
- **Märkning enligt förordning (EG) nr 1272/2008** *Produkten är klassificerad och märkt enligt CLP-förordningen.*
- **Faropiktogram**



GHS07 GHS08

- **Signalord Fara**

(Fortsättning på sida 2)

Säkerhetsdatablad

Enligt 1907/2006/EG, Artikel 31

Datum för utskrift: 31.10.2018

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Handelsnamn: Paraformaldehyde 20% Solution, EM Grade

(Fortsättning från sida 1)

- **Riskbestämmande komponenter för etikettering:**

formaldehyd

- **Faroangivelser**

H302+H312+H332 Skadligt vid förtäring, hudkontakt eller inandning.

H315 Irriterar huden.

H319 Orsakar allvarlig ögonirritation.

H317 Kan orsaka allergisk hudreaktion.

H341 Misstänks kunna orsaka genetiska defekter.

H350 Kan orsaka cancer.

H335 Kan orsaka irritation i luftvägarna.

- **Skyddsangivelser**

P261 Undvik att inandas damm/rök/gaser/dimma/ångor/sprej.

P280 Använd skyddshandskar/skyddskläder/ögonskydd/ansiktsskydd.

P305+P351+P338 VID KONTAKT MED ÖGONEN: Skölj försiktigt med vatten i flera minuter. Ta ur eventuella kontaktlinser om det går lätt. Fortsätt att skölja.

P322 Särskilda åtgärder (se på etiketten).

P405 Förvaras inlåst.

P501 Innehållet / behållaren avfallshanteras enligt lokala / regionala / nationella / internationella föreskrifter.

- **2.3 Andra faror**

- **Resultat av PBT- och vPvB-bedömningen**

- **PBT:** Ej användbar.








- **vPvB:** Ej användbar.

AVSNITT 3: Sammansättning/information om beståndsdelar

- **3.2 Kemisk karakterisering: Blandningar**

- **Beskrivning:** Blandning bestående av nedan upplistade ämnen med ofarliga tillsatser.

- **Farliga ingredienser:**

CAS: 50-00-0	formaldehyd	>10-≤25%
EINECS: 200-001-8	 Acute Tox. 3, H301;  Acute Tox. 3, H311;  Acute Tox. 3, H331;  Muta. 2, H341;  Carc. 1B, H350;  Skin Corr. 1B, H314;  Skin Sens. 1, H317	

- **Ytterligare hänvisningar:** De angivna farohänvisningarnas ordalydelse framgår av kapitel 16.

AVSNITT 4: Åtgärder vid första hjälpen

- **4.1 Beskrivning av åtgärder vid första hjälpen**

- **Allmänna hänvisningar:**

Förgiftningssymptom kan uppträda först efter många timmar. Av denna anledning krävs läkarövervakning i minst 48 timmar efter ett olycksfall.

- **Vid inandning:**

Riklig tillförsel av friskluft, kontakta läkare för säkerhets skull.

Vid medvetslöshet lägg och transportera patient stabilt i framstupa sidoläge.

- **Vid kontakt med huden:** Tvätta omedelbart med vatten och tvål och spola därefter noggrant.

- **Vid kontakt med ögonen:**

Spola ögonen öppna i flera minuter under rinnande vatten. Om besvär kvarstår, kontakta läkare.

- **Vid förtäring:** Kontakta läkare omedelbart.

- **4.2 De viktigaste symptomen och effekterna, både akuta och fördröjda**

Ingen ytterligare relevant information finns till förfogande.

(Fortsättning på sida 3)

Säkerhetsdatablad

Enligt 1907/2006/EG, Artikel 31

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(Fortsättning från sida 2)

- **4.3 Angivande av omedelbar medicinsk behandling och särskild behandling som eventuellt krävs**
Ingen ytterligare relevant information finns till förfogande.

AVSNITT 5: Brandbekämpningsåtgärder

- **5.1 Släckmedel**
- **Lämpliga släckningsmedel:**
CO₂, släckningspulver eller spridd vattenstråle. Större bränder skall bekämpas med spridd vattenstråle eller alkoholbeständigt skum.
- **5.2 Särskilda faror som ämnet eller blandningen kan medföra**
Ingen ytterligare relevant information finns till förfogande.
- **5.3 Råd till brandbekämpningspersonal**
- **Speciell skyddsutrustning:** Använd andningsskyddsutrustning.

AVSNITT 6: Åtgärder vid oavsiktliga utsläpp

- **6.1 Personliga skyddsåtgärder, skyddsutrustning och åtgärder vid nödsituationer** Erfordras ej.
- **6.2 Miljöskyddsåtgärder:**
Blanda ut med mycket vatten.
Förhindra produkten att tränga ner i avloppsnät/ytvatten/grundvatten.
- **6.3 Metoder och material för inneslutning och sanering:**
Sug upp med vätskebindande material (sand, kiselgur, syrabindemedel, universalbindemedel, sågspån).
Omhändertat förorenat material som avfall enligt punkt 13.
Se till att ventilationen är tillräcklig.
- **6.4 Hänvisning till andra avsnitt**
Information beträffande säker hantering se kapitel 7.
Information beträffande personlig skyddsutrustning se kapitel 8.
Information beträffande avfallshantering se kapitel 13.

AVSNITT 7: Hantering och lagring

- **7.1 Försiktighetsmått för säker hantering**
Sörj för god ventilation/utsug på arbetsplatsen.
Öppna behållaren försiktigt och hantera den varsamt.
Undvik bildning av aerosol.
- **Hänvisningar beträffande brand- och explosionskydd:** Håll andningsskyddsutrustning i beredskap.
- **7.2 Förhållanden för säker lagring, inklusive eventuell oförenlighet**
- **Lagring:**
- **Krav på lagerutrymmen och behållare:** Inga speciella krav.
- **Hänvisningar beträffande sammanlagring:** Erfordras ej.
- **Ytterligare uppgifter till lagringsvillkoren:** Förvara behållaren tätt tillsluten.
- **7.3 Specifik slutanvändning** Ingen ytterligare relevant information finns till förfogande.

AVSNITT 8: Begränsning av exponeringen/personligt skydd

- **Ytterligare hänvisningar beträffande utformning av tekniska anläggningar:** Inga övriga uppgifter, se punkt 7.

(Fortsättning på sida 4)

Säkerhetsdatablad

Enligt 1907/2006/EG, Artikel 31

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(Fortsättning från sida 3)

· 8.1 Kontrollparametrar**· Ämnen med yrkeshygieniska gränsvärden som bör övervakas:****50-00-0 formaldehyd**

OEL	Korttidsvärde: 0,74 mg/m ³ , 0,6 ppm Nivågränsvärde: 0,37 mg/m ³ , 0,3 ppm C, H, S
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· Ytterligare hänvisningar: De vid framställningen gällande listorna har använts som utgångspunkt.**· 8.2 Begränsning av exponeringen****· Personlig skyddsutrustning:****· Allmänna skydds- och hygienåtgärder:**

Undvik kontakt med livsmedel, drycker och fodermedel.

Nedsmutsade, indränkta klädesplagg skall omedelbart tas av.

Tvätta händerna före raster och efter arbetet.

Skyddsdräkter förvaras separat.

Undvik kontakt med ögonen och huden.

· Andningsskydd:

Vid kortvarig eller ringa belastning - använd andningsfilterutrustning; vid intensiv resp. längre exponering - använd andningsskyddsutrustning som är oberoende av omgivningsluften.

· Handskydd:

Skyddshandskar

Handskmaterialet måste vara tätt och beständigt mot produkt/ämne/tillredning.

Handskmaterialrekommendationer kan inte ges för produkt/tillredning/kemikalielösning, då inga tester genomförts.

Val av handskmaterial beaktande penetrationstider, permeationskvoter och degradation.

· Handskmaterial

Val av lämplig handske är inte enbart beroende av material utan även av andra kvalitetskriterier och varierar från en tillverkare till nästa. Då produkten bereds av flera material, kan handskmaterialets beständighet inte förutses och måste därför kontrolleras före användningen.

· Handskmaterialets penetreringstid

Exakt penetrationstid fastställs av skyddshandskarnas tillverkare och skall beaktas.

