

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/10/2017

Reviewed on 01/10/2017

1 Identification

- **Product identifier**
- **Trade name:** CROSSLINKER D (LOWICRYL HM20)
- **Article number:** 14340(D)
- **CAS Number:**
109-16-0
- **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. 2 H351 Suspected of causing cancer.



GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

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

STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**
- **GHS label elements** The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS05



GHS07



GHS08

- **Signal word** Danger

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· **Hazard statements**

- Harmful if swallowed.*
- Causes skin irritation.*
- Causes serious eye damage.*
- May cause an allergic skin reaction.*
- Suspected of causing genetic defects.*
- Suspected of causing cancer.*
- May cause respiratory irritation.*

· **Precautionary statements**

- Avoid breathing dust/fume/gas/mist/vapors/spray*
- Wear protective gloves.*
- Wear eye protection / face protection.*
- 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.*
- Obtain special instructions before use.*
- Do not handle until all safety precautions have been read and understood.*
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.*
- Immediately call a POISON CENTER/doctor.*
- Specific treatment (see on this label).*
- IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.*
- IF INHALED: Remove person to fresh air and keep comfortable for breathing.*
- Wash contaminated clothing before reuse.*
- IF exposed or concerned: Get medical advice/attention.*
- If skin irritation or rash occurs: Get medical advice/attention.*
- Rinse mouth.*
- IF ON SKIN: Wash with plenty of water.*
- Take off contaminated clothing and wash it before reuse.*
- Store locked up.*
- Store in a well-ventilated place. Keep container tightly closed.*
- Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	1	Fire = 1
REACTIVITY	0	Reactivity = 0

· **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: Substances**
- **CAS No. Description**
109-16-0 Triethylene glycol dimethacrylate

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. Then 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:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
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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7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
*Ensure good ventilation/exhaustion at the workplace.
 Prevent formation of aerosols.*
- **Information about protection against explosions and fires:** *No special measures required.*
- **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:** *Not required.*
- **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.
 Avoid contact with the skin.
 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

- **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.

- **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.

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· **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

Form:	Liquid
Color:	Colorless
Odor:	Mild
Odor threshold:	Not determined.

· **pH-value:** Not determined.· **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

· **Flash point:** Not applicable.· **Flammability (solid, gaseous):** Not flammable.· **Ignition temperature:****Decomposition temperature:** Not determined.· **Auto igniting:** Not determined.· **Danger of explosion:** Product does not present an explosion hazard.· **Explosion limits:**

Lower:	Not determined.
Upper:	Not determined.

· **Vapor pressure:** Not determined.· **Density at 20 °C (68 °F):** 1.07 g/cm³ (8.929 lbs/gal)· **Relative density** Not determined.· **Vapor density** Not determined.· **Evaporation rate** Not determined.· **Solubility in / Miscibility with****Water:** Not miscible or difficult to mix.· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:**

Dynamic:	Not determined.
Kinematic:	Not determined.

· **Solvent content:**

Organic solvents:	0.0 %
VOC content:	0.0 g/l / 0.00 lb/gl

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· **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:**
- **Primary irritant effect:**
- **on the skin:** *Irritant to skin and mucous membranes.*
- **on the eye:** *Strong irritant with the danger of severe eye injury.*
- **Sensitization:** *Sensitization possible through skin contact.*
- **Additional toxicological information:**
- **Carcinogenic categories**

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

123-31-9	hydroquinone	3
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· **NTP (National Toxicology Program)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety Health Administration)**

Substance is not listed.

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.*
- **Ecotoxicological effects:**
- **Remark:** *Very toxic for fish*
- **Additional ecological information:**
- **General notes:**
- *Water hazard class 1 (Self-assessment): slightly hazardous for water*
- *Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.*
- *Also poisonous for fish and plankton in water bodies.*
- *Very toxic for aquatic organisms*
- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*

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· **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.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, ADR, IMDG, IATA 	UN1993
<ul style="list-style-type: none"> · UN proper shipping name · DOT · ADR · IMDG, IATA 	Flammable liquids, n.o.s. 1993 Flammable liquids, n.o.s., ENVIRONMENTALLY HAZARDOUS FLAMMABLE LIQUID, N.O.S.
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT, ADR, IMDG, IATA · Class 	Void
<ul style="list-style-type: none"> · Packing group · DOT, ADR, IMDG, IATA 	III
<ul style="list-style-type: none"> · Environmental hazards: 	Not applicable.
<ul style="list-style-type: none"> · Special precautions for user · Stowage Category 	Not applicable. A
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: · DOT · Quantity limitations 	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
<ul style="list-style-type: none"> · ADR · 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"> · 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

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· UN "Model Regulation": Void

15 Regulatory information

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

- Section 355 (extremely hazardous substances):

123-31-9 hydroquinone

- Section 313 (Specific toxic chemical listings):

123-31-9 hydroquinone

- TSCA (Toxic Substances Control Act):

Substance is listed.

- Proposition 65

- Chemicals known to cause cancer:

Substance is not listed.

- Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

- Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

- Chemicals known to cause developmental toxicity:

Substance is not listed.

- Carcinogenic categories

- EPA (Environmental Protection Agency)

Substance is not listed.

- TLV (Threshold Limit Value established by ACGIH)

123-31-9 hydroquinone

A3

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

Substance is not listed.

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

- Hazard pictograms



GHS05

GHS07

GHS08

- Signal word *Danger*

- Hazard statements

*Harmful if swallowed.**Causes skin irritation.**Causes serious eye damage.**May cause an allergic skin reaction.**Suspected of causing genetic defects.**Suspected of causing cancer.**May cause respiratory irritation.*

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Trade name: *CROSSLINKER D (LOWICRYL HM20)*

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· **Precautionary statements**

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

Wear protective gloves.

Wear eye protection / face protection.

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.

Obtain special instructions before use.

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

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Immediately call a POISON CENTER/doctor.

Specific treatment (see on this label).

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

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

Wash contaminated clothing before reuse.

IF exposed or concerned: Get medical advice/attention.

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

Rinse mouth.

IF ON SKIN: Wash with plenty of water.

Take off contaminated clothing and wash it before reuse.

Store locked up.

Store in a well-ventilated place. Keep container tightly closed.

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

· **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** 01/10/2017 / -

· **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

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)

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

Acute Tox. 4: Acute toxicity – Category 4

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

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Skin Sens. 1B: Skin sensitisation – Category 1B

Muta. 2: Germ cell mutagenicity – Category 2

Carc. 2: Carcinogenicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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

Printing date 10.01.2017

Revision: 10.01.2017

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

· **Product identifier**

· **Trade name:** CROSSLINKER D (LOWICRYL HM20)

· **Article number:** 14340(D)

· **CAS Number:**

109-16-0

· **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: sgkck@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)

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 Hazards identification

· **Classification of the substance or mixture**



GHS08 health hazard

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 2 H351 Suspected of causing cancer.



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

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Skin Irrit. 2 H315 Causes skin irritation.

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

STOT SE 3 H335 May cause respiratory irritation.

· **Label elements**

· **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS05 GHS07 GHS08

· **Signal word** *Danger*

· **Hazard statements**

Harmful if swallowed.

Causes skin irritation.

Causes serious eye damage.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

Suspected of causing cancer.

May cause respiratory irritation.

· **Precautionary statements**

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

Wear protective gloves.

Wear eye protection / face protection.

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.

Obtain special instructions before use.

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

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

Continue rinsing.

Immediately call a POISON CENTER/doctor.

Specific treatment (see on this label).

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

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

Wash contaminated clothing before reuse.

IF exposed or concerned: Get medical advice/attention.

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

Rinse mouth.

IF ON SKIN: Wash with plenty of water.

Take off contaminated clothing and wash it before reuse.

Store locked up.

Store in a well-ventilated place. Keep container tightly closed.

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

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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3 Composition/information on ingredients

- **Chemical characterisation: Substances**
- **CAS No. Description**
109-16-0 Triethylene glycol dimethacrylate

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. Then 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 Firefighting 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:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
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: **CROSSLINKER D (LOWICRYL HM20)**

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7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **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/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:** Not required.
- **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.
Avoid contact with the skin.
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.

- **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.

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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· **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

· Form:	Liquid
· Colour:	Colourless
· Odour:	Mild
· Odour threshold:	Not determined.

· **pH-value:** Not determined.· **Change in condition**

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	Undetermined.

· **Flash point:** Not applicable.· **Flammability (solid, gaseous):** Not applicable.· **Ignition temperature:**· **Decomposition temperature:** Not determined.· **Self-igniting:** Not determined.· **Danger of explosion:** Product does not present an explosion hazard.· **Explosion limits:**

· Lower:	Not determined.
· Upper:	Not determined.

· **Vapour pressure:** Not determined.

· Density at 20 °C:	1.07 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.

· **Solubility in / Miscibility with water:** Not miscible or difficult to mix.· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:**

· Dynamic:	Not determined.
· Kinematic:	Not determined.

· **Solvent content:**

· Organic solvents:	0.0 %
· VOC (EC)	0.00 %

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· **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**
- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Strong irritant with the danger of severe eye injury.
- **Respiratory or skin sensitisation** Sensitisation possible through skin contact.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
Muta. 2, Carc. 2

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.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms
- **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.

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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number	
· ADG, IMDG, IATA	UN1993
· ADN	not regulated
· UN proper shipping name	
· ADG	1993 FLAMMABLE LIQUID, N.O.S., ENVIRONMENTALLY HAZARDOUS
· ADN	not regulated
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S.
· Transport hazard class(es)	
· ADG, ADN, IMDG, IATA	
· Class	not regulated
· Packing group	
· ADG, IMDG, IATA	III
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Stowage Category	A
· Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· 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":	not regulated

15 Regulatory information

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

- **Australian Inventory of Chemical Substances**

Substance is listed.

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

123-31-9 hydroquinone

S2, S4, S6

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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· **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**

GHS05 GHS07 GHS08

· **Signal word** *Danger*· **Hazard statements**

Harmful if swallowed.

Causes skin irritation.

Causes serious eye damage.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

Suspected of causing cancer.

May cause respiratory irritation.

· **Precautionary statements**

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

Wear protective gloves.

Wear eye protection / face protection.

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.

Obtain special instructions before use.

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

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

Continue rinsing.

Immediately call a POISON CENTER/doctor.

Specific treatment (see on this label).

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

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

Wash contaminated clothing before reuse.

IF exposed or concerned: Get medical advice/attention.

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

Rinse mouth.

IF ON SKIN: Wash with plenty of water.

Take off contaminated clothing and wash it before reuse.

Store locked up.

Store in a well-ventilated place. Keep container tightly closed.

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

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** Substance is not listed.

· **Seveso category E1** Hazardous to the Aquatic Environment

· **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t

· **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t

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

-AU-

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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

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

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4

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

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Skin Sens. 1B: Skin sensitisation – Category 1B

Muta. 2: Germ cell mutagenicity – Category 2

Carc. 2: Carcinogenicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

-AU-

Safety Data Sheet

acc. to OSHA HCS

Printing date 01/10/2017

Reviewed on 01/10/2017

1 Identification

- **Product identifier**
- **Trade name:** CROSSLINKER D (LOWICRYL HM20)
- **Article number:** 14340(D)
- **CAS Number:**
109-16-0
- **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 2

H351 Suspected of causing cancer.



GHS05 Corrosion

Serious Eye Damage - Category 1

H318 Causes serious eye damage.



GHS07

Acute Toxicity (Oral) - Category 4

H302 Harmful if swallowed.

Skin Irritation - Category 2

H315 Causes skin irritation.

Skin Sensitizer - Category 1B

H317 May cause an allergic skin reaction.

Specific Target Organ Toxicity - Single Exposure -
Category 3

H335 May cause respiratory irritation.