· Ögonskydd:

Tättslutande skyddsglasögon

AVSNITT 9: Fysikaliska och kemiska egenskaper**· 9.1 Information om grundläggande fysikaliska och kemiska egenskaper****· Allmänna uppgifter****· Utseende:****Form:** Vätska**Färg:** Klar**· Lukt:** Karakteristisk**· Luktröskel:** Ej bestämd.

(Fortsättning på sida 5)

Säkerhetsdatablad

Enligt 1907/2006/EG, Artikel 31

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(Fortsättning från sida 4)

· pH-värde:	Ej bestämd.
· Tillståndsändring Smältpunkt/frys punkt:	Ej bestämd.
Initial kokpunkt och kokpunktsintervall:	>93 °C
· Flampunkt:	>60 °C
· Brandfarlighet (fast form, gas):	Ej användbar.
· Tändtemperatur:	300 °C
· Sönderfallstemperatur:	Ej bestämd.
· Självantändningstemperatur:	Produkten är ej självantändande.
· Explosiva egenskaper:	Ej bestämd.
· Explosionsgränser: Nedre:	7 Vol %
Övre:	73 Vol %
· Ångtryck vid 20 °C:	23 hPa
· Densitet vid 20 °C:	0,962 g/cm ³
· Relativ densitet	Ej bestämd.
· Ångdensitet	Ej bestämd.
· Avdunstningshastighet:	Ej bestämd.
· Löslighet i / blandbarhet med Vatten:	Fullständigt blandbar.
· Fördelningskoefficient: n-oktanol/vatten:	Ej bestämd.
· Viskositet: Dynamisk:	Ej bestämd.
Kinematisk:	Ej bestämd.
· Lösningsmedelhalt: Organiska lösningsmedel:	20,0 %
Vatten:	80,0 %
VOC (EG)	20,00 %
· Andel av fasta partiklar:	0,0 %
· 9.2 Annan information	Ingen ytterligare relevant information finns till förfogande.

AVSNITT 10: Stabilitet och reaktivitet

- **10.1 Reaktivitet** Ingen ytterligare relevant information finns till förfogande.
- **10.2 Kemisk stabilitet**
- **Termisk sönderdelning / förhållanden som bör undvikas:** Inget sönderfall vid ändamålsenlig användning.
- **10.3 Risken för farliga reaktioner** Inga farliga reaktioner kända.
- **10.4 Förhållanden som ska undvikas** Ingen ytterligare relevant information finns till förfogande.
- **10.5 Oförenliga material:** Ingen ytterligare relevant information finns till förfogande.
- **10.6 Farliga sönderdelningsprodukter:** Inga farliga sönderfallsprodukter kända.

SE

(Fortsättning på sida 6)

Säkerhetsdatablad

Enligt 1907/2006/EG, Artikel 31

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Omarbetad: 31.10.2018

Handelsnamn: Paraformaldehyde 20% Solution, EM Grade

(Fortsättning från sida 5)

AVSNITT 11: Toxikologisk information

- **11.1 Information om de toxikologiska effekterna**
- **Akut toxicitet**
Skadligt vid förtäring, hudkontakt eller inandning.

- **Klassificeringsrelevanta LD/LC50-värden:**

50-00-0 formaldehyd

Oral	LD50	>200 mg/kg (rat)
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- **Primär retningseffekt:**
- **Frätande/irriterande på huden**
Irriterar huden.
- **Allvarlig ögonskada/ögonirritation**
Orsakar allvarlig ögonirritation.
- **Luftvägs-/hudsensibilisering**
Kan orsaka allergisk hudreaktion.
- **CMR-effekter (cancerframkallande, mutagena och reproduktionstoxiska egenskaper)**
- **Mutagenitet i könsceller**
Misstänks kunna orsaka genetiska defekter.
- **Cancerogenitet**
Kan orsaka cancer.
- **Reproduktionstoxicitet**
Kriterierna för klassificering kan på grundval av tillgängliga data inte anses vara uppfyllda.
- **Specifik organtoxicitet – enstaka exponering**
Kan orsaka irritation i luftvägarna.
- **Specifik organtoxicitet – upprepad exponering**
Kriterierna för klassificering kan på grundval av tillgängliga data inte anses vara uppfyllda.
- **Fara vid aspiration** Kriterierna för klassificering kan på grundval av tillgängliga data inte anses vara uppfyllda.

AVSNITT 12: Ekologisk information

- **12.1 Toxicitet**
- **Akvatisk toxicitet:** Ingen ytterligare relevant information finns till förfogande.
- **12.2 Persistens och nedbrytbarhet** Ingen ytterligare relevant information finns till förfogande.
- **12.3 Bioackumuleringsförmåga** Ingen ytterligare relevant information finns till förfogande.
- **12.4 Rörlighet i jord** Ingen ytterligare relevant information finns till förfogande.
- **Ytterligare ekologiska hänvisningar:**
- **Allmänna hänvisningar:**
Vattenföroreningsklass 2 (Självtvärdering): risk för vattenförorening.
Låt ej tränga ner i grundvatten, vattendrag eller i avlopps nätet.
Risk för förorening av dricksvattnet redan när små mängder tränger ner i marken.
- **12.5 Resultat av PBT- och vPvB-bedömningen**
- **PBT:** Ej användbar.
- **vPvB:** Ej användbar.
- **12.6 Andra skadliga effekter** Ingen ytterligare relevant information finns till förfogande.

AVSNITT 13: Avfallshantering

- **13.1 Avfallsbehandlingsmetoder**
- **Rekommendation:** Får inte deponeras ihop med hushållsavfall. Får inte tömmas i avlopps nätet.

(Fortsättning på sida 7)

Säkerhetsdatablad

Enligt 1907/2006/EG, Artikel 31

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(Fortsättning från sida 6)

- **Ej rengjorda förpackningar:**
- **Rekommendation:** Avfallshanteras enligt myndigheters föreskrifter.
- **Rekommenderat rengöringsmedel:** Vatten, eventuellt med tillsats av rengöringsmedel.

AVSNITT 14: Transportinformation

· **14.1 UN-nummer**

· **ADR, IMDG, IATA**

UN1993

· **14.2 Officiell transportbenämning**

· **ADR**

1993 BRANDFARLIG VÄTSKA, N.O.S.

· **IMDG, IATA**

FLAMMABLE LIQUID, N.O.S.

· **14.3 Faroklass för transport**

· **ADR**



· **Klass**

3 Brandfarliga vätskor

· **IMDG, IATA**

· **Class**

Utgår

· **14.4 Förpackningsgrupp**

· **ADR, IMDG, IATA**

III

· **14.5 Miljöfaror:**

Ej användbar.

· **14.6 Särskilda skyddsåtgärder**

· **Stowage Category**

Varning: Brandfarliga vätskor

A

· **14.7 Bulktransport enligt bilaga II till Marpol 73/78 och IBC-koden**

Ej användbar.

· **Transport / ytterligare uppgifter:**

· **ADR**

· **Begränsade mängder (LQ)**

5L

· **Reducerade mängder (EQ)**

Kod: E1

Högsta nettomängd per innerförpackning: 30 ml

Högsta nettomängd per ytterförpackning: 1000 ml

· **IMDG**

· **Limited quantities (LQ)**

5L

· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Regulation":**

UN 1993 BRANDFARLIG VÄTSKA, N.O.S., 3, III

SE

(Fortsättning på sida 8)

Säkerhetsdatablad

Enligt 1907/2006/EG, Artikel 31

Datum för utskrift: 31.10.2018

Omarbetad: 31.10.2018

Handelsnamn: Paraformaldehyde 20% Solution, EM Grade

(Fortsättning från sida 7)

AVSNITT 15: Gällande föreskrifter

- **15.1 Föreskrifter/lagstiftning om ämnet eller blandningen när det gäller säkerhet, hälsa och miljö**
- **Direktiv 2012/18/EU**
- **Namngivna farliga ämnen - BILAGA I** Inga beståndsdelar är listade.
- **Förordning (EG) nr 1907/2006 BILAGA XVII Villkor:** 3, 28
- **Nationella föreskrifter:**
- **Hänvisningar beträffande inskränkning av sysselsättning:**
Arbetstagare får inte utsättas för det cancerframkallande farliga ämnet som denna tillredning innehåller. I enstaka fall kan myndigheten medge undantag.
- **15.2 Kemikaliesäkerhetsbedömning:** En kemikaliesäkerhetsbedömning har ej gjorts.