- **Label elements**

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

- **Hazard pictograms**



GHS05



GHS07



GHS08

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· **Signal word** *Danger*

· **Hazard statements**

*Harmful if swallowed.
Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
Suspected of causing genetic defects.
Suspected of causing cancer.
May cause respiratory irritation.*

· **Precautionary statements**

*Avoid breathing dust/fume/gas/mist/vapours/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
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.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Specific treatment (see on this label).
IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF exposed or concerned: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.
Rinse mouth.
IF ON SKIN: Wash with plenty of water.
Take off contaminated clothing and wash it before reuse.
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Hazard description:**

· **WHMIS-symbols:**

D2B - Toxic material causing other toxic effects



· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



*Health = 2
Fire = 1
Reactivity = 0*

· **HMIS-ratings (scale 0 - 4)**



*Health = 2
Fire = 1
Reactivity = 0*

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Trade name: *CROSSLINKER D (LOWICRYL HM20)*

(Contd. of page 2)

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
109-16-0 Triethylene glycol dimethacrylate

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. Then 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:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
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: **CROSSLINKER D (LOWICRYL HM20)**

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7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** No special measures required.
- **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:** Not required.
- **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.
Avoid contact with the skin.
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

- **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.

- **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.

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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· **Eye protection:**

Tightly sealed goggles

9 Physical and chemical properties

· **Information on basic physical and chemical properties**· **General Information**· **Appearance:**

· Form:	Liquid
· Color:	Colorless
· Odor:	Mild
· Odor threshold:	Not determined.

· **pH-value:** Not determined.· **Change in condition**

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	Undetermined.

· **Flash point:** Not applicable.· **Flammability (solid, gaseous):** Not flammable.· **Ignition temperature:**· **Decomposition temperature:** Not determined.· **Auto igniting:** Not determined.· **Danger of explosion:** Product does not present an explosion hazard.· **Explosion limits:**

· Lower:	Not determined.
· Upper:	Not determined.

· **Vapor pressure:** Not determined.

· Density at 20 °C:	1.07 g/cm ³
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.

· **Solubility in / Miscibility with**· **Water:** Not miscible or difficult to mix.· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:**

· Dynamic:	Not determined.
· Kinematic:	Not determined.

· **Organic solvents:** 0.0 %· **Other information** No further relevant information available.

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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:**
- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**
- **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)	
123-31-9	3

· NTP (National Toxicology Program)
Substance is not listed.

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.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
- Water hazard class 1 (Self-assessment): slightly hazardous for water
- Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- Also poisonous for fish and plankton in water bodies.
- Very toxic for aquatic organisms
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

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Reviewed on 01/10/2017

Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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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.

14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, TDG, IMDG, IATA · ADN 	<p>UN1993 Void</p>
<ul style="list-style-type: none"> · UN proper shipping name · DOT · TDG · ADN · IMDG, IATA 	<p>Flammable liquids, n.o.s. 1993 Flammable liquids, n.o.s., ENVIRONMENTALLY HAZARDOUS Void FLAMMABLE LIQUID, N.O.S.</p>
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT, TDG, ADN, IMDG, IATA · Class 	<p>Void</p>
<ul style="list-style-type: none"> · Packing group · DOT, TDG, IMDG, IATA 	<p>III</p>
<ul style="list-style-type: none"> · Environmental hazards: 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · Special precautions for user · Stowage Category 	<p>Not applicable. A</p>
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	<p>Not applicable.</p>
<ul style="list-style-type: none"> · Transport/Additional information: · DOT · Quantity limitations 	<p>On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L</p>
<ul style="list-style-type: none"> · TDG · Excepted quantities (EQ) 	<p>Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p>5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</p>
<ul style="list-style-type: none"> · UN "Model Regulation": 	<p>Void</p>

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15 Regulatory information

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

· **Sara**

· **Section 355 (extremely hazardous substances):**

123-31-9	hydroquinone
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· **Section 313 (Specific toxic chemical listings):**

123-31-9	hydroquinone
----------	--------------

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

Substance is listed.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**

109-16-0	Triethylene glycol dimethacrylate
----------	-----------------------------------

· **Canadian Ingredient Disclosure list (limit 0.1%)**

Substance is not listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

Substance is listed.

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

· **Hazard pictograms**



GHS05 GHS07 GHS08

· **Signal word** *Danger*

· **Hazard statements**

Harmful if swallowed.

Causes skin irritation.

Causes serious eye damage.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

Suspected of causing cancer.

May cause respiratory irritation.

· **Precautionary statements**

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

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

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.

Obtain special instructions before use.

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

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

Continue rinsing.

Immediately call a POISON CENTER/doctor.

Specific treatment (see on this label).

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

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

IF exposed or concerned: Get medical advice/attention.

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

Rinse mouth.

IF ON SKIN: Wash with plenty of water.

Take off contaminated clothing and wash it before reuse.

Store locked up.

Store in a well-ventilated place. Keep container tightly closed.

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

· **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** 01/10/2017 / -

· **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

CA

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

Printing date 10.01.2017

Revision: 10.01.2017

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

- **Product identifier**
- **Trade name:** CROSSLINKER D (LOWICRYL HM20)
- **Article number:** 14340(D)
- **CAS Number:**
109-16-0
- **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
- **Further information obtainable from:** Product safety department
- **Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 Hazards identification

- **Classification of the substance or mixture**



health hazard

Muta. 2 H341 Suspected of causing genetic defects.

Carc. 2 H351 Suspected of causing cancer.



corrosion

Eye Dam. 1 H318 Causes serious eye damage.



environment

Aquatic Acute 1 H400 Very toxic to aquatic life.



Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

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

STOT SE 3 H335 May cause respiratory irritation.

- **Label elements**

- **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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· **Hazard pictograms**

GHS05 GHS07 GHS08 GHS09

· **Signal word** *Danger*· **Hazard statements***Harmful if swallowed.**Causes skin irritation.**Causes serious eye damage.**May cause an allergic skin reaction.**Suspected of causing genetic defects.**Suspected of causing cancer.**May cause respiratory irritation.**Very toxic to aquatic life.*· **Precautionary statements***Avoid breathing dust/fume/gas/mist/vapours/spray.**IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.**Continue rinsing.**Immediately call a POISON CENTER/doctor.**Specific treatment (see on this label).**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.*· **vPvB:** *Not applicable.*

3 Composition/information on ingredients

· **Chemical characterisation: Substances**· **CAS No. Description**

109-16-0 Triethylene glycol dimethacrylate

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. Then 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.*

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Trade name: CROSSLINKER D (LOWICRYL HM20)

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

5 Firefighting 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:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
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.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **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/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:** Not required.
- **Additional information:** The lists valid during the making were used as basis.

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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- **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.
Avoid contact with the skin.
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.
- **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:	Colourless
· Odour:	Mild
· Odour threshold:	Not determined.

· **pH-value:** Not determined.

· Change in condition

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	Undetermined.

· **Flash point:** Not applicable.

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

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Self-igniting: Not determined.	
· Danger of explosion: Product does not present an explosion hazard.	
· Explosion limits:	
· Lower:	Not determined.
· Upper:	Not determined.
· Vapour pressure: Not determined.	
· Density at 20 °C: 1,07 g/cm ³	
· Relative density: Not determined.	
· Vapour density: Not determined.	
· Evaporation rate: Not determined.	
· Solubility in / Miscibility with water: Not miscible or difficult to mix.	
· Partition coefficient (n-octanol/water): Not determined.	
· Viscosity:	
· Dynamic:	Not determined.
· Kinematic:	Not determined.
· Solvent content:	
· Organic solvents:	0,0 %
· VOC (EC)	0,00 %
· 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:**
- **Primary irritant effect:**
- **Skin corrosion/irritation:** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation:** Strong irritant with the danger of severe eye injury.
- **Respiratory or skin sensitisation:** Sensitisation possible through skin contact.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):**
Muta. 2, Carc. 2

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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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.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms
- **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.

14 Transport information

· UN-Number	
· ADR, IMDG, IATA	UN1993
· ADN	not regulated
· UN proper shipping name	
· ADR	1993 FLAMMABLE LIQUID, N.O.S., ENVIRONMENTALLY HAZARDOUS
· ADN	not regulated
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S.
· Transport hazard class(es)	
· ADR, ADN, IMDG, IATA	
· Class	not regulated
· Packing group	
· ADR, IMDG, IATA	III
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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· Stowage Category	A
· 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":	not regulated

15 Regulatory information

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

· **GHS label elements**

The substance is classified and labelled according to the Globally Harmonised System (GHS).

· **Hazard pictograms**



GHS05 GHS07 GHS08 GHS09

· **Signal word** *Danger*

· **Hazard statements**

Harmful if swallowed.

Causes skin irritation.

Causes serious eye damage.

May cause an allergic skin reaction.

Suspected of causing genetic defects.

Suspected of causing cancer.

May cause respiratory irritation.

Very toxic to aquatic life.

· **Precautionary statements**

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

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

Continue rinsing.

Immediately call a POISON CENTER/doctor.

Specific treatment (see on this label).

Store locked up.

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

· **Directive 2012/18/EU**

· **Named dangerous substances - ANNEX I** Substance is not listed.

· **Seveso category** E1 Hazardous to the Aquatic Environment

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Trade name: CROSSLINKER D (LOWICRYL HM20)

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- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 100 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 200 t
- **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

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

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4

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

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Skin Sens. 1B: Skin sensitisation – Category 1B

Muta. 2: Germ cell mutagenicity – Category 2

Carc. 2: Carcinogenicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

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

- **1.1 Product identifier**
- **Trade name:** CROSSLINKER D (LOWICRYL HM20)
- **Article number:** 14340(D)
- **CAS Number:**
109-16-0
- **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: sgkceck@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. 2 H351 Suspected of causing cancer.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1B 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 substance is classified and labelled according to the CLP regulation.

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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· **Hazard pictograms**

GHS07 GHS08 GHS09

· **Signal word** Warning· **Hazard statements**

- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H317 May cause an allergic skin reaction.
- H341 Suspected of causing genetic defects.
- H351 Suspected of causing cancer.
- H335 May cause respiratory irritation.
- H400 Very toxic to aquatic life.

· **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.
- P321 Specific treatment (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

· **3.1 Chemical characterisation: Substances**· **CAS No. Description**

109-16-0 Triethylene glycol dimethacrylate

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. Then 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:** No special measures required.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Not required.
- **6.2 Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
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.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **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:** Not required.
- **Additional information:** The lists valid during the making were used as basis.

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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- **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.
Avoid contact with the skin.
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.
- **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:	Colourless
Odour:	Mild
Odour threshold:	Not determined.

· **pH-value:** Not determined.

· Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.

· **Flash point:** Not applicable.

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

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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· Ignition temperature:	
· Decomposition temperature:	Not determined.
· Self-igniting: Not determined.	
· Danger of explosion: Product does not present an explosion hazard.	
· Explosion limits:	
· Lower:	Not determined.
· Upper:	Not determined.
· Vapour pressure: Not determined.	
· Density at 20 °C: 1.07 g/cm ³	
· Relative density: Not determined.	
· Vapour density: Not determined.	
· Evaporation rate: Not determined.	
· Solubility in / Miscibility with water: Not miscible or difficult to mix.	
· Partition coefficient (n-octanol/water): Not determined.	
· Viscosity:	
· Dynamic:	Not determined.
· Kinematic:	Not determined.
· Solvent content:	
· Organic solvents:	0.0 %
· VOC (EC)	0.00 %
· 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.
- **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.

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity**
Suspected of causing genetic defects.
- **Carcinogenicity**
Suspected of causing 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.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms
- **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.

SECTION 14: Transport information

- | | |
|---------------------------------------|--|
| · 14.1 UN-Number | |
| · ADR, IMDG, IATA | UN1993 |
| · ADN | not regulated |
| · 14.2 UN proper shipping name | |
| · ADR | 1993 FLAMMABLE LIQUID, N.O.S., ENVIRONMENTALLY HAZARDOUS |
| · ADN | not regulated |
| · IMDG, IATA | FLAMMABLE LIQUID, N.O.S. |

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Trade name: **CROSSLINKER D (LOWICRYL HM20)**

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

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 Substance is not listed.**
- **Seveso category E1 Hazardous to the Aquatic Environment**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements 100 t**
- **Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t**
- **REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3**
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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.

· **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

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

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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Trade name: *CROSSLINKER D (LOWICRYL HM20)*

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*Acute Tox. 4: Acute toxicity – Category 4**Skin Irrit. 2: Skin corrosion/irritation – Category 2**Eye Irrit. 2: Serious eye damage/eye irritation – Category 2**Skin Sens. 1B: Skin sensitisation – Category 1B**Muta. 2: Germ cell mutagenicity – Category 2**Carc. 2: Carcinogenicity – Category 2**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3**Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1*

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 2017.01.10

在 2017.01.10 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: CROSSLINKER D (LOWICRYL HM20)
- 商品编号: 14340(D)
- CAS 编号:
109-16-0
- 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:

无色的, 液体, 吞咽有害。引起皮肤刺激。引起严重的眼睛损伤。可能引起皮肤过敏性反应。怀疑可致遗传性缺陷。怀疑致癌。可刺激呼吸道。对水生生物毒性非常大。

· GHS危险性类别



健康危险

生殖细胞致突变性 第2类
致癌性 第2类

H341 怀疑可致遗传性缺陷
H351 怀疑致癌



腐蚀

严重眼睛损伤/眼睛刺激性 第1类

H318 引起严重的眼睛损伤



环境

对水环境的危害(急性) 第1类

H400 对水生生物毒性非常大



急性毒性(经口) 第4类

H302 吞咽有害

皮肤腐蚀/刺激 第2类

H315 引起皮肤刺激

敏化(皮肤) 第1B类

H317 可能引起皮肤过敏性反应

特定靶器官系统毒性(单次接触) 第3类

H335 可刺激呼吸道。

(在 2 页继续)

化学品安全技术说明书

根据 GB/T 16483-2008, GB/T 17519-2013

打印日期 2017.01.10

在 2017.01.10 审核

化学品中文(英文)名称, 化学品俗名或商品名 : CROSSLINKER D (LOWICRYL HM20)

(在 1 页继续)

· 标签因素

· GHS卷标元素 本化学物质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



GHS05 GHS07 GHS08 GHS09

· 名称 危险

· 危险字句

吞咽有害
引起皮肤刺激
引起严重的眼睛损伤
可能引起皮肤过敏反应
怀疑可致遗传性缺陷
怀疑致癌
可刺激呼吸道。
对水生生物毒性非常大

· 警戒字句

· 预防措施

避免吸入粉尘/烟/气体/烟雾/蒸气/喷雾

· 事故响应

如进入眼睛：用水小心冲洗几分钟。如戴隐型眼镜并可方便地取出，取出隐型眼镜。继续冲洗。
立即呼叫解毒中心/医生
具体治疗(见本标签上的)

· 安全储存

存放处须加锁。

· 废弃处置

按照本地 / 地区 / 国家 / 国际规例处理内含物 / 容器。

· 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

· 纯品

· CAS号 化学名, 通用名

109-16-0 三甘醇二-2-甲基丙烯酸酯

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,请让病人侧趟以便移动。

· 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. 然后咨询医生。

· 食入: 马上召唤医生。

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(在 2 页继续)

- **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:** 没有要求特别的措施.

6 泄漏应急处理

- **保护措施** 没有要求.
- **环境保护措施:**
如果渗入了水源或污水系统,请通知有关当局.
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.
防止气溶胶的形成.
- **有关火灾及防止爆炸的资料:** 不需特别的措施.
- **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.
- **控制变数**
- **在工作场需要监控的限值成分** 不要求.
- **额外的资料:** 制作期间有效的清单将作为基础来使用.

(在 4 页继续)

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(在 3 页继续)

· 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.

避免和皮肤接触.

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

· **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: 无色的

· 气味: 温和的

· 嗅觉阈限 未决定.

· pH值: 未决定.

· 条件的更改

· 熔点: 未确定的

· 沸点/初沸点和沸程: 未确定的

· 闪点: 不适用的

· 可燃性(固体、气体): 不适用的

· 点火温度:

· 分解温度: 未决定.

· 自燃温度: 未决定.

· 爆炸的危险性: 该产品并没有爆炸的危险

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(在 4 页继续)

- | | |
|----------------------|------------------------|
| · 爆炸极限: | |
| 较低: | 未决定. |
| 较高: | 未决定. |
| · 蒸气压: | 未决定. |
| · 密度在 20 °C: | 1.07 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: | 不能拌和的或难以拌和 |
| · 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. |
| 有机溶剂: | 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。

11 毒理学信息

- **对毒性学影响的信息**
- **急性毒性:**
- **主要的刺激性影响:**
- **皮肤:** 刺激皮肤和粘膜。
- **在眼睛上面:** 强烈的刺激性和造成严重伤害眼睛的危险。
- **致敏作用:** 通过皮肤接触可能造成敏化作用。
- **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2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。

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(在 5 页继续)

- **生态毒性的影响:**
- **备注:** 对鱼类有剧毒
- **额外的生态学资料:**
- **总括注解:**
水危害级别 1(德国规例) (通过名单进行自我评估): 对水是稍微危害的
不要让未稀释或大量的产品接触地下水、水道或者污水系统。
对水体中的鱼和浮游生物也有毒害。
对水中的有机物有剧毒。
- **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.

14 运输信息

· 联合国危险货物编号(UN号)	
· ADR, IMDG, IATA	UN1993
· ADN	无效
· UN适当装船名	
· ADR	1993 FLAMMABLE LIQUID, N.O.S., ENVIRONMENTALLY HAZARDOUS
· ADN	无效
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S.
· 运输危险等级	
· ADR, ADN, IMDG, IATA	
· 级别	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	不适用的
· Stowage Category	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

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(在 6 页继续)

· 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 "标准规定":	无效

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
- 新化学物质环境管理办法

- 中国现有化学物质名录

有列出物质。

- GHS卷标元素 本化学物质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



GHS05 GHS07 GHS08 GHS09

- 名称 危险

- 危险字句

吞咽有害
引起皮肤刺激
引起严重的眼睛损伤
可能引起皮肤过敏反应
怀疑可致遗传性缺陷
怀疑致癌
可刺激呼吸道。
对水生生物毒性非常大

- 警戒字句

- 预防措施

避免吸入粉尘/烟/气体/烟雾/蒸气/喷雾

- 事故响应

如进入眼睛：用水小心冲洗几分钟。如戴隐型眼镜并可方便地取出，取出隐型眼镜。继续冲洗。
立即呼叫解毒中心/医生
具体治疗(见本标签上的)

- 安全储存

存放处须加锁。

- 废弃处置

按照本地 / 地区 / 国家 / 国际规例处理内含物 / 容器。

- 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。

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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

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

PBT: 持久性生物累积性有毒物质

vPvB: very Persistent and very Bioaccumulative

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

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

严重眼睛损伤/眼睛刺激性 第1类: Serious eye damage/eye irritation – Category 1

敏化(皮肤) 第1B类: Skin sensitisation – Category 1B

生殖细胞致突变性 第2类: Germ cell mutagenicity – Category 2

致癌性 第2类: Carcinogenicity – Category 2

特定靶器官系统毒性(单次接触) 第3类: Specific target organ toxicity (single exposure) – Category 3

对环境的危害(急性) 第1类: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

-CN-

Bezpečnostní list podle 1907/2006/ES, Článek 31

Datum vydání: 10.01.2017

Revize: 10.01.2017

ODDÍL 1: Identifikace látky/směsi a společnosti/podniku

- **1.1 Identifikátor výrobku**
- **Obchodní označení:** CROSSLINKER D (LOWICRYL HM20)
- **Číslo výrobku:** 14340(D)
- **Číslo CAS:**
109-16-0
- **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: sgkceck@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. 2 H351 Podezření na vyvolání rakoviny.



GHS09 životní prostředí

Aquatic Acute 1 H400 Vysoce toxický pro vodní organismy.



GHS07

Acute Tox. 4 H302 Zdraví škodlivý při požití.

Skin Irrit. 2 H315 Dráždí kůži.

Eye Irrit. 2 H319 Způsobuje vážné podráždění očí.

Skin Sens. 1B 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** Látka je klasifikována a označena podle nařízení CLP.

(pokračování na straně 2)

Bezpečnostní list

podle 1907/2006/ES, Článek 31

Datum vydání: 10.01.2017

Revize: 10.01.2017

Obchodní označení: **CROSSLINKER D (LOWICRYL HM20)**

(pokračování strany 1)

· Výstražné symboly nebezpečnosti



GHS07 GHS08 GHS09

· Signální slovo Varování

· Standardní věty o nebezpečnosti

H302 Zdraví škodlivý při požití.

H315 Dráždí kůži.

H319 Způsobuje vážné podráždění očí.

H317 Může vyvolat alergickou kožní reakci.

H341 Podezření na genetické poškození.

H351 Podezření na vyvolání rakoviny.

H335 Může způsobit podráždění dýchacích cest.

H400 Vysoce toxický pro vodní organismy.

· 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.

P321 Odborné ošetření (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

· 3.1 Chemická charakteristika: Látky

· Číslo CAS:

109-16-0 Triethylene glycol dimethacrylate

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:

Otevřené oči po více minut oplachovat pod tekoucí vodou a poradit se s lékařem.

· Při požití:

Ihned vyhledat lékaře.

· 4.2 Nejdůležitější akutní a opožděné symptomy a účinky

Další relevantní informace nejsou k dispozici.

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- **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:** Nejsou nutná žádná zvláštní opatření.

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:**
Při vniknutí do kanalizace nebo vodního toku informovat příslušné orgány.
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, štěrkový 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.
Zamezit vytváření aerosolů.
- **Upozornění k ochraně před ohněm a explozí:** Nejsou nutná žádná zvláštní opatření.
- **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.
- **8.1 Kontrolní parametry**
- **Kontrolní parametry:** Odpadá
- **Další upozornění:** Jako podklad sloužily při zhotovení platné listiny.

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- **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.
Zabránit styku s pokožkou.
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.
- **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:	Bezbarvá
Zápach (vůně):	Jemný
Prahová hodnota zápachu:	Není určeno.

· **Hodnota pH:** Není určeno.

· Změna stavu

Teplota (rozsah teplot) tání:	Není určeno.
Teplota (rozsah teplot) varu:	Není určeno.

· **Bod vzplanutí:** Nedá se použít.

· **Zápalnost (tuhé, plynné skupenství):** Nedá se použít.

· Zápalná teplota:

Teplota rozkladu: Není určeno.

· **Samozápalnost:** Není určeno.

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· Nebezpečí exploze:	<i>U produktu nehrozí nebezpečí exploze.</i>
· Meze výbušnosti:	
<i>Dolní mez:</i>	<i>Není určeno.</i>
<i>Horní mez:</i>	<i>Není určeno.</i>
· Tenze par:	<i>Není určeno.</i>
· Hustota při 20 °C:	<i>1,07 g/cm³</i>
· Relativní hustota	<i>Není určeno.</i>
· Hustota par	<i>Není určeno.</i>
· Rychlost odpařování	<i>Není určeno.</i>
· Rozpuštnost ve / směsitelnost s vodě:	<i>Vůbec nemísitelná nebo jen málo 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>0,0 %</i>
<i>VOC (EC)</i>	<i>0,00 %</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.*

ODDÍL 11: Toxikologické informace

- **11.1 Informace o toxikologických účincích**
- **Akutní toxicita**
Zdraví škodlivý při požití.
- **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.

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- **Karcinogenita**
Podezření na vyvolání rakoviny.
- **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.
- **Ekotoxické účinky:**
- **Poznámka:** Velmi jedovatý pro ryby.
- **Další ekologické údaje:**
- **Všeobecná upozornění:**
Třída ohrožení vody 1 (Samozářazení): slabé ohrožení vody
Nesmí se dostat nezředěný nebo ve větším množství do spodní vody, povodí nebo kanalizace.
V povodích je také jedovatá pro ryby a plankton.
velmi jedovatá pro vodní organismy
- **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.