AVSNITT 16: Annan information

Uppgifterna är baserade på våra aktuella kunskaper. De representerar emellertid ingen som helst garanti beträffande produktgenskaper och utgör ingen grund för ett avtalat rättsförhållande.

- **Relevanta fraser**
- H301 Giftigt vid förtäring.
- H311 Giftigt vid hudkontakt.
- H314 Orsakar allvarliga frätskador på hud och ögon.
- H317 Kan orsaka allergisk hudreaktion.
- H331 Giftigt vid inandning.
- H341 Misstänks kunna orsaka genetiska defekter.
- H350 Kan orsaka cancer.
- **Förkortningar och akronymer:**
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 3: Akut toxicitet – Kategori 3
- Acute Tox. 4: Akut toxicitet – Kategori 4
- Skin Corr. 1B: Frätande eller irriterande på huden – Kategori 1B
- Skin Irrit. 2: Frätande eller irriterande på huden – Kategori 2
- Eye Irrit. 2: Allvarlig ögonskada eller ögonirritation – Kategori 2
- Skin Sens. 1: Hudsensibilisering – Kategori 1
- Muta. 2: Mutagenitet i könsceller – Kategori 2
- Carc. 1B: Cancerogenitet – Kategori 1B
- STOT SE 3: Specifik organotoxicitet (enstaka exponering) – Kategori 3

แผ่นข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2018.10.31

การปรับปรุงใหม่ : 2018.10.31

1 การระบุสาร/ การทำ/ และของบริษัท / บริษัทที่เข้าถือครอง

- 1.1 ลักษณะเฉพาะของผลิตภัณฑ์
- ชื่อทางการค้า **Paraformaldehyde 20% Solution, EM Grade**
- เลขที่รายชื่อ 15713, 15713-SP, 15713-S
- 1.2 สารหรือสารผสมที่เกี่ยวข้องที่ระบุให้ใช้และที่ไม่ควรให้ใช้ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- การประยุกต์ใช้สาร/ การทำ เคมีภัณฑ์ห้องทดลอง
- 1.3 รายละเอียดของผู้จัดหาข้อมูลด้านความปลอดภัย
- ผู้ผลิต/ ผู้จัดหา
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcek@aol.com
www.emsdiasum.com
- ข้อมูลรายละเอียดเพิ่มเติมหาได้จาก Product safety department
- 1.4 หมายเลขโทรศัพท์ฉุกเฉิน:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 การระบุสิ่งที่อันตราย

- 2.1 การจำแนกประเภทของสารหรือสารผสม
- การแบ่งประเภทตามข้อบังคับ (จีซี) เลขที่ 1272/2008



สิ่งอันตรายต่อสุขภาพ

Muta. 2 H341 สงสัยว่าจะเป็นสาเหตุให้เกิดข้อบกพร่องทางพันธุกรรม
Carc. 1B H350 อาจเป็นเหตุให้เกิดมะเร็ง



Acute Tox. 4 H302 เป็นอันตรายหากกลืนเข้าไป
Acute Tox. 4 H312 เป็นอันตรายหากสัมผัสกับผิวหนัง
Acute Tox. 4 H332 ให้โทษหากสูดหายใจเข้า
Skin Irrit. 2 H315 เป็นสาเหตุให้เกิดการระคายเคืองผิวหนัง
Eye Irrit. 2 H319 เป็นสาเหตุให้เกิดการระคายเคืองอย่างร้ายแรงที่ตา
Skin Sens. 1 H317 อาจเป็นสาเหตุให้ผิวหนังแสดงอาการแพ้
STOT SE 3 H335 อาจเป็นสาเหตุให้เกิดการระคายเคืองต่อระบบหายใจ

- 2.2 องค์ประกอบของฉลาก
- ฉลากตามระเบียบ (EC) เลขที่ 1272/2008 ผลิตภัณฑ์ได้รับการจัดประเภทและติดฉลากตามข้อบังคับของ CLP
- ภาพสัญลักษณ์สิ่งที่เป็นอันตราย



GHS07 GHS08

- สัญลักษณ์คำ อันตราย

(ต่อที่หน้า 2)

-TH-

แผ่นข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2018.10.31

การปรับปรุงใหม่ : 2018.10.31

ชื่อทางการค้า Paraformaldehyde 20% Solution, EM Grade

(ต่อหน้า 1)

· ส่วนประกอบที่ระบุอันตรายบนฉลาก

ฟอร์มาลดีไฮด์

· ประกาศสิ่งที่อันตราย

- H302+H312+H332 อันตรายหากมีการกลืนกิน , มีการสัมผัสกับผิวหนัง หรือ มีการสูดดม.
 H315 เป็นสาเหตุให้เกิดการระคายเคืองผิวหนัง
 H319 เป็นสาเหตุให้เกิดการระคายเคืองอย่างร้ายแรงที่ตา
 H317 อาจเป็นสาเหตุให้ผิวหนังแสดงอาการแพ้
 H341 สงสัยว่าจะเป็นสาเหตุให้เกิดข้อบกพร่องทางพันธุกรรม
 H350 อาจเป็นเหตุให้เกิดมะเร็ง
 H335 อาจเป็นสาเหตุให้เกิดการระคายเคืองต่อระบบหายใจ

· ประกาศการป้องกันระดับระวังภัย

- P261 หลีกเลี่ยงการสูดหายใจเอาฝุ่น/ ไอสาร/ แกส/ หมอก/ไอ/ ละอองฟุ้ง
 P280 สวมถุงมือป้องกัน/เสื้อผ้ามป้องกัน/ที่ป้องกันตา/ที่ป้องกันหน้า
 P305+P351+P338 หากเข้าตา : ชะด้วยน้ำอย่างระมัดระวังเป็นเวลาหลายๆนาทีถอดคอนแทกซ์เลนส์ถ้ายังอยู่ที่เดิมและ
 สะดวกที่จะทำก็ให้ชะล้างต่อไป
 P322 มาตรการเฉพาะ (ดูฉลาก)
 P405 เก็บในที่ใส่กุญแจมิด
 P501 ทิ้งสิ่งที่ยังบรรจุ/ภาชนะที่ยังบรรจุตามกฎหมายของท้องถิ่น/แคว้น/ในประเทศ/ระหว่างประเทศ

· 2.3 อันตรายอื่นๆ

· ผลของ PBT และการประเมิน vPvB

- PBT: ไม่สามารถใช้ได้
- vPvB: ไม่สามารถใช้ได้

3 ส่วนประกอบ/ ข้อมูลรายละเอียดของส่วนผสมต่างๆ

· 3.2 คุณลักษณะทางเคมี: ส่วนผสม

- คำอธิบาย ส่วนผสมของสารในรายการข้างล่างพร้อมสารเติมแต่งที่ไม่เป็นอันตราย

· ส่วนประกอบที่มีอันตราย

CAS: 50-00-0	ฟอร์มาลดีไฮด์	>10-≤25%
EINECS: 200-001-8	☠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; ☠ Muta. 2, H341; Carc. 1B, H350; ☠ Skin Corr. 1, H314; ☠ Skin Sens. 1, H317	

- ข้อมูลรายละเอียดเสริม สำหรับข้อความที่ระบุในรายการวลีความเสี่ยงที่อ้างอิงถึงในส่วนที่ 16

4 มาตรการการปฐมพยาบาลเบื้องต้น

· 4.1 คำอธิบายถึงมาตรการปฐมพยาบาล

· ข้อมูลรายละเอียดทั่วไป

อาการจากพิษอาจเกิดขึ้นหลังจากนั้นหลายชั่วโมงดังนั้นจะต้องเฝ้าติดตามอาการทางการแพทย์อย่างน้อย 48 ชั่วโมงหลังจากอุบัติเหตุ

· หลังจากการสูดหายใจเข้าไป

หาบริเวณที่มีอากาศบริสุทธิ์และเพื่อให้มันใจติดต่อแพทย์
 ในกรณีที่คุณไม่รู้สึกตัวให้ขนย้ายคนไข้อย่างมั่นคงในท่าตะแคงด้านข้าง