ODDÍL 14: Informace pro přepravu

- | | |
|--|---|
| · 14.1 UN číslo | |
| · ADR, IMDG, IATA | UN1993 |
| · ADN | odpadá |
| · 14.2 Oficiální (OSN) pojmenování pro přepravu | |
| · ADR | 1993 LÁTKA HOŘLAVÁ, KAPALNÁ, J.N., OHROŽUJÍCÍ ŽIVOTNÍ PROSTŘEDÍ |
| · ADN | odpadá |
| · IMDG, IATA | FLAMMABLE LIQUID, N.O.S. |

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· 14.3 Třída/třídy nebezpečnosti pro přepravu	
· ADR, ADN, IMDG, IATA	
· třída	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	Nedá se použít.
· Stowage Category	A
· 14.7 Hromadná přeprava podle přílohy II úmluvy MARPOL a předpisu IBC	Nedá se použít.
· Přeprava/další údaje:	
· ADR	
· Omezené množství (LQ)	5L
· Vyňatá množství (EQ)	Kód: E1 Nejvyšší čisté množství na vnitřní obal: 30 ml Nejvyšší čisté množství na vnější obal: 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":	odpadá

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** Látka neobsažena.
- Kategorie Seveso E1 Nebezpečnost pro vodní prostředí
- Kvalifikační množství (v tunách) při uplatnění požadavků pro podlimitní množství 100 t
- Kvalifikační množství (v tunách) při uplatnění požadavků pro nadlimitní množství 200 t
- Rady (ES) č. 1907/2006 **PŘÍLOHA XVII** Omezující podmínky: 3
- 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.

· 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

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

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

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vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Akutní toxicita – Kategorie 4

Skin Irrit. 2: Žíravost/dráždivost pro kůži – Kategorie 2

Eye Irrit. 2: Vážné poškození očí / podráždění očí – Kategorie 2

Skin Sens. 1B: Senzibilizace kůže – Kategorie 1B

Muta. 2: Mutagenita v zárodečných buňkách – Kategorie 2

Carc. 2: Karcinogenita – Kategorie 2

STOT SE 3: Toxicita pro specifické cílové orgány (jednorázová expozice) – Kategorie 3

Aquatic Acute 1: Nebezpečnost pro vodní prostředí - akutní nebezpečnost pro vodní prostředí – Kategorie 1

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Veiligheidsinformatieblad

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

· 1.1 Productidentificatie

· **Handelsnaam:** CROSSLINKER D (LOWICRYL HM20)

· **Artikelnummer:** 14340(D)

· **CAS-nummer:**

109-16-0

· **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 verstreker 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

· **Inlichtinggevendende 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. 2

H351 Verdacht van het veroorzaken van kanker.



GHS09 milieu

Aquatic Acute 1 H400 Zeer giftig voor in het water levende organismen.



GHS07

Acute Tox. 4

H302 Schadelijk bij inslikken.

Skin Irrit. 2

H315 Veroorzaakt huidirritatie.

Eye Irrit. 2

H319 Veroorzaakt ernstige oogirritatie.

Skin Sens. 1B

H317 Kan een allergische huidreactie veroorzaken.

(Vervolg op blz. 2)

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STOT SE 3 H335 Kan irritatie van de luchtwegen veroorzaken.

- **2.2 Etiketteringselementen**
- **Etikettering overeenkomstig Verordening (EG) nr. 1272/2008**
De stof/product is geclassificeerd en geëtiketteerd volgens de CLP-verordening.
- **Gevarenpictogrammen**



GHS07 GHS08 GHS09

- **Signaalwoord** Waarschuwing
- **Gevarenaanduidingen**
 - H302 Schadelijk bij inslikken.
 - H315 Veroorzaakt huidirritatie.
 - H319 Veroorzaakt ernstige oogirritatie.
 - H317 Kan een allergische huidreactie veroorzaken.
 - H341 Verdacht van het veroorzaken van genetische schade.
 - H351 Verdacht van het veroorzaken van kanker.
 - H335 Kan irritatie van de luchtwegen veroorzaken.
 - H400 Zeer giftig voor in het water levende organismen.
- **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.
 - P321 Specifieke behandeling vereist (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

- **3.1 Chemische karakterisering: Stoffen**
- **CAS-Nr. omschrijving**
109-16-0 Triethylene glycol dimethacrylate

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.
- **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.

(Vervolg op blz. 3)

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(Vervolg van blz. 2)

- **Na oogcontact:** Ogen met open ooglid een aantal minuten onder stromend water afspoelen en 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:** Geen bijzondere maatregelen nodig.

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:**
Bij indringen in afvalwater of riolering moet de bevoegde instantie gewaarschuwd worden.
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.
Aërosolvorming vermijden.
- **Informatie m.b.t. brand- en ontploffingsgevaar:** Geen bijzondere maatregelen noodzakelijk.
- **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.
- **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:** Vervalt.

(Vervolg op blz. 4)

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- **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.
 - Aanraking met de huid vermijden.
 - 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 ademhalingstoestel 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 chemicaliënmengsel 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.
- **Doordringingstijd van het handschoenmateriaal**
 - De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.
- **Oogbescherming:**


Nauw aansluitende veiligheidsbril

RUBRIEK 9: Fysische en chemische eigenschappen

- **9.1 Informatie over fysische en chemische basiseigenschappen**
- **Algemene gegevens**
- **Voorkomen:**

Vorm:	Vloeistof
Kleur:	Kleurloos
Reuk:	Mild
Geurdrempelwaarde:	Niet bepaald.
- **pH-waarde:** Niet bepaald.
- **Toestandsverandering**

Smeltpunt/smeltbereik:	Niet bepaald.
Kookpunt/kookpuntbereik:	Niet bepaald.
- **Vlampunt:** Niet bruikbaar.
- **Ontvlambaarheid (vast, gasvormig):** Niet bruikbaar.

(Vervolg op blz. 5)

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· Ontstekingstemperatuur:	
Ontbindingstemperatuur:	Niet bepaald.
· Zelfonsteking: Niet bepaald.	
· Ontploffingsgevaar: Het produkt is niet ontploffingsgevaarlijk.	
· Ontploffingsgrenzen:	
Onderste:	Niet bepaald.
Bovenste:	Niet bepaald.
· Dampspanning: Niet bepaald.	
Dichtheid bij 20 °C:	1,07 g/cm ³
· Relatieve dichtheid	Niet bepaald.
· Dampdichtheid	Niet bepaald.
· Verdampingsnelheid	Niet bepaald.
· Oplosbaarheid in/mengbaarheid met Water: Niet resp. gering mengbaar.	
· Verdelingscoëfficiënt (n-octanol/water): Niet bepaald.	
· Viscositeit	
Dynamisch:	Niet bepaald.
Kinematisch:	Niet bepaald.
· Oplosmiddelgehalte:	
Organisch oplosmiddel:	0,0 %
VOC (EG)	0,00 %
· 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.
- **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.
- **Primaire aandoening:**
- **Huidcorrosie/-irritatie**
Veroorzaakt huidirritatie.
- **Ernstig oogletsel/oogirritatie**
Veroorzaakt ernstige oogirritatie.
- **Sensibilisatie van de luchtwegen/de huid**
Kan een allergische huidreactie veroorzaken.

(Vervolg op blz. 6)

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- **CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)**
- **Mutageniteit in geslachtscellen**
Verdacht van het veroorzaken van genetische schade.
- **Kankerverwekkendheid**
Verdacht van het veroorzaken van kanker.
- **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.
- **Ecotoxische effecten:**
- **Opmerking:** Zeer giftig voor vissen.
- **Verdere ecologische informatie:**
- **Algemene informatie:**
Waterbezwaarlijkheid (NL) 10: Kan in het aquatisch milieu op lange termijn schadelijke effecten veroorzaken.
Gevaar voor water klasse 1 (D) (Zelfclassificatie): gevaar voor water klein
Niet onverdund of in grote hoeveelheden lozen in grondwater, in oppervlaktewater of in de riolering.
In oppervlaktewater ook giftig voor vissen en plankton.
zeer giftig voor in het water levende organismen
- **12.5 Resultaten van PBT- en zPzB-beoordeling**
- **PBT:** Niet bruikbaar.
- **zPzB:** Niet bruikbaar.
- **12.6 Andere schadelijke effecten** Geen verdere relevante informatie verkrijgbaar.

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.

RUBRIEK 14: Informatie met betrekking tot het vervoer

- | | |
|--|---|
| · 14.1 VN-nummer | |
| · ADR, IMDG, IATA | UNI993 |
| · ADN | Niet van toepassing |
| · 14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN | |
| · ADR | 1993 BRANDBARE VLOEISTOF, N.E.G.,
MILIEUGEVAARLIJK |
| · ADN | Niet van toepassing |
| · IMDG, IATA | FLAMMABLE LIQUID, N.O.S. |

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· 14.3 Transportgevaarenklasse(n) · ADR, ADN, IMDG, IATA · klasse	Niet van toepassing
· 14.4 Verpakkingsgroep: · ADR, IMDG, IATA	III
· 14.5 Milieugevaaren:	Niet bruikbaar.
· 14.6 Bijzondere voorzorgen voor de gebruiker · Stowage Category	Niet bruikbaar. A
· 14.7 Vervoer in bulk overeenkomstig bijlage II bij Marpol en de IBC-code	Niet bruikbaar.
· Transport/verdere gegevens:	
· ADR · Beperkte hoeveelheden (LQ) · Uitgezonderde hoeveelheden (EQ)	5L Code: E1 Grootste netto hoeveelheid per binnenverpakking: 30 ml Grootste netto hoeveelheid per buitenverpakking: 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
· VN "Model Regulation":	Niet van toepassing

RUBRIEK 15: Regelgeving

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

· SZW-lijst van kankerverwekkende stoffen

De stof is niet aanwezig.

· SZW-lijst van mutagene stoffen

De stof is niet aanwezig.

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

De stof is niet aanwezig.

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

De stof is niet aanwezig.

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

De stof is niet aanwezig.

· Richtlijn 2012/18/EU

· Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I De stof is niet aanwezig.

· Seveso-categorie E1 Gevaar voor het aquatisch milieu

· Drempelwaarde (ton) voor toepassing van voorschriften voor lagedrempelinrichtingen 100 t

· Drempelwaarde (ton) voor toepassing van voorschriften voor hogedrempelinrichtingen 200 t

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

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- **Nationale voorschriften:**
- **Gevaarklasse v. water:** Waterbezwaarlijkheid (NL) 10: Saneringsinspanning A
- **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 producteigenschappen en vestigen geen contractuele rechtsbetrekking.

· **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

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

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxiciteit – Categorie 4

Skin Irrit. 2: Huidcorrosie/-irritatie – Categorie 2

Eye Irrit. 2: Ernstig oogletsel/oogirritatie – Categorie 2

Skin Sens. 1B: Sensibilisatie van de huid – Categorie 1B

Muta. 2: Mutageniteit in geslachtscellen – Categorie 2

Carc. 2: Kankerverwekkendheid – Categorie 2

STOT SE 3: Specifieke doelorgaantoxiciteit bij eenmalige blootstelling – Categorie 3

Aquatic Acute 1: Gevaar voor het aquatisch milieu - acuut aquatisch gevaar – Categorie 1

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KOHTA 1: Aineen tai seoksen ja yhtiön tai yrityksen tunnistetiedot

- **1.1 Tuotetunniste**
- **Kauppanimike:** CROSSLINKER D (LOWICRYL HM20)
- **Artikkelinumero:** 14340(D)
- **CAS-numero:**
109-16-0
- **1.2 Aineen tai seoksen merkitykselliset tunnistetut käytöt ja käytöt, joita ei suositella**
Merkittäviä lisätietoja ei ole saatavilla.
- **Aineen / valmisteeseen 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: sgkceck@aol.com
www.emsdiasum.com
- **Tietoja antaa:** Product safety department
- **1.4 Häätöpuhelinnumero:**
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. 2 H351 Epäillään aiheuttavan syöpää.



GHS09 ympäristö

Aquatic Acute 1 H400 Erittäin myrkyllistä vesieliöille.



GHS07

Acute Tox. 4 H302 Haitallista nieltynä.

Skin Irrit. 2 H315 Ärsyttää ihoa.

Eye Irrit. 2 H319 Ärsyttää voimakkaasti silmiä.

Skin Sens. 1B H317 Voi aiheuttaa allergisen ihoreaktion.

STOT SE 3 H335 Saattaa aiheuttaa hengitysteiden ärsytystä.

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

(jatkuu sivulla 2)

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(jatkuu sivulla 1)

· Varoitusmerkit


GHS07 GHS08 GHS09

· Huomiosana Varoitus
· Vaaralausekkeet

H302 Haitallista nieltynä.

H315 Ärsyttää ihoa.

H319 Ärsyttää voimakkaasti silmiä.

H317 Voi aiheuttaa allergisen ihoreaktion.

H341 Epäillään aiheuttavan perimävaurioita.

H351 Epäillään aiheuttavan syöpää.

H335 Saattaa aiheuttaa hengitysteiden ärsytystä.

H400 Erittäin myrkyllistä vesieliöille.

· Turvalausekkeet

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 piilolinssit, jos sen voi tehdä helposti. Jatka huuhtomista.

P321 Erityishoitoa 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

· 3.1 Kemialliset ominaisuudet: Aineet
· CAS-nro. nimike

109-16-0 Triethylene glycol dimethacrylate

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:

Huolehdyttävä 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 minuiteja ja 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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(jatkuu sivulla 2)

- **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 vesisuihukilla tai alkoholeja kestäväällä vaahdolla.
- **5.2 Aineesta tai seoksesta johtuvat erityiset vaarat** Merkittäviä lisätietoja ei ole saatavilla.
- **5.3 Palontorjuntaa koskevat ohjeet**
- **Erityinen suojavarustus:** Erikoistoimenpiteitä ei tarvita.

KOHTA 6: Toimenpiteet onnettomuuspäästöissä

- **6.1 Varotoimenpiteet, henkilönsuojaimet ja menettely hätätilanteessa** Ei tarvita.
- **6.2 Ympäristöön kohdistuvat varotoimet:**
Jos ainetta on päässyt viemäriin tai vesistöön, ilmoitettava asianomaiselle virastolle.
Estettävä pääsy viemäreihin/pintavesiin/pohjaveteen.
- **6.3 Suojarakenteita ja puhdistusta koskevat menetelmät ja -välineet:**
Imettävä nestettä sitovalla aineella (hiekkä, piimaa, hapon sidosaine, 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.
Vältettävä aerosolin muodostusta.
- **Palo- ja räjähdysuojaohjeet:** Erikoistoimenpiteitä ei tarvita.
- **7.2 Turvallisen varastoinnin edellyttämät olosuhteet, mukaan luettuina yhteensopimattomuudet**
- **Varastointi:**
- **Varastotiloille ja säiliöille asetettavat vaatimukset:** Ei erikoisvaatimuksia.
- **Yhteisvarastointiohjeet:** 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.
- **8.1 Valvontaa koskevat muuttujat**
- **Aineosat työpaikkakohtaisin valvottavin raja-arvoin:** Tarpeeton.
- **Lisäohjeet:** Tiedot perustuvat valmistushetkellä voimassaoleviin luetteloihin.

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(jatkuu sivulla 3)

- **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.
Vältettävä ihokosketusta.
Vältettävä ihokosketusta ja kosketusta silmiin.
- **Hengityssuoja:**
Lyhytaikaisessa tai vähäisessä altistuksessa hengityssuojasuodin; intensiivisessä tai pitempiaikaisessa rasiuksessa ulkoilmasta riippumaton hengityssuojain.
- **Käsisuojus:**



Suojakäsineet

Käsin materiaalin tulee olla tuotetta/ainetta/valmistetta kestävä ja läpäisemätöntä.
Puuttuvien testien vuoksi suositusta soveltuvasta suojakäsine materiaalista tuotteelle/ valmisteelle / kemikaalikohteelle ei voida antaa.

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

- **Käsin materiaali**
Soveltuvan käsinetyypin valikoima ei riipu yksinomaan materiaalista vaan myös muista laatuominaisuuksista ja vaihtelee eri valmistajilla.
- **Käsin materiaalin läpäisy aika**
Tarkka läpäisy aika on selvitettävä suojakäsine valmistajalta 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: Väritön

- **Haju:** Mieto

- **Hajukynnys:** Ei määrätty.

- **pH-arvo:** Ei määrätty.

- **Tilanmuutos**

Sulamispiste/sulamisaue: Ei määrätty.

Kiehumispiste/kiehumisaue: Ei määrätty.

- **Leimahduspiste:** Ei voida käyttää.

- **Syttyvyys (kiinteä, kaasumainen):** Ei voida käyttää.

(jatkuu sivulla 5)

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(jatkuu sivulla 4)

· Syttymislämpötila:	
· Hajoamislämpötila:	Ei määrätty.
· Itsesyttyvyys:	Ei määrätty.
· Räjähdysvaara:	Tuote ei ole räjähdysvaarallinen.
· Räjähdysrajat:	
· Alempi:	Ei määrätty.
· Ylempi:	Ei määrätty.
· Höyrypaine:	Ei määrätty.
· Tiheys 20 °C lämpötilassa:	1,07 g/cm ³
· Suhteellinen tiheys	Ei määrätty.
· Höyryn tiheys	Ei määrätty.
· Höyrystymisnopeus	Ei määrätty.
· Liukenevuus/sekoittuvuus veteen:	Ei sekoittuva tai vain osittain sekoittuva.
· Jakaantumiskerroin (-oktanoli/vesi):	Ei määrätty.
· Viskositeetti:	
· Dynaaminen:	Ei määrätty.
· Kinemaattinen:	Ei määrätty.
· Liuteainepitoisuus:	
· Orgaaniset liuotaineet:	0,0 %
· VOC (EY)	0,00 %
· 9.2 Muut tiedot	Merkittäviä lisätietoja ei ole saatavilla.

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.

KOHTA 11: Myrkyllisyyteen liittyvät tiedot

- **11.1 Tiedot myrkyllisistä vaikutuksista**
- **Välitön myrkyllisyys**
Haitallista nieltynä.
- **Ensisijainen ärsyttävä vaikutus:**
- **Ihosityttävyys/ihoärsytys**
Ärsyttää ihoa.
- **Vakava silmävaurio/silmä-ärsytys**
Ärsyttää voimakkaasti silmiä.
- **Hengitysteiden tai ihon herkistyminen**
Voi aiheuttaa allergisen ihoreaktion.

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(jatkuu sivulla 5)

- **CMR-vaikutukset eli syöpää aiheuttavat, perimää vaurioittavat ja lisääntymiselle vaaralliset vaikutukset**
- **Sukusolujen perimää vaurioittavat vaikutukset**
Epäillään aiheuttavan perimävaurioita.
- **Syöpää aiheuttavat vaikutukset**
Epäillään aiheuttavan syöpää.
- **Lisääntymiselle vaaralliset vaikutukset** Saatavilla olevien tietojen perusteella luokitus- kriteerit eivät täyty.
- **Elinkohtainen myrkyllisyys – kerta-altistuminen**
Saattaa aiheuttaa hengitysteiden ärsytystä.
- **Elinkohtainen myrkyllisyys – toistuva altistuminen**
Saatavilla olevien tietojen perusteella luokitus- kriteerit eivät täyty.
- **Aspiraatiovaara** Saatavilla olevien tietojen perusteella luokitus- kriteerit 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 Lükkuvuus maaperässä** Merkittäviä lisätietoja ei ole saatavilla.
- **Ekotoksiset vaikutukset:**
- **Huomautus:** Erittäin myrkyllinen kaloille
- **Ekologisia lisätietoja:**
- **Yleisohjeita:**
Vesistövaarallisuusluokka 1 (Oma luokitus): lievästi vesistöä vaarantava
Estetään aineen pääsy ohentamattomana tai suurina määrinä pohjaveteen, vesistöihin, viemäristöön.
Vesistöihin päästyään myrkyllistä kaloille ja planktonille.
erittäin myrkyllinen vesielioille
- **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.

KOHTA 14: Kuljetustiedot

- | | |
|--|--|
| · 14.1 YK-numero | |
| · ADR, IMDG, IATA | UN1993 |
| · ADN | tarpeeton |
| · 14.2 Kuljetuksessa käytettävä virallinen nimi | |
| · ADR | 1993 PALAVA NESTE, N.O.S., YMPÄRISTÖLLE
VAARALLINEN |
| · ADN | tarpeeton |
| · IMDG, IATA | FLAMMABLE LIQUID, N.O.S. |

(jatkuu sivulla 7)

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· 14.3 Kuljetuksen vaaraluokka	
· ADR, ADN, IMDG, IATA	
· luokka	tarpeeton
· 14.4 Pakkausryhmä	
· ADR, IMDG, IATA	III
· 14.5 Ympäristövaarat:	Ei voida käyttää.
· 14.6 Erityiset varotoimet käyttäjälle	Ei voida käyttää.
· Stowage Category	A
· 14.7 Kuljetus irtolastina Marpol-sopimuksen II liitteen ja IBC-säännösten mukaisesti	Ei voida käyttää.
· Kuljetus/lisätietoja:	
· ADR	
· Rajoitetut määrät (LQ)	5L
· Poikkeusmäärät (EQ)	Koodi: E1 Enimmäisnettomäärä sisäpakkausta kohti: 30 ml Enimmäisnettomäärä ulkopakkausta kohti: 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":	tarpeeton

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** Aine ei sisälly
- **Seveso-luokka E1** Vaarallisuus vesiympäristölle
- **Soveltamisen vähimmäismäärät (tonneina) alemman tason vaatimukset 100 t**
- **Soveltamisen vähimmäismäärät (tonneina) ylemmän tason vaatimukset 200 t**
- **NEUVOSTON ASETUS (EY) N:o 1907/2006 LIITE XVII** Rajoitusehdot: 3
- **15.2 Kemikaaliturvallisuusarviointi:** Kemikaaliturvallisuusarviointia ei ole tehty.

KOHTA 16: Muut tiedot

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

- **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
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

(jatkuu sivulla 8)

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Acute Tox. 4: Välitön myrkyllisyys – Katgoria 4
Skin Irrit. 2: Ihosyövyttävyys/ihoärsytys – Katgoria 2
Eye Irrit. 2: Vakava silmävaurio/silmä-ärsytys – Katgoria 2
Skin Sens. 1B: Ihoa herkistävä – Katgoria 1B
Muta. 2: Sukusolujen perimää vaurioittavat vaikutukset – Katgoria 2
Carc. 2: Syöpää aiheuttavat vaikutukset – Katgoria 2
STOT SE 3: Elinkohtainen myrkyllisyys (kerta-altistuminen) – Katgoria 3
Aquatic Acute 1: Vaarallisuus vesiympäristölle - välitön vaara vesiympäristölle – Katgoria 1

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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:** CROSSLINKER D (LOWICRYL HM20)
- **Code du produit:** 14340(D)
- **No CAS:**
109-16-0
- **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: sgkceck@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. 2 H351 Susceptible de provoquer le cancer.



GHS09 environnement

Aquatic Acute 1 H400 Très toxique pour les organismes aquatiques.



GHS07

Acute Tox. 4 H302 Nocif en cas d'ingestion.

Skin Irrit. 2 H315 Provoque une irritation cutanée.