· หลังจากการสัมผัสผิวหนัง

ล้างด้วยน้ำและสบู่แล้วฟอกให้ทั่วทันที

· หลังจากการสัมผัสสูดดม

ชะตาที่เปิดอยู่ใต้น้ำที่กำลังไหลเป็นเวลาหลายนาทีถ้าอาการไม่ดีขึ้นให้ปรึกษาแพทย์

· หลังจากการกลืนเข้าไป: พบแพทย์โดยทันที

· 4.2 อาการสำคัญส่วนใหญ่และผลกระทบ ทั้งชนิดเฉียบพลันและค่อยๆ แสดงอาการ

ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

· 4.3 ข้อบ่งชี้ของอาการที่ต้องเข้ารับการรักษาจากแพทย์ทันทีและการบำบัดพิเศษที่จำเป็น

ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

TH

(ต่อหน้า 3)

แผนข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2018.10.31

การปรับปรุงใหม่ : 2018.10.31

ชื่อทางการค้า Paraformaldehyde 20% Solution, EM Grade

(ต่อที่หน้า 2)

5 มาตรการการดับเพลิง

- 5.1 สารที่ใช้ดับเพลิง
- สารดับเพลิงที่เหมาะสม
คาร์บอนไดออกไซด์สเปรย์ผงหรือน้ำดับเพลิงขนาดใหญ่ด้วยการฉีดน้ำหรือโฟมแอลกอฮอล์ที่ทนทาน
- 5.2 อันตรายเฉพาะอย่างที่เกิดจากสารหรือส่วนผสม ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 5.3 คำแนะนำสำหรับพนักงานดับเพลิง
- อุปกรณ์ป้องกันภัย อุปกรณ์ป้องกันซึ่งเหมาะสำหรับการหายใจทางปาก

6 มาตรการลดอุบัติเหตุ

- 6.1 การป้องกันส่วนบุคคล อุปกรณ์ป้องกัน และขั้นตอนดำเนินการเมื่อเกิดกรณีฉุกเฉิน ไม่ได้กำหนด
- 6.2 การให้ความคุ้มครองสิ่งแวดล้อม:
ทำให้เจือจางด้วยน้ำมากๆ
อย่าปล่อยให้เข้าไปในท่อน้ำทิ้ง/ น้ำบนดินหรือใต้ดิน
- 6.3 วิธีดำเนินการและวัสดุสำหรับการบรรจุและการทำความสะอาด:
ดูดซับด้วยวัสดุที่สามารถยึดของเหลวไว้ (ทรายไดอะโตไมท์ตัวยึดเกาะกรดตัวยึดต่างๆไปซีลีย)
ทิ้งวัสดุที่ปนเปื้อนเป็นของเสียตามรายการในบัญชี 13
ตรวจให้แน่ใจว่ามีสารระคายเคืองที่ดีพอ
- 6.4 การอ้างอิงถึงส่วนอื่น
ดูข้อมูลรายละเอียดเรื่องความปลอดภัยในการขนถ่ายจากส่วนที่ 7
ดูข้อมูลรายละเอียดเรื่องอุปกรณ์ป้องกันส่วนบุคคลจากส่วนที่ 8
ดูข้อมูลรายละเอียดเรื่องการจัดเก็บจากส่วนที่ 13

7 การขนถ่ายและการจัดเก็บ

- 7.1 การป้องกันล่วงหน้าสำหรับการจัดการด้านความปลอดภัย
ทำให้แน่ใจว่าสถานที่ทำงานมีการระบายอากาศ/ ไอเสียที่ดี
เปิดและถือภาชนะรองรับอย่างระมัดระวัง
ป้องกันการเกิดละอองสารฟุ้ง
- ข้อมูลรายละเอียดเกี่ยวกับการป้องกันอัคคีภัยและการระเบิด
เก็บอุปกรณ์ป้องกันสำหรับการช่วยหายใจให้มีพร้อมใช้งาน
- 7.2 เงื่อนไขในการเก็บรักษาอย่างปลอดภัย, รวมถึงสิ่งที่เข้ากันไม่ได้ใดๆ
- การจัดเก็บ
- ข้อกำหนดที่ต้องปฏิบัติตามสำหรับห้องเก็บและภาชนะบรรจุ ไม่มีข้อกำหนดพิเศษ
- ข้อมูลรายละเอียดด้านการจัดเก็บในสถานที่จัดเก็บรวม ไม่ได้กำหนด
- ข้อมูลรายละเอียดเพิ่มเติมด้านสภาพการจัดเก็บ เก็บโดยปิดผนึกอย่างแน่นหนา
- 7.3 การระบุถึงการสิ้นสุดการใช้ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

8 การควบคุมการทิ้งในลักษณะเปิด / การป้องกันภัยสำหรับบุคคล

- ข้อมูลรายละเอียดเสริมสำหรับการออกแบบสิ่งอำนวยความสะดวกทางเทคนิค ไม่มีข้อมูลนอกเหนือจากนี้ดูรายการ 7
- 8.1 การควบคุมตัวแปร

· ส่วนผสมพร้อมค่าขอบเขตที่ต้องเฝ้าดูในสถานที่ปฏิบัติงาน

50-00-0 ฟอร์มัลดีไฮด์

PEL (US)	ค่าระยะสั้น: 2 ppm ค่าระยะยาว: 0.75 ppm see 29 CFR 1910.1048(c)
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(ต่อที่หน้า 4)

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แผ่นข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2018.10.31

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ชื่อทางการค้า Paraformaldehyde 20% Solution, EM Grade

(ต่อที่หน้า 3)

REL (US)	ค่าระยยะยาว: 0.016 ppm Ceiling limit value: 0.1* ppm *15-min; See Pocket Guide App. A
TLV (US)	ค่าระยยะสั้น: 0.37 mg/m ³ , 0.3 ppm ค่าระยยะยาว: 0.12 mg/m ³ , 0.1 ppm DSEN; RSEN

· **ข้อมูลรายละเอียดเสริม** รายการถูกต้องระหว่างที่จัดทำโดยอาศัยการใช้งานเป็นหลัก

· 8.2 การควบคุมการสัมผัส

· อุปกรณ์ป้องกันส่วนบุคคล

· มาตรการการป้องกันและสุขอนามัยทั่วไป

เก็บให้ห่างจากสิ่งของที่เป็นอาหาร เครื่องดื่ม และอาหารสัตว์

ให้ถอดเสื้อผ้าที่เปื้อนและเจือปนออกทันที

ล้างมือก่อนที่จะหยุดพักและเมื่อสิ้นสุดเวลาทำงาน

เก็บชุดป้องกันแยกต่างหาก

หลีกเลี่ยงการสัมผัสถูกตาและผิวหนัง

· การป้องกันการสูดหายใจเข้าไป

ในกรณีที่อยู่เป็นเวลาสั้นหรืออากาศเป็นพิษระดับต่ำ ใช้หน้ากากกรองเพื่อช่วยหายใจในกรณีที่มีความเข้มข้นสูงหรืออยู่เป็นเวลานาน ให้ใช้เครื่องป้องกันที่มีอุปกรณ์ช่วยหายใจในตัว

· การป้องกันมือ



ถุงมือป้องกัน

วัสดุของถุงมือจะต้องไม่ให้อากาศผ่านเข้าออกและทนทานต่อผลิตภัณฑ์/ สาร/ การผลิต

เนื่องจากขาดการทดสอบจึงไม่มีคำแนะนำสำหรับวัสดุที่ใช้ทำถุงมือสำหรับผลิตภัณฑ์/ การผลิต/ ของผสมเคมี

เลือกวัสดุสำหรับถุงมือโดยพิจารณาจากเวลาที่ใช้ในการซึมผ่านอัตราการแพร่และการเสื่อม

· วัสดุที่ใช้ทำถุงมือ

การเลือกใช้ถุงมือที่เหมาะสมไม่เพียงแต่ขึ้นอยู่กับวัสดุแต่ยังขึ้นกับมาตรฐานด้านคุณภาพและข้อแตกต่างระหว่างผู้ผลิตแต่ละแห่ง โดยที่ผลิตภัณฑ์เตรียมมาจากสารหลายชนิดความทนทานของวัสดุถุงมือไม่สามารถที่จะคำนวณล่วงหน้า ดังนั้นจึงต้องตรวจสอบกับการใช้งาน

· เวลาที่ใช้ในการทะลุผ่านวัสดุที่ใช้ทำถุงมือ

ผู้ผลิตถุงมือป้องกันจะต้องทดสอบหาเวลาแน่นอนที่ใช้ในการทะลุผ่านและจะต้องมีการตรวจสอบติดตาม

· การป้องกันตา



แว่นตาที่ขอบปิดสนิท

9 คุณสมบัติทางกายภาพและเคมี

· 9.1 ข้อมูลคุณสมบัติพื้นฐานทางกายภาพและเคมี

· ข้อมูลรายละเอียดทั่วไป

· ลักษณะ :

รูปลักษณ์

ของเหลว

สี

ใส

· กลิ่น

ลักษณะพิเศษ

· เกณฑ์กลิ่น :

ไม่ได้กำหนดไว้.

· ค่า pH

ไม่ได้กำหนดไว้.

(ต่อที่หน้า 5)

TH

แผ่นข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2018.10.31

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ชื่อทางการค้า Paraformaldehyde 20% Solution, EM Grade

(ต่อหน้า 4)

· การเปลี่ยนสภาวะ จุดหลอมเหลว/ ขอบเขตการหลอมละลาย จุดเดือด/ ขอบเขตการเดือด	ไม่ได้กำหนด >93 °C
· จุดวาบไฟ	>60 °C
· ความสามารถติดไฟ (ของแข็งแกส)	ไม่สามารถใช้ได้
· อุณหภูมิจุดระเบิด	300 °C
· อุณหภูมิสลายตัว	ไม่ได้กำหนดไว้.
· การเผาไหม้ด้วยตัวเอง	ผลิตภัณฑ์ไม่เป็นสารจุดไฟติดด้วยตัวเอง
· อันตรายจากการระเบิด	ไม่ได้กำหนดไว้.
· ขอบเขตการระเบิด ขั้นต่ำ ขั้นสูง	7 Vol % 73 Vol %
· ความดันไอ ที่ 20 °C	23 hPa
· ความหนาแน่น ที่ 20 °C · ความหนาแน่นสัมพัทธ์ · ความหนาแน่นของไอ · อัตราการระเหย	0.962 g/cm ³ ไม่ได้กำหนดไว้. ไม่ได้กำหนดไว้. ไม่ได้กำหนดไว้.
· ความสามารถในการละลายใน / ความสามารถผสมเป็นสารละลายเนื้อเดียวทุกส่วนผสมกับน้ำ	ผสมกันได้อย่างเต็มที่
· สัมประสิทธิ์การแยกตัว (เฮน-ออกทานอล/น้ำ)	ไม่ได้กำหนดไว้.
· ความหนืด (ไดนามิก) พลศาสตร์ (คิเนเมติก) จลนศาสตร์	ไม่ได้กำหนดไว้. ไม่ได้กำหนดไว้.
· ปริมาณส่วนประกอบตัวทำละลาย ตัวทำละลายอินทรีย์ น้ำ VOC (EC)	20.0 % 80.0 % 20.00 %
· ส่วนประกอบที่เป็นของแข็ง 9.2 ข้อมูลอื่นๆ	0.0 % ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

10 ความเสถียรและความสามารถในการทำปฏิกิริยา

- 10.1 ปฏิกิริยาโต้ตอบ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 10.2 เสถียรภาพทางเคมี
- การสลายตัวด้วยความร้อน / เงื่อนไขที่ต้องหลีกเลี่ยง ไม่มีการสลายตัวถ้าใช้ตามรายละเอียดที่ระบุไว้
- 10.3 ความเป็นไปได้ของการเกิดปฏิกิริยาอันตราย ไม่มีปฏิกิริยาเป็นอันตรายที่รู้จัก
- 10.4 เงื่อนไขเพื่อการหลีกเลี่ยง ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 10.5 วัสดุที่เข้ากันไม่ได้: ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 10.6 อันตรายจากการสลายตัวของผลิตภัณฑ์: ไม่มีสารจากการสลายตัวที่เป็นอันตรายที่รู้จัก

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(ต่อหน้า 6)

แผ่นข้อมูลความปลอดภัย

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ชื่อทางการค้า Paraformaldehyde 20% Solution, EM Grade

(ต่อที่หน้า 5)

11 ข้อมูลรายละเอียดเกี่ยวกับพิษวิทยา

- 11.1 ข้อมูลเกี่ยวกับผลกระทบทางพิษวิทยา
- ความเป็นพิษอย่างสาหัส:
อันตรายหากมีการกลืนกิน, มีการสัมผัสกับผิวหนัง หรือ มีการสูดดม.

- การจัดแบ่งตามค่า LD/LC50

50-00-0 ฟอรั่มัลดีไฮด์

ทางปาก	LD50	>200 mg/kg (rat)
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- อาการระคายเคืองเบื้องต้น
- บนผิวหนัง
เป็นสาเหตุให้เกิดการระคายเคืองผิวหนัง
- ที่ดวงตา
เป็นสาเหตุให้เกิดการระคายเคืองอย่างร้ายแรงที่ตา
- การทำให้แพ้
อาจเป็นสาเหตุให้ผิวหนังแสดงอาการแพ้

12 ข้อมูลรายละเอียดเกี่ยวกับนิเวศวิทยา

- 12.1 ความเป็นพิษ
- ความเป็นพิษที่เกี่ยวข้องกับน้ำ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 12.2 การคงอยู่และการย่อยสลาย ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 12.3 การสะสมทางชีวภาพที่อาจเกิดขึ้น ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- 12.4 การเปลี่ยนแปลงในดิน ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- ข้อมูลรายละเอียดเสริมเกี่ยวกับนิเวศวิทยา
- หมายเหตุทั่วไป
เป็นอันตรายต่อน้ำชั้น 2 (กฎข้อบังคับของเยอรมัน)(การประเมินค่าด้วยตัวเอง):เป็นอันตรายกับน้ำ
อย่าปล่อยให้ผลิตภัณฑ์ไปถึงน้ำผิวดินเส้นทางน้ำหรือระบบระบายน้ำเสีย
เป็นอันตรายต่อน้ำดื่มแม้จะร่วงลงในพื้นที่เป็นปริมาณน้อย
- 12.5 ผลของ PBT และการประเมิน vPvB
- PBT: ไม่สามารถใช้ได้
- vPvB: ไม่สามารถใช้ได้
- 12.6 ผลข้างเคียงอื่นๆ ไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้

13 การพิจารณาการจัด

- 13.1 วิธีการกำจัดของเสีย
- คำแนะนำ ต้องไม่ทิ้งไปพร้อมกับขยะจากบ้านเรือนอย่าปล่อยให้ผลิตภัณฑ์เข้าถึงระบบระบายน้ำเสีย
- ภาชนะบรรจุที่ยังไม่ได้สร้างความสะอาด
- คำแนะนำ การกำจัดจะต้องทำตามกฎระเบียบที่เป็นทางการ
- สารทำความสะอาดที่แนะนำ น้ำถ้าจำเป็นใช้คู่กับสารทำความสะอาด

14 ข้อมูลรายละเอียดในการขนส่ง

- 14.1 เลขที่ UN
- ADR, IMDG, IATA UN1993
- 14.2 ชื่อการจัดส่งสินค้าที่เหมาะสมของ UN
- ADR 1993 FLAMMABLE LIQUID, N.O.S.

(ต่อที่หน้า 7)

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แผ่นข้อมูลความปลอดภัย
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(ต่อหน้า 6)

· IMDG, IATA	FLAMMABLE LIQUID, N.O.S.
· 14.3 ชั้นเรียนอันตรายจากการขนส่ง	
· ADR	
	
· ประเภท	3 ของเหลวติดไฟได้
· IMDG, IATA	
· Class	ยกเล็ก
· 14.4 กลุ่มของภาชนะบรรจุ	
· ADR, IMDG, IATA	III
· 14.5 สิ่งที่เป็นอันตรายต่อสภาพแวดล้อม	ไม่สามารถใช้ได้
· 14.6 การป้องกันพิเศษล่วงหน้าสำหรับผู้ใช้	คำเตือน !: ของเหลวติดไฟได้
· Stowage Category	A
· 14.7 การขนส่งขนาดใหญ่ตามภาคผนวก 2 ของ MARPOL73/78 และรหัส IBC	ไม่สามารถใช้ได้
· การขนส่ง/ข้อมูลรายละเอียดเสริม	
· ADR	
· ปริมาณที่จำกัด (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· “กฎระเบียบต้นแบบ” ของ UN	UN 1993 FLAMMABLE LIQUID, N.O.S., 3, III