Eye Irrit. 2 H319 Provoque une sévère irritation des yeux.

Skin Sens. 1B 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** La substance est classifiée et étiquetée selon le règlement CLP.

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· Pictogrammes de danger



GHS07 GHS08 GHS09

· Mention d'avertissement *Attention*

· Mentions de danger

H302 Nocif en cas d'ingestion.

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.

H351 Susceptible de provoquer le cancer.

H335 Peut irriter les voies respiratoires.

H400 Très toxique pour les organismes aquatiques.

· 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.

P321 Traitement spécifique (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

· 3.1 Caractérisation chimique: Substances

· No CAS Désignation

109-16-0 Triethylene glycol dimethacrylate

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 et consulter un médecin.

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- **Après ingestion:** Consulter immédiatement un médecin.
- **4.2 Principaux symptômes et effets, aigus et différés** Pas d'autres informations importantes disponibles.
- **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:** Aucune mesure particulière n'est requise.

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:**
En cas de pénétration dans les eaux ou les égouts, avertir les autorités compétentes.
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).
Évacuer 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.
Éviter la formation d'aérosols.
- **Préventions des incendies et des explosions:** Aucune mesure particulière n'est requise.
- **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:** Néant
- **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.
Eviter tout contact avec la peau.
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 ne dépend pas seulement du matériau, mais également d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre.
 - **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:	Incolore
Odeur:	Douce
Seuil olfactif:	Non déterminé.
- **valeur du pH:** Non déterminé.
- **Changement d'état**

Point de fusion:	Non déterminé.
Point d'ébullition:	Non déterminé.

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· Point d'éclair	Non applicable.
· Inflammabilité (solide, gazeux):	Non applicable.
· Température d'inflammation:	
Température de décomposition:	Non déterminé.
· Auto-inflammation:	Non déterminé.
· Danger d'explosion:	Le produit n'est pas explosif.
· Limites d'explosion:	
Inférieure:	Non déterminé.
Supérieure:	Non déterminé.
· Pression de vapeur:	Non déterminé.
· Densité à 20 °C:	1,07 g/cm ³
· Densité relative	Non déterminé.
· Densité de vapeur.	Non déterminé.
· Vitesse d'évaporation	Non déterminé.
· Solubilité dans/miscibilité avec l'eau:	Pas ou peu miscible
· Coefficient de partage (n-octanol/eau):	Non déterminé.
· Viscosité:	
Dynamique:	Non déterminé.
Cinématique:	Non déterminé.
· Teneur en solvants:	
Solvants organiques:	0,0 %
VOC (CE)	0,00 %
· 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

RUBRIQUE 11: Informations toxicologiques

- **11.1 Informations sur les effets toxicologiques**
- **Toxicité aiguë**
Nocif en cas d'ingestion.
- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée**
Provoque une irritation cutanée.
- **Lésions oculaires graves/irritation oculaire**
Provoque une sévère irritation des yeux.

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- **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**
Susceptible de 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.
- **Effets écotoxiques:**
- **Remarque:** Très toxique chez les poissons.
- **Autres indications écologiques:**
- **Indications générales:**
Catégorie de pollution des eaux 1 (D) (Classification propre): peu polluant
Ne pas laisser le produit, non dilué ou en grande quantité, pénétrer la nappe phréatique, les eaux ou les canalisations.
Dans les eaux, également toxique pour les poissons et le plancton.
Très toxique pour organismes aquatiques.
- **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.
- **Emballages non nettoyés:**
- **Recommandation:** Evacuation conformément aux prescriptions légales.

RUBRIQUE 14: Informations relatives au transport

- **14.1 Numéro ONU**
- **ADR, IMDG, IATA** UN1993
- **ADN** néant

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· 14.2 Désignation officielle de transport de l'ONU	
· ADR	1993 LIQUIDE INFLAMMABLE, N.S.A., DANGEREUX POUR L'ENVIRONNEMENT
· ADN	néant
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S.
· 14.3 Classe(s) de danger pour le transport	
· ADR, ADN, IMDG, IATA	
· Classe	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	Non applicable.
· 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)	5L
· Quantités exceptées (EQ)	Code: E1 Quantité maximale nette par emballage intérieur: 30 ml Quantité maximale nette par emballage extérieur: 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
· "Règlement type" de l'ONU:	néant

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 la substance n'est pas comprise
- Catégorie SEVESO E1 Danger pour l'environnement aquatique
- Quantité seuil (tonnes) pour l'application des exigences relatives au seuil bas 100 t
- Quantité seuil (tonnes) pour l'application des exigences relatives au seuil haut 200 t
- RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII Conditions de limitation: 3
- 15.2 Évaluation de la sécurité chimique: Une évaluation de la sécurité chimique n'a pas été réalisée.

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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.

· **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

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

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Toxicité aiguë – Catégorie 4

Skin Irrit. 2: Corrosion cutanée/irritation cutanée – Catégorie 2

Eye Irrit. 2: Lésions oculaires graves/irritation oculaire – Catégorie 2

Skin Sens. 1B: Sensibilisation cutanée – Catégorie 1B

Muta. 2: Mutagénicité sur les cellules germinales – Catégorie 2

Carc. 2: Cancérogénicité – Catégorie 2

STOT SE 3: Toxicité spécifique pour certains organes cibles (exposition unique) – Catégorie 3

Aquatic Acute 1: Dangers pour le milieu aquatique- toxicité aiguë pour le milieu aquatique – Catégorie 1

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

· **1.1 Produktidentifikator**

· **Handelsname:** CROSSLINKER D (LOWICRYL HM20)

· **Artikelnummer:** 14340(D)

· **CAS-Nummer:**

109-16-0

· **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**

Keine weiteren relevanten Informationen verfügbar.

· **Verwendung des Stoffs / 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

24h Giftnotruf Munchen: +49 (0)89 19240

Toxikologische Abteilung der II. Medizinischen Klinik

rechts der Isar, Munchen. - www.toxinfo.org

· **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. 2

H351 Kann vermutlich Krebs erzeugen.



GHS09 Umwelt

Aquatic Acute 1 H400 Sehr giftig für Wasserorganismen.



GHS07

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- **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 bei geöffnetem Lidspalt mehrere Minuten unter fließendem Wasser abspülen und 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:** Keine besonderen Maßnahmen erforderlich.

ABSCHNITT 6: Maßnahmen bei unbeabsichtigter Freisetzung

- **6.1 Personenbezogene Vorsichtsmaßnahmen, Schutzausrüstungen und in Notfällen anzuwendende Verfahren**
Nicht erforderlich.
- **6.2 Umweltschutzmaßnahmen:**
Bei Eindringen in Gewässer oder Kanalisation zuständige Behörden benachrichtigen.
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.
Aerosolbildung vermeiden.
- **Hinweise zum Brand- und Explosionsschutz:** Keine besonderen Maßnahmen erforderlich.
- **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.

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- **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:**

109-16-0 Triethylene glycol dimethacrylate

MAK vgl. Abschn. IV

- **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.

Berührung mit der Haut vermeiden.

Berührung mit den Augen und der Haut vermeiden.

· **Atemschutz:**

Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition unluftunabhängiges 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.

· **Durchdringungszeit des Handschuhmaterials**

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

· **Augenschutz:**



Dichtschließende Schutzbrille

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ABSCHNITT 9: Physikalische und chemische Eigenschaften

· 9.1 Angaben zu den grundlegenden physikalischen und chemischen Eigenschaften

· Allgemeine Angaben

· Aussehen:

Form: Flüssigkeit

Farbe: Farblos

· **Geruch:** Mild

· **Geruchsschwelle:** Nicht bestimmt.

· **pH-Wert:** Nicht bestimmt.

· Zustandsänderung

Schmelzpunkt/Schmelzbereich: Nicht bestimmt.

Siedepunkt/Siedebereich: Nicht bestimmt.

· **Flammpunkt:** Nicht anwendbar.

· **Entzündlichkeit (fest, gasförmig):** Nicht anwendbar.

· Zündtemperatur:

Zersetzungstemperatur: Nicht bestimmt.

· **Selbstentzündlichkeit:** Nicht bestimmt.

· **Explosionsgefahr:** Das Produkt ist nicht explosionsgefährlich.

· Explosionsgrenzen:

Untere: Nicht bestimmt.

Obere: Nicht bestimmt.

· **Dampfdruck:** Nicht bestimmt.

· **Dichte bei 20 °C:** 1,07 g/cm³

· **Relative Dichte:** Nicht bestimmt.

· **Dampfdichte:** Nicht bestimmt.

· **Verdampfungsgeschwindigkeit:** Nicht bestimmt.

· Löslichkeit in / Mischbarkeit mit

Wasser: Nicht bzw. wenig mischbar.

· **Verteilungskoeffizient (n-Octanol/Wasser):** Nicht bestimmt.

· Viskosität:

Dynamisch: Nicht bestimmt.

Kinematisch: Nicht bestimmt.

· Lösemittelgehalt:

Organische Lösemittel: 0,0 %

VOC (EU) 0,00 %

· **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.

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- **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.
- **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 vermutlich 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.
- **Ökotoxische Wirkungen:**
- **Bemerkung:** Sehr giftig für Fische.
- **Weitere ökologische Hinweise:**
- **Allgemeine Hinweise:**
Wassergefährdungsklasse 1 (Selbsteinstufung): schwach wassergefährdend
Nicht unverdünnt bzw. in größeren Mengen in das Grundwasser, in Gewässer oder in die Kanalisation gelangen lassen.
In Gewässern auch giftig für Fische und Plankton.
sehr giftig für Wasserorganismen
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

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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.

ABSCHNITT 14: Angaben zum Transport

<ul style="list-style-type: none"> · 14.1 UN-Nummer · ADR, IMDG, IATA · ADN 	<p style="margin: 0;">UN1993</p> <p style="margin: 0;">entfällt</p>
<ul style="list-style-type: none"> · 14.2 Ordnungsgemäße UN-Versandbezeichnung · ADR · ADN · IMDG, IATA 	<p style="margin: 0;">1993 ENTZÜNDBARER FLÜSSIGER STOFF, N.A.G., UMWELTGEFÄHRDEND</p> <p style="margin: 0;">entfällt</p> <p style="margin: 0;">FLAMMABLE LIQUID, N.O.S.</p>
<ul style="list-style-type: none"> · 14.3 Transportefahrenklassen · ADR, ADN, IMDG, IATA · Klasse 	<p style="margin: 0;">entfällt</p>
<ul style="list-style-type: none"> · 14.4 Verpackungsgruppe · ADR, IMDG, IATA 	<p style="margin: 0;">III</p>
<ul style="list-style-type: none"> · 14.5 Umweltgefahren: 	<p style="margin: 0;">Nicht anwendbar.</p>
<ul style="list-style-type: none"> · 14.6 Besondere Vorsichtsmaßnahmen für den Verwender · Stowage Category 	<p style="margin: 0;">Nicht anwendbar.</p> <p style="margin: 0;">A</p>
<ul style="list-style-type: none"> · 14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code 	<p style="margin: 0;">Nicht anwendbar.</p>
<ul style="list-style-type: none"> · Transport/weitere Angaben: 	
<ul style="list-style-type: none"> · ADR · Begrenzte Menge (LQ) · Freigestellte Mengen (EQ) 	<p style="margin: 0;">5L</p> <p style="margin: 0;">Code: E1</p> <p style="margin: 0;">Höchste Nettomenge je Innenverpackung: 30 ml</p> <p style="margin: 0;">Höchste Nettomenge je Außenverpackung: 1000 ml</p>
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	<p style="margin: 0;">5L</p> <p style="margin: 0;">Code: E1</p> <p style="margin: 0;">Maximum net quantity per inner packaging: 30 ml</p> <p style="margin: 0;">Maximum net quantity per outer packaging: 1000 ml</p>
<ul style="list-style-type: none"> · UN "Model Regulation": 	<p style="margin: 0;">entfällt</p>

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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** Der Stoff ist nicht enthalten.
- **Seveso-Kategorie E1** Gewässergefährdend
- **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der unteren Klasse 100 t**
- **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der oberen Klasse 200 t**
- **VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII** Beschränkungsbedingungen: 3
- **Nationale Vorschriften:**
- **Wassergefährdungsklasse: WGK 1 (Selbsteinstufung):** schwach wassergefährdend.
- **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.