15 ข้อมูลรายละเอียดของกฎระเบียบ

- 15.1 ความปลอดภัย สุขภาพและระเบียบ/กฎหมายสิ่งแวดล้อมโดยเฉพาะของสารหรือสารผสม
- บัญชีรายชื่อวัตถุอันตราย

· กรมวิชาการเกษตร	ไม่มีส่วนผสมใดอยู่ในรายการ	
· กรมประมง	50-00-0	ฟอร์มัลดีไฮด์
		ชนิดที่ 2
· กรมปศุสัตว์	50-00-0	ฟอร์มัลดีไฮด์
		ชนิดที่ 3
· อาหารและยา	50-00-0	ฟอร์มัลดีไฮด์
		ชนิดที่ 4

(ต่อหน้า 8)

แผ่นข้อมูลความปลอดภัย

ตาม 1907/2006/EC, มาตรา 31

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· กรมโรงงานอุตสาหกรรม	
50-00-0	ฟอร์มาลดีไฮด์
· กรมธุรกิจพลังงาน	
ไม่มีส่วนผสมใดอยู่ในรายการ	

· กฎหมายของประเทศ

· ข้อมูลรายละเอียดเกี่ยวกับขอบเขตการใช้งาน

ไม่อนุญาตให้คนงานเข้าไปสัมผัสกับวัตถุอันตรายที่ทำให้เกิดมะเร็งซึ่งมีอยู่ในการผลิตช็อกกเว้นอาจทำได้เมื่อได้รับอนุญาตจากผู้มีอำนาจในบางกรณี

· 15.2 การประเมินความปลอดภัยของสารเคมี: ไม่ได้ดำเนินการตามการประเมินความปลอดภัยของสารเคมี

16 ข้อมูลรายละเอียดอื่นๆ

ข้อมูลรายละเอียดนี้ใช้ความรู้ปัจจุบันของเราเป็นหลักอย่างไรก็ตามข้อมูลนี้ไม่ใช่การรับประกันจากสถาบันต่อคุณสมบัติเฉพาะของผลิตภัณฑ์และไม่สามารถยืนยันการบังคับใช้ตามกฎหมายที่เกี่ยวข้องกับสัญญา

· วลีที่เกี่ยวข้องกับ

- H301 มีพิษหากกลืนเข้าไป
- H311 มีพิษโดยการสัมผัสกับผิวหนัง
- H314 เป็นสาเหตุให้ผิวหนังไหม้อย่างสาหัสและทำอันตรายต่อดวงตา
- H317 อาจเป็นสาเหตุให้ผิวหนังแสดงอาการแพ้
- H331 มีพิษหากสูดหายใจเข้าไป
- H341 สงสัยว่าจะเป็นสาเหตุให้เกิดข้อบกพร่องทางพันธุกรรม
- H350 อาจเป็นเหตุให้เกิดมะเร็ง

· คำย่อและชื่อย่อที่ผสมขึ้น

- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 3: Acute toxicity – Category 3
- Acute Tox. 4: Acute toxicity – Category 4
- Skin Corr. 1: Skin corrosion/irritation – Category 1
- Skin Irrit. 2: Skin corrosion/irritation – Category 2
- Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
- Skin Sens. 1: Skin sensitisation – Category 1
- Muta. 2: Germ cell mutagenicity – Category 2
- Carc. 1B: Carcinogenicity – Category 1B
- STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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Güvenlik bilgi formu
23 Haziran 2017 tarihli, 30105 sayılı, „Kimyasalların Kaydı, Değerlendirilmesi, İzni Ve Kisitlanması Hakkında Yönetmelik, Madde 27“ hükümlerine uygun düzenlenmiştir

Baskı tarihi: 31.10.2018

Form No.: 15713

Yeniden düzenleme tarihi: 31.10.2018

Bölüm 1: Maddenin/karışımın ve şirketin/dağıtıcının tanımı

- **1.1 Madde/Karışım kimliği**
- **Ticari adı: Paraformaldehyde 20% Solution, EM Grade**
- **Mal numarası: 15713, 15713-SP, 15713-S**
- **1.2 Maddenin veya karışımın ilgili tanımlanmış kullanımları ve tavsiye edilmeyen kullanımları**
Daha başka önemli bilgi mevcut değildir.
- **Maddenin Kullanımı / Hazırlanması** Laboratuarda kullanılan kimyasal maddeler
- **1.3 Güvenlik bilgi formu sağlayıcısının detayları**
- **Üretici / Teslimatı yapan:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Güvenlik hakkında bilgiler veren kesim: Product safety department**
- **1.4 Acil telefon numarası**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

Bölüm 2: Zararların tanımı

- **2.1 Madde veya karışımın sınıflandırılması**
- **Düzenlemeye göre sınıflandırma (EC) No 1272/2008**



GHS08 Sağlık zararlılığı

Muta. 2 H341 Genetik hasara yol açma şüphesi var.
 Carc. 1B H350 Kansere yol açabilir.



GHS07

Acute Tox. 4 H302 Yutulması halinde zararlıdır.
 Acute Tox. 4 H312 Cilt ile teması halinde zararlıdır.
 Acute Tox. 4 H332 Solunması halinde zararlıdır.
 Skin Irrit. 2 H315 Cilt tahrişine yol açar.
 Eye Irrit. 2 H319 Ciddi göz tahrişine yol açar.
 Skin Sens. 1 H317 Alerjik cilt reaksiyonlarına yol açar.
 STOT SE 3 H335 Solunum yolu tahrişine yol açabilir.

- **2.2 Etiket bilgileri**
- **Yönetmelik (EC) No 1272/2008'e göre etiketleme**
Ürün SEA yönetmeliğine göre sınıflandırılmış ve etiketlenmiştir.

(Devamı sayfa 2 'da)

Güvenlik bilgi formu
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Form No.: 15713

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Ticari adı: Paraformaldehide 20% Solution, EM Grade

(Sayfa 1 'nin devamı)

· Zararlılık İşaretleri



GHS07 GHS08

· Uyarı Kelimesi Tehlike

· Etiketlendirme için tehlikeyi belirleyici bileşenler:

formaldehid

· Zararlılık İfadesi

H302+H312+H332 Yutulduğunda, ciltle temas ettiğinde veya solunduğunda zararlıdır.

H315 Cilt tahrişine yol açar.

H319 Ciddi göz tahrişine yol açar.

H317 Alerjik cilt reaksiyonlarına yol açar.

H341 Genetik hasara yol açma şüphesi var.

H350 Kansere yol açabilir.

H335 Solunum yolu tahrişine yol açabilir.

· Önlem İfadesi

P261 Tozunu/dumanını/gazını/sisini/buharını/spreyini solumaktan kaçının.

P280 Koruyucu eldiven/koruyucu kıyafet/göz koruyucu/üz koruyucu kullanın.

P305+P351+P338 GÖZ İLE TEMASI HALİNDE: Su ile birkaç dakika dikkatlice durulayın. Takılı ve yapması kolaysa, kontak lensleri çıkartın. Durulamaya devam edin.

P322 Özel önlemler (etikete bakın).

P405 Kilit altında saklayın.

P501 İçeriği/kabı yerel/bölgesel/ulusal/uluslararası mevzuata uygun şekilde bertaraf edin.

· 2.3 Diğer zararlar

· PBT ve vPvB değerlendirmesi sonuçları

· PBT: Uygulanamaz.

· vPvB: Uygulanamaz.

Bölüm 3: Bileşimi/İçindekiler hakkında bilgi

· 3.2 Karışımlar

· **Tarifi:** Tehlikesiz katkılar ihtiva eden ve aşağıda belirtilen maddelerden oluşan karışım.

· İhtiva ettiği tehlikeli maddeler:

CAS: 50-00-0	formaldehid	%>10-≤25
EINECS: 200-001-8	Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; Muta. 2, H341; Carc. 1B, H350; Skin Corr. 1B, H314; Skin Sens. 1, H317	

· **Ek uyarılar:** belirtilmiş olan tehlike işaretlerinin metnini Bölüm 16'dan alınız**Bölüm 4: İlk yardım önlemleri**

· 4.1 İlk yardım önlemlerinin tanıtımı

· Genel uyarılar:

Zehirlenme belirtileri birçok saat sonra baş gösterebilir. Bu nedenle doktor kontrolü bir kazadan en az 48 saat sonrasında kadar sürdürülmelidir.