- **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
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- PBT: Persistent, Bioaccumulative and Toxic
- vPvB: very Persistent and very Bioaccumulative
- Acute Tox. 4: Akute Toxizität – Kategorie 4
- Skin Irrit. 2: Hautreizende/-ätzende Wirkung – Kategorie 2
- Eye Irrit. 2: Schwere Augenschädigung/Augenreizung – Kategorie 2
- Skin Sens. 1B: Sensibilisierung der Haut – Kategorie 1B
- Muta. 2: Keimzellmutagenität – Kategorie 2
- Carc. 2: Karzinogenität – Kategorie 2
- STOT SE 3: Spezifische Zielorgan-Toxizität (einmalige Exposition) – Kategorie 3
- Aquatic Acute 1: Gewässergefährdend - akut gewässergefährdend – Kategorie 1

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

Stampato il: 10.01.2017

Revisione: 10.01.2017

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

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** CROSSLINKER D (LOWICRYL HM20)

· **Articolo numero:** 14340(D)

· **Numero CAS:**

109-16-0

· **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: sgkceck@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. 2 H351 Sospettato di provocare il cancro.



GHS09 ambiente

Aquatic Acute 1 H400 Molto tossico per gli organismi acquatici.



GHS07

Acute Tox. 4 H302 Nocivo se ingerito.

Skin Irrit. 2 H315 Provoca irritazione cutanea.

Eye Irrit. 2 H319 Provoca grave irritazione oculare.

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

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STOT SE 3 H335 Può irritare le vie respiratorie.

· 2.2 Elementi dell'etichetta

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

La sostanza è classificata ed etichettata conformemente al regolamento CLP.

· Pittogrammi di pericolo



GHS07 GHS08 GHS09

· Avvertenza Attenzione

· Indicazioni di pericolo

H302 Nocivo se ingerito.

H315 Provoca irritazione cutanea.

H319 Provoca grave irritazione oculare.

H317 Può provocare una reazione allergica cutanea.

H341 Sospettato di provocare alterazioni genetiche.

H351 Sospettato di provocare il cancro.

H335 Può irritare le vie respiratorie.

H400 Molto tossico per gli organismi acquatici.

· 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.

P321 Trattamento specifico (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

· 3.1 Caratteristiche chimiche: Sostanze

· Numero CAS

109-16-0 Triethylene glycol dimethacrylate

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.

· **Contatto con la pelle:** Lavare immediatamente con acqua e sapone sciacquando accuratamente.

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- **Contatto con gli occhi:**
Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte e 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:** Non sono richiesti provvedimenti particolari.

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:**
In caso di infiltrazione nei corpi d'acqua o nelle fognature avvertire le autorità competenti.
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.
Evitare la formazione di aerosol.
- **Indicazioni in caso di incendio ed esplosione:** Non sono richiesti provvedimenti particolari.
- **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.

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:** Non Necessario.

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· **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.

Evitare il contatto con la pelle.

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.

· **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: Incolore

· **Odore:** Delicato

· **Soglia olfattiva:** Non definito.

· **valori di pH:** Non definito.

· **Cambiamento di stato**

Temperatura di fusione/ambito di fusione: Non definito.

Temperatura di ebollizione/ambito di ebollizione: Non definito.

· **Punto di infiammabilità:** Non applicabile.

· **Infiammabilità (solido, gassoso):** Non applicabile.

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· Temperatura di accensione:	
· Temperatura di decomposizione:	Non definito.
· Autoaccensione:	Non definito.
· Pericolo di esplosione:	Prodotto non esplosivo.
· Limiti di infiammabilità:	
· Inferiore:	Non definito.
· Superiore:	Non definito.
· Tensione di vapore:	Non definito.
· Densità a 20 °C:	1,07 g/cm ³
· Densità relativa	Non definito.
· Densità del vapore	Non definito.
· Velocità di evaporazione	Non definito.
· Solubilità in/Miscibilità con acqua:	Poco e/o non miscibile.
· Coefficiente di distribuzione (n-Octanol/acqua):	Non definito.
· Viscosità:	
· Dinamica:	Non definito.
· Cinematica:	Non definito.
· Tenore del solvente:	
· Solventi organici:	0,0 %
· VOC (CE)	0,00 %
· 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.
- **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.
- **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.

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- **Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)**
- **Mutagenicità delle cellule germinali**
Sospettato di provocare alterazioni genetiche.
- **Cancerogenicità**
Sospettato di 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.
- **Effetti tossici per l'ambiente:**
- **Osservazioni:** Molto tossico per i pesci.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**
Pericolosità per le acque classe 1 (D) (Autoclassificazione): poco pericoloso
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature non diluito o in grandi quantità.
Tossico per pesci e plancton.
Molto tossico per gli organismi acquatici
- **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.
- **Imballaggi non puliti:**
- **Consigli:** Smaltimento in conformità con le disposizioni amministrative.

SEZIONE 14: Informazioni sul trasporto

- | | |
|---|--|
| · 14.1 Numero ONU | |
| · ADR, IMDG, IATA | UN1993 |
| · ADN | non applicabile |
| · 14.2 Nome di spedizione dell'ONU | |
| · ADR | 1993 LIQUIDO INFIAMMABILE, N.A.S., PERICOLOSO PER L'AMBIENTE |
| · ADN | non applicabile |
| · IMDG, IATA | FLAMMABLE LIQUID, N.O.S. |

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· 14.3 Classi di pericolo connesso al trasporto	
· ADR, ADN, IMDG, IATA	
· Classe	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	Non applicabile.
· Stowage Category	A
· 14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL ed il codice IBC	Non applicabile.
· Trasporto/ulteriori indicazioni:	
· ADR	
· Quantità limitate (LQ)	5L
· Quantità esenti (EQ)	Codice: E1 Quantità massima netta per imballaggio interno: 30 ml Quantità massima netta per imballaggio esterno: 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":	non applicabile

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** La sostanza non è contenuta
- **Categoria Seveso E1** Pericoloso per l'ambiente acquatico
- **Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia inferiore 100 t**
- **Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia superiore 200 t**
- **REGOLAMENTO (CE) n. 1907/2006 ALLEGATO XVII** Restrizioni: 3
- **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.

- **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
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- PBT: Persistent, Bioaccumulative and Toxic

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vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Tossicità acuta – Categoria 4

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

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

Skin Sens. 1B: Sensibilizzazione della pelle – Categoria 1B

Muta. 2: Mutagenicità sulle cellule germinali – Categoria 2

Carc. 2: Cancerogenicità – Categoria 2

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

Aquatic Acute 1: Pericoloso per l'ambiente acquatico - pericolo acuto per l'ambiente acquatico – Categoria 1

IT

製品安全データシート

JIS Z7253 による分類

印刷日: 2017.01.10

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1 化学物質等及び会社情報

- ・ **製品識別子**
- ・ **商品名:** CROSSLINKER D (LOWICRYL HM20)
- ・ **製品番号:** 14340(D)
- ・ **CAS 番号:**
109-16-0
- ・ **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: sgkceck@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2

H351 発がんのおそれの疑い



腐食

重篤な眼の損傷性/眼刺激性 区分1

H318 重篤な眼の損傷



環境

水生環境有害性(急性毒性) 区分1

H400 水生生物に非常に強い毒性



急性毒性(経口) 区分4

H302 飲み込むと有害

皮膚腐食性/刺激性 区分2

H315 皮膚刺激

感作性(皮膚) 区分1B

H317 アレルギー性皮膚反応を起こすおそれ

特定標的臓器有害性(単回暴露) 区分3

H335 呼吸器への刺激のおそれ

・ ラベル要素

・ GHS ラベル要素

本化学物質は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。

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商品名: **CROSSLINKER D (LOWICRYL HM20)**

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危険図表



GHS05

GHS07

GHS08

GHS09

表示語 危険

危険文句

- 飲み込むと有害
- 皮膚刺激
- 重篤な眼の損傷
- 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
- 発がんのおそれの疑い
- 呼吸器への刺激のおそれ
- 水生生物に非常に強い毒性

注意文句

- 粉じん/煙/ガス/ミスト/蒸気/スプレーの吸入を避けること。
- 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。
- ただちに毒物センター/医師に連絡すること。
- 特別な処置が必要である（このラベルのを見よ）。
- 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: 化学物質
- CAS 番号表示
109-16-0 Triethylene glycol dimethacrylate

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 48 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:

即刻石鹼と水で洗い、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、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。

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- ・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。

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: 特別な措置は必要としない

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:
河川、下水処理施設に流れ込んだ場合には関係当局に連絡する
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
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: 特別な措置は必要ない
- ・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: 削除
- ・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
 - 皮膚が触れないようにする
 - 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
- ・ **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: 無色
- ・ **におい:** マイルド
- ・ **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: 決まっていない
- ・ **引火点:** 情報なし
- ・ **発火性 (個体、気体):** 情報なし
- ・ **発火温度:**
- ・ **分解温度:** 決まっていない.
- ・ **自然発火性:** 決まっていない.

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・ 爆発の危険:	プロダクトは爆発する危険はない
・ 爆発限界:	
下限:	決まっていない.
上限:	決まっていない.
・ 蒸気圧:	決まっていない.
・ 密度 約 20 °C:	1.07 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:	混ぜ合わせられない、ほとんど混ぜ合わせられない
・ 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.
有機溶剤:	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:**
- ・ **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:** 重大な目の損傷の危険を伴う強い刺激作用
- ・ **感作作用:** 皮膚接触によって感作作用の可能性あり
- ・ **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2

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。

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- ・ **土壌内移動性** 追加的な関連情報は得られていません。
- ・ **生態毒性作用:**
- ・ **注:** 魚類に対して毒性が非常に高い
- ・ **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 1 (ドイツの規定) (自己査定): 水に対する危険性はわずかにある
薄めずに、あるいは大量に地下水、河川もしくは下水施設に流してはならない
水域においては魚やプランクトンにも毒性がある
水生生物にとり非常に毒性が高い
- ・ **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

14 輸送上の注意

・ UN 番号	UN1993
・ ADR, IMDG, IATA	
・ ADN	無効
・ 国連出荷正式名	
・ ADR	1993 FLAMMABLE LIQUID, N.O.S., ENVIRONMENTALLY HAZARDOUS
・ ADN	無効
・ IMDG, IATA	FLAMMABLE LIQUID, N.O.S.
・ 輸送の危険性クラス	
・ ADR, ADN, IMDG, IATA	
・ 分類	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	情報なし
・ Stowage Category	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

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・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 "模範規制:	無効

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

109-16-0	Triethylene glycol dimethacrylate	
123-31-9	hydroquinone	3-543

・ 特定化学物質

物質は含まれていない

・ 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

123-31-9	hydroquinone	旧第二種監視化学物質
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・ 優先評価化学物質

123-31-9	hydroquinone	
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・ 白物質

物質は含まれていない

・ 既存化学物質安全性点検結果 (分解性・蓄積性)

123-31-9	hydroquinone	
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・ 既存化学物質安全性点検結果 (毒性)

物質は含まれていない

・ PRTR Class 1 designated substances

PRTR 制度 - 第一種指定化学物質

123-31-9	hydroquinone	
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・ PRTR Class 2 designated substances

PRTR 制度 - 第二種指定化学物質

物質は含まれていない

・ Poisonous and Deleterious Substances Control Act - Deleterious Substances

毒物及び劇物取締法 - 劇物

物質は含まれていない

・ Poisonous and Deleterious Substances Control Act - Poisonous Substances

毒物及び劇物取締法 - 毒物

物質は含まれていない

・ Poisonous and Deleterious Substances Control Act - Specified Poisonous Substances

毒物及び劇物取締法 - 特定毒物

物質は含まれていない

・ GHS ラベル要素

本化学物質は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。

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危険図表



GHS05

GHS07

GHS08

GHS09

表示語 危険

危険文句

- 飲み込むと有害
- 皮膚刺激
- 重篤な眼の損傷
- 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
- 発がんのおそれの疑い
- 呼吸器への刺激のおそれ
- 水生生物に非常に強い毒性

注意文句

- 粉じん/煙/ガス/ミスト/蒸気/スプレーの吸入を避けること。
- 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。
- ただちに毒物センター/医師に連絡すること。
- 特別な処置が必要である（このラベルのを見よ）。
- 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
- 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

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
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- 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
- 急性毒性(経口) 区分4: Acute toxicity – Category 4
- 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1: Serious eye damage/eye irritation – Category 1
- 感作性(皮膚) 区分1B: Skin sensitisation – Category 1B
- 生殖細胞変異原性 区分2: Germ cell mutagenicity – Category 2
- 発がん性 区分2: Carcinogenicity – Category 2
- 特定標的臓器有害性(単回暴露) 区分3: Specific target organ toxicity (single exposure) – Category 3
- 水生環境有害性(急性毒性) 区分1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

물질안전보건자료 GHS에 따라

기압점: 2017.01.10

개정: 2017.01.10

1 화학제품과 회사에 관한 정보

- 제품 식별자
- 제품명: CROSSLINKER D (LOWICRYL HM20)
- 상품번호: 14340(D)
- CAS-번호
109-16-0
- 해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도 추가적인 정보가 존재하지 않습니다.
- 제품의 권고 용도와 사용상의 제한: 실험실 화학품
- 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: sgkcek@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
- 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 2

H341 유전적인 결함을 일으킬 것으로 의심됨
H351 암을 일으킬 것으로 의심됨



부식

심한 눈 손상성/눈 자극성 - 구분 1

H318 눈에 심한 손상을 일으킴



환경

수생환경 유해성 - 급성 1

H400 수생생물에 매우 유독함



급성 독성 - 경구 - 구분 4
피부 부식성/피부 자극성 - 구분 2

H302 삼키면 유해함
H315 피부에 자극을 일으킴

(2 쪽에 계속)

물질안전보건자료

GHS에 따라

기압점: 2017.01.10

개정: 2017.01.10

제품명: CROSSLINKER D (LOWICRYL HM20)

(1 쪽부터계속)

피부 과민성 - 구분 1 H317 알레르기성 피부 반응을 일으킬 수 있음
 특정표적장기 독성 - 1회 노출 - 구분 3 H335 호흡기계 자극을 일으킬 수 있음

라벨표기 요소

GHS 라벨 요소

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

그림문자



GHS05 GHS07 GHS08 GHS09

신호어 위험

유해·위험 분구

- 삼키면 유해함
- 피부에 자극을 일으킴
- 눈에 심한 손상을 일으킴
- 알레르기성 피부 반응을 일으킬 수 있음
- 유전적인 결함을 일으킬 것으로 의심됨
- 암을 일으킬 것으로 의심됨
- 호흡기계 자극을 일으킬 수 있음
- 수생생물에 매우 유독함

예방조치 문구

- (분진·흙·가스·미스트·증기·스프레이)의 흡입을 피하십시오.
- 눈에 묻으면 몇 분간 물로 조심해서 씻으십시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으십시오.
- 즉시 독성물질센터/병원 연락 필요.
- (라벨 참조) 처치를 하십시오.
- 잠금장치가 있는 저장장소에 저장 하십시오.
- 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

- 화학적 특성: 화학물질
- CAS-번호표시
109-16-0 Triethylene glycol dimethacrylate

4 응급조치 요령

응급조치요령 내용

일반적 정보:

중독증상은 몇 시간이 지난 뒤에 발생할 수 있다. 따라서 사고가 발생한 후에 적어도 48 시간동안은 의료진의 관찰을 받아야 한다.

흡입했을 때:

· 신선한 공기를 쉼으로써 피하고 나서 반드시 의료진의 도움을 구한다.
 환자가 의식을 잃었을 경우에는 안전한 자세에서 환자를 운반한다.

피부에 접촉했을 때: 즉시물과비누로씻고잘행군다.

눈에 들어갔을 때: 흐르는 물에 눈을 몇분동안 씻어내고나서, 의사와 상담한다

(3 쪽에계속)

물질안전보건자료

GHS에 따라

기압점: 2017.01.10

개정: 2017.01.10

제품명: CROSSLINKER D (LOWICRYL HM20)

(2 쪽부터 계속)

- **먹었을 때:** 즉시 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 분사하거나 알코올이 함유된 거품으로 끈다.
- **본 화학물질이나 혼합물에서 발생하는 특별 유해성** 추가적인 정보가 존재하지 않습니다.
- **소방관에 대한 권고사항**
- **화재 진압 시 착용할 보호구 및 예방조치:** 특별한 조치가 필요없음.

6 누출 사고 시 대처방법

- **개인적 예방조치, 보호장비 및 응급처치 절차** 필요없음.
- **환경 관련 예방조치:**
하천이나 하수도로 유입되었을 경우 해당 관청에 보고한다.
하수도망/해수면 위의 물/지하수로도 달하지 않게 한다.
- **밀폐 및 정화 방법과 소재:**
액체가 혼합된 물질 (모래, 규조토, 산성 결합물, 일반 결합물, 톱밥)에 흡입되도록 한다.
항목 13에 따라 오염된 물질을 쓰레기로 처분한다.
충분한 환기가 되도록 한다.
- **타 섹션 참조**
안전 관리에 대한 정보는 제7 장을 참고하십시오.
개인 보호 장비에 대한 정보는 제8 장을 참고하십시오.
쓰레기 처리에 대한 정보는 제13 장을 참고하십시오.

7 취급 및 저장방법

- **취급:**
- **안전 취급을 위한 예방조치**
작업장에서는 통풍이 잘 되고 습기 제거가 잘 되게 주의한다.
연무질이 형성되는 것을 피한다.
- **화재 및 폭발 사고 예방대책에 관한 정보:** 특별한 조치가 필요없음.
- **혼합 위험성 등 안전 저장 조건**
- **보관:**
- **안전한 저장 방법:** 특별한 요구사항이 없음.
- **하나의 공동 보관 시설에 대한 보관 관련 정보:** 필요없음
- **보관 조건에 관한 추가적인 정보:** 용기를 새지 않게 밀폐한 채 보관한다.
- **구체적 최종 사용자** 추가적인 정보가 존재하지 않습니다.

8 노출방지 및 개인보호구

- **첨단 시설 디자인에 대한 추가정보:** 더 이상 의 자료는 없음. 항목 7을 참고하십시오.
- **통제 변수**
- **화학물질의 노출기준, 생물학적 노출기준 등:** 생략

(4 쪽에 계속)

물질안전보건자료 GHS에 따라

기압점: 2017.01.10

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(3 쪽부터계속)

· **추가 정보:** 제 조 할 당 시에 유 효 한 목 록 을 기 초 로 사 용 했 다.

· **노출 통제**

· **개인 보호구**

· **일반적보호조치및위생조치:**

· 식료품, 음료수와 사료로부터 멀리떨어뜨려 놓는다.

· 더러워지거나 음료수가 묻은 옷은 즉시 탈의한다.

· 휴식 전 이 나 작업이 끝날 때 마다 손 을 씻 는 다.

· 피부와 의 접 촉 을 피 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 혼합물에 적합한 장갑재질에 대한 추천이 없다.

투과 시간, 침투율과 저하를 고려해서 장갑 재료를 선택한다.

· **장갑 의재료**

· 적합한장갑의선정은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업자에따라서도다르게선정되어야한다.

· **장갑재료의투과시간** 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.

· **눈 보호:**



팍 조 이 는 보 안 경

9 물리화학적 특성

· **기본 물리 및 화학적 특성에 대한 정보**

· **일반정보**

· **외형**

· 물리적 상태:

액체

· 색:

색소가없는

· **냄새:**

부드러운

· **후각역치**

알맞지않다.

· **pH:**

알맞지않다.

· **상태변화**

· 녹는점/어는점:

맞지않는

· 초기 끓는점과 끓는점 범위:

맞지않는

· **인화점:**

해당사항 없음.

· **인화성(고체, 기체):**

해당사항 없음.

· **점화온도:**

· 분해 온도:

알맞지않다.

(5 쪽에계속)

물질안전보건자료

GHS에 따라

기압점: 2017.01.10

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제품명: CROSSLINKER D (LOWICRYL HM20)

(4 쪽부터계속)

· 자기점화:	알맞지않다.
· 폭발위험:	이제품은폭발위험성이없다
· 인화 또는 폭발 범위의 상한/하한 아래로:	알맞지않다.
위로:	알맞지않다.
· 증기압:	알맞지않다.
· 밀도 의경우 20 °C:	1.07 g/cm ³
· 비중:	알맞지않다.
· 증기밀도:	알맞지않다.
· 증발 속도:	알맞지않다.
· 용해도: 물:	각각의경우에따라서는거의혼합할수없는
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도: 역학성:	알맞지않다.
동점성:	알맞지않다.
· 용매내용물 유기용매:	0.0 %
VOC (EU)	0.00 %
· 기타 정보	추가적인 정보가 존재하지 않습니다.

10 안정성 및 반응성

- 반응성 추가적인 정보가 존재하지 않습니다.
- 화학적 안정성
- 화학적 안정성 및 유해 반응의 가능성 / 피해야 할 조건: 규정에따라사용할경우해체는없다
- 유해반응 가능성 위험한반응으로는알려지지않았다.
- 피해야 할 조건 추가적인 정보가 존재하지 않습니다.
- 혼합 금지 물질: 추가적인 정보가 존재하지 않습니다.
- 유해분해물질: 위험성있는분해물들은알려지지않았다.

11 독성에 관한 정보

- 독성학적 영향에 대한 정보
- 급성 독성:
- 일차적 자극 효과:
- 피부 부식성 또는 자극성: 피부와점막을자극한다.
- 심한 눈 손상 또는 자극성: 심각한안구상처의위험이있는강한자극
- 감각화: 피부접촉을통하여감각화가능성이있다.
- 다음 종류의 잠재적인 효과에 대한 정보
- CMR-효과 (암 유발, 돌연변이성 그리고 생식 독성)
생식세포 변이원성 - 구분 2, 발암성 - 구분 2

KR

(6 쪽에계속)

물질안전보건자료

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(5 쪽부터계속)

12 환경에 미치는 영향

- **독성**
- **수생독성:** 추가적인 정보가 존재하지 않습니다.
- **지속성 및 분해성** 추가적인 정보가 존재하지 않습니다.
- **환경 시스템에서의 행동:**
- **생물농축 잠재성** 추가적인 정보가 존재하지 않습니다.
- **토양내 이동성** 추가적인 정보가 존재하지 않습니다.
- **생태독성:**
- **의견:** 어류 에 매우 독성임
- **추가적인 생태학 정보:**
- **일반 특징:**
수질오염등급 1 (자체등급분류): 약하게수질오염이된
희석시키지않은채대량으로지하수나, 하천으로그리고하수도망에도달하지않게한다.
하천에서는역시물고기나플랑크톤게는독성이있다.
물속의유기체에아주독이되는것
- **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.
- **기타 부작용** 추가적인 정보가 존재하지 않습니다.

13 폐기시 주의사항

- **폐기물 처리 방법**
- **권고:** 생활쓰레기와함께처리되어서는안된다. 하수도망으로유입되어서는안된다.
- **비위생적 포장:**
- **권고:** 당국의지침에입각한쓰레기처리.

14 운송에 필요한 정보

· 유엔 번호	
· ADR, IMDG, IATA	UN1993
· ADN	누락되다
· UN