· Teneffüs ettikten sonra:

Bolca temiz hava alması sağlanarak her ihtimale karşı doktora başvurulmalıdır.

(Devamı sayfa 3 'da)

Güvenlik bilgi formu
23 Haziran 2017 tarihli, 30105 sayılı, „Kimyasalların Kaydı, Değerlendirilmesi, İzni Ve Kisitlanması Hakkında Yönetmelik, Madde 27“ hükümlerine uygun düzenlenmiştir

Baskı tarihi: 31.10.2018

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Ticari adı: Paraformaldehyde 20% Solution, EM Grade

(Sayfa 2 'nin devamı)

- Baygınlık halinde yatırılması ve taşınması sabit yan pozisyonunda olmalıdır.
- **Cilde temas ettikten sonra:** Derhal su ve sabunla yıkayarak iyice durulayınız.
- **Gözlere temas ettikten sonra:**
Gözleri, gözkapakları açık bir şekilde birkaç dakika süreyle akan suyun altına tutunuz. Sikâyetlerin devam etmesi halinde doktora başvurunuz.
- **Yuttuktan sonra:** Derhal doktora gidiniz.
- **4.2 Akut ve sonradan görülen en önemli belirtiler ve etkiler** Daha başka önemli bilgi mevcut değildir.
- **4.3 Acil tıbbi müdahale ve özel tedavi gereği için işaretler** Daha başka önemli bilgi mevcut değildir.

Bölüm 5: Yangınla mücadele önlemleri

- **5.1 Yangın söndürücüler**
- **Elverişli söndürücü maddeler:**
CO₂, söndürme tozu ya da püskürtme su. Daha büyük yangınlarla püskürtme su ve alkole mukavim köpükle mücadele ediniz.
- **5.2 Madde veya karışımdan kaynaklanan özel zararlar** Daha başka önemli bilgi mevcut değildir.
- **5.3 Yangın söndürme ekipleri için tavsiyeler**
- **Özel koruyucu teçhizat:** Nefes koruyucu alet takınız.

Bölüm 6: Kaza sonucu yayılma önlemleri

- **6.1 Kişisel önlemler, koruyucu ekipman ve acil müdahale planı** Gerekli değildir.
- **6.2 Çevresel önlemler**
Bol suyla sulandırınız.
Kanalizasyona/Yüzeysel suya/Yeraltı suyuna karışmasını önleyiniz.
- **6.3 Kontrol altında tutma ve temizleme için yöntem ve malzemeler**
Sıvı bağlayıcı malzemeyle (Kum, diatomit, asit bağlayıcı, genel bağlayıcı, un halinde testere talaşı) ile eminiz.
Zararlı madde karışmış malzemeyi çöp olarak madde 13 'e göre tasfiye ediniz.
Yeterli havalandırma sağlayınız.
- **6.4 Diğer bölümlere atıflar**
Güvenli kullanım ile ilgili bilgileri 7. bölümden alınız.
Kişisel koruyucu teçhizat ile ilgili bilgileri 8. bölümden alınız.
Tasfiye ile ilgili bilgileri 13. bölümden alınız.

Bölüm 7: Elleçleme ve depolama

- **7.1 Güvenli elleçleme için önlemler**
Çalışılan yerin iyi havalanmasını / havanın iyi emilmesini sağlayınız.
Kapları açarken, taşırken ya da yere bırakırken dikkatli davranınız.
Aerosol (bir gazın içinde sis şeklinde dağılmış sıvı) oluşumunu önleyiniz.
- **Yangın ve patlamadan korunmak için uyarılar:** Nefes koruyucu aletleri hazır bulundurunuz.
- **7.2 Birlikte bulunmaması gereken maddeleri de içeren güvenli depolama koşulları**
- **Depolama:**
- **Depolarda ve kaplarda aranan özellikler:** Belirli şartlar aranmaz.
- **Birarada depolama ile ilgili uyarılar:** Gerekli değil.
- **Depolama şartları ile ilgili diğer bilgiler:** Kabı sızdırmayacak şekilde kapalı tutunuz.

(Devamı sayfa 4 'da)

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(Sayfa 3 'nin devamı)

· 7.3 Belirli son kullanımlar Daha başka önemli bilgi mevcut değildir.

Bölüm 8: Maruz kalma kontrolü/kişisel korunma

- **Teknik tesisatların şekillendirilmesi ile ilgili ek bilgiler:** Başka bilgi yoktur, madde 7 'den bakınız.
- **8.1 Kontrol parametreleri**
- **Çalışma yeri ile ilgili, kontrol edilmesi gereken sınır değerleri olan bileşenler:**
 Ürün, çalışılan mahal ile ilgili ve kontrol edilmesi gereken sınır değerleri olan maddeleri önemli miktarda ihtiva etmemektedir.
- **Ek uyarılar:** Düzenlendiği tarihte geçerli listeler esas alınmıştır.
- **8.2 Maruz kalma kontrolü**
- **Kişisel koruyucu teçhizat:**
- **Genel koruyucu ve sıhhi önlemler:**
 Gıda maddelerinden, içeceklerden ve yem maddelerinden uzak tutunuz.
 Kirlenmiş, sıvı bulaşmış giyim eşyalarını derhal çıkartınız.
 Molalardan önce ve mesai sonunda ellerinizi yıkayınız.
 Koruyucu giyimi ayrı yerde muhafaza ediniz.
 Gözlerinize ve cildinize değmesinden kaçınınız.
- **Nefes koruyucu önlemler:**
 Kısa süreli ya da düşük ölçüde olumsuz tesir altında kalındığında nefes filtre aleti, yoğun bir şekilde ya da uzun süre etkisi altında kalındığında çevredeki havadan bağımsız olan nefes koruyucu cihaz kullanınız.
- **Elleri koruyucu:**



Koruyucu eldivenler

- Eldiven malzemesi ürün / malzeme / hazırlanan madde ile ilgili olarak geçirmez ve dayanıklı olmalıdır. Testlerin yapılmamış olması nedeni ile ürün / hazırlanmış madde / kimyasal karışım için lâzım olan eldiven imalatında kullanılması gereken malzeme ile ilgili herhangi bir tavsiye yapılamamaktadır. Eldiven imalatı için kullanılan malzemelerin seçiminde delinme sürelerinin, geçirgenlik oranlarının ve bozulmanın göz önüne alınması gereklidir.
- **Eldiven malzemesi**
 Uygun eldivenin seçiminde yalnız imalat malzemesi değil, aynı zamanda diğer kalite özellikleri de dikkate alınmalıdır ve bunlar imalatçıdan imalatçıya değişiklik göstermektedir. Her ürün birçok malzemenin birleşiminden meydana geldiği için eldivenlerin dayanıklılığı önceden hesaplanamamaktadır ve dolayısı ile her eldiven kullanılmadan önce kontrole tabi tutulmalıdır.
 - **Eldiven malzemesine nüfuz etme süresi**
 Kesin delinme (aşınma) süresi eldiven imalatçısından öğrenilmeli ve bu sürelere riayet edilmelidir.
 - **Gözleri koruyucu:**



Kenarları tam kapatan koruyucu gözlük

TR

(Devamı sayfa 5 'da)

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Bölüm 9: Fiziksel ve kimyasal özellikler

· 9.1 Temel fiziksel ve kimyasal özellikler hakkında bilgi

· Genel bilgiler

· Görünüm

· Biçim:	Sıvı
· Renk:	Şeffaf
· Koku:	Karakteristik
· Koku eşiği	Belirli değil.

· pH - değeri: Belirli değil.

· Durum değişikliği

· Erime noktası/donma noktası	Belirlenmemiştir.
· İlk kaynama noktası ve kaynama aralığı	>93 °C

· Parlama noktası >60 °C

· Alevlenirlik (katt, gaz) Uygulanamaz.

· Tutuşma ısı: 300 °C

· Bozunma sıcaklığı Belirli değil.

· Kendiliğinden tutuşma sıcaklığı Ürün kendiliğinden tutuşmaz niteliktedir.

· Patlayıcı özellikler Belirli değil.

· Patlama sınırları:

· Alt:	7 Vol %
· Üst:	73 Vol %

· Buhar basıncı 20 °C'de: 23 hPa

· Yoğunluk 20 °C'de: 0,962 g/cm³

· Bağıl yoğunluk Belirli değil.

· Buhar yoğunluğu Belirli değil.

· Buharlaşma hızı Belirli değil.

· Çözülme kabiliyeti / karışma kabiliyeti suyla: Tamamen karıştırılabilir niteliktedir.

· Dağılım katsayısı: n-oktanol/su Belirli değil.

· Akışkanlık

· Dinamik:	Belirli değil.
· Kinematik:	Belirli değil.

· Çözücü madde oranı:

· Organik çözücü madde:	%20.0
· Su:	%80.0
· VOC (CE)	20,00 %

· Katı madde oranı: %0.0

· 9.2 Diğer bilgiler Daha başka önemli bilgi mevcut değildir.

Bölüm 10: Kararlılık ve tepkime

· 10.1 Tepkime Daha başka önemli bilgi mevcut değildir.

(Devamı sayfa 6 'da)

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(Sayfa 5 'nin devamı)

- **10.2 Kimyasal kararlılık**
- **Termik ayrışma / kaçınılması gereken şartlar:** Usulüne uygun şekilde kullanıldığında ayrışma olmaz.
- **10.3 Zararlı reaksiyon olasılığı** Tehlikeli reaksiyonları duyulmamıştır.
- **10.4 Kaçınılması gereken durumlar** Daha başka önemli bilgi mevcut değildir.
- **10.5 Uyumsuz malzemeler** Daha başka önemli bilgi mevcut değildir.
- **10.6 Zararlı bozunma ürünleri** Ayrışmada oluşan tehlikeli ürünler duyulmamıştır.

Bölüm 11: Toksikolojik bilgiler

- **11.1 Toksikolojik etkiler hakkında bilgi**
- **Akut toksisite**
Yutulduğunda, ciltle temas ettiğinde veya solunduğunda zararlıdır.
- **Sınıflandırma için önemli olan LD/LC50 - değerleri (toksikolojik deney değerleri)**
- **50-00-0 formaldehid**
- **Ağızdan LD50** >200 mg/kg (rat)
- **Asli tahriş edici etkisi:**
- **Cilt aşınması/tahrişi**
Cilt tahrişine yol açar.
- **Ciddi göz hasarları/tahrişi**
Ciddi göz tahrişine yol açar.
- **Solunum yolları veya cilt hassaslaşması**
Alerjik cilt reaksiyonlarına yol açar.
- **Aşağıdaki grupların potansiyel etkilerine dair bilgiler:**
- **CMR-etkileri (kansere üretici, irsiyet değiştirici ve üremeyi tehdit edici etki)**
- **Eşey hücre mutajenitesi**
Genetik hasara yol açma şüphesi var.
- **Kanserojenite**
Kansere yol açabilir.
- **Üreme sistemi toksisitesi** Mevcut bilgilere göre, sınıflandırma kriterlerini karşılamamaktadır.
- **BHOT - tek maruz kalma**
Solunum yolu tahrişine yol açabilir.
- **BHOT - tekrarlı maruz kalma** Mevcut bilgilere göre, sınıflandırma kriterlerini karşılamamaktadır.
- **Aspirasyon zararı** Mevcut bilgilere göre, sınıflandırma kriterlerini karşılamamaktadır.

Bölüm 12: Ekolojik bilgiler

- **12.1 Toksikite**
- **Su toksisitesi:** Daha başka önemli bilgi mevcut değildir.
- **12.2 Kalıcılık ve bozunabilirlik** Daha başka önemli bilgi mevcut değildir.
- **12.3 Biyobirikim potansiyeli** Daha başka önemli bilgi mevcut değildir.
- **12.4 Toprakta hareketlilik** Daha başka önemli bilgi mevcut değildir.
- **Diğer ekolojik uyarılar:**
- **Genel uyarılar:**
Suyu tehdit sınıfı 2 (): suyu tehdit edicidir
Yeraltı suyuna, duran ve akan sulara ve kanalizasyona ulaşmasını önleyiniz.
Cüzi miktarların bile yeraltına akması halinde içme suyunu tehdit eder.
- **12.5 PBT ve vPvB değerlendirmesinin sonuçları**
- **PBT:** Uygulanamaz.
- **vPvB:** Uygulanamaz.

(Devamı sayfa 7 'da)

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(Sayfa 6 'nın devamı)

· 12.6 Diğer olumsuz etkiler Daha başka önemli bilgi mevcut değildir.

Bölüm 13: Bertaraf etme bilgileri

· 13.1 Atık işleme yöntemleri

· Tavsiiye: Ev çöpiyle beraber tasfiye edilmesi yasaktır. Kanalizasyona ulaşmasını önleyiniz.

· Temizlenmemiş ambalajlar:

· Tavsiiye: Tasfiyesi resmi makamların yönetmeliklerine göre yapılır.

· Tavsiiye olunan temizlik maddesi: Su, gerekirse temizlik maddeleri katmak suretiyle.

Bölüm 14: Taşımacılık bilgisi

· 14.1 UN Numarası

· ADR, IMDG, IATA

UN1993

· 14.2 UN uygun taşımacılık ismi

· ADR

· IMDG, IATA

1993 ALEVLENEBİLİR SIVI, B.B.B.
FLAMMABLE LIQUID, N.O.S.

· 14.3 Taşımacılık zararları

· ADR



· sınıfı

3 Tutuşabilir sıvı maddeler

· IMDG, IATA

· Class

kalkmıştır

· 14.4 Ambalaj grubu

· ADR, IMDG, IATA

III

· 14.5 Çevresel zararlar

Uygulanamaz.

· 14.6 Kullanıcılar için özel önlemler

· Stowage Category

Uyarı: Tutuşabilir sıvı maddeler

A

· 14.7 MARPOL 73/78 EK II ve IBC Koduna göre Toplu Taşımacılık

Uygulanamaz.

· Nakliyat/diğer bilgiler:

· ADR

· Sınırlı Miktarlar

· İstisnai miktarlar (EQ)

5L

Kod: E1

İç ambalaj başına maksimum net miktar: 30 ml

Dış ambalaj başına maksimum net miktar: 1000 ml

· IMDG

· Limited quantities (LQ)

5L

(Devamı sayfa 8 'da)

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(Sayfa 7'nin devamı)

· **Excepted quantities (EQ)**

Code: EI

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **UN "Model Düzenleme":**

UN 1993 ALEVLENEBİLİR SIVI, B.B.B., 3, III

Bölüm 15: Mevzuat bilgisi

· **15.1 Madde veya karışım için güvenlik, sağlık ve çevresel düzenlemeler/mevzuat**

· **Ulusal hükümler:**

· **Çalıştırma tahdidi ile ilgili uyarılar:**

İşçiler hazırlanan bu maddenin ihtiva ettiği kanser üretici tehlikeli maddelerin tesiri altında kalmamaları gerekmektedir. Mümferit vakalarda resmi makam istisnalarında bulunabilir.

· **15.2 Kimyasal güvenlik değerlendirmesi:** Bir Kimyasal güvenlik değerlendirmesi yapılmamıştır.

Bölüm 16: Diğer bilgiler

Veriler bugünkü bilgi durumumuza istinat etmektedir, ancak ürün özellikleri ile ilgili teminat teşkil etmezler ve akdî bir hukuki ilişki tesis etmezler.

· **Önemli terkipleri**

H301 Yutulması halinde toksiktir.

H311 Cilt ile teması halinde toksiktir.

H314 Ciddi cilt yanıklarına ve göz hasarına yol açar.

H317 Alerjik cilt reaksiyonlarına yol açar.

H331 Solunması halinde toksiktir.

H341 Genetik hasara yol açma şüphesi var.

H350 Kansere yol açabilir.

· **Kısaltmalar ve:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 3: Akut toksisite – Kategori 3

Acute Tox. 4: Akut toksisite – Kategori 4

Skin Corr. 1B: Cilt aşınması/tahrişi – Kategori 1B

Skin Irrit. 2: Cilt aşınması/tahrişi – Kategori 2

Eye Irrit. 2: Ciddi göz hasarı/göz tahrişi – Kategori 2

Skin Sens. 1: Cilt hassaslaştırıcılığı – Kategori 1

Muta. 2: Eşey hücre mutajenitesi – Kategori 2

Carc. 1B: Kanserojenite – Kategori 1B

STOT SE 3: Belirli hedef organ toksisitesi (tek maruz kalma) – Kategori 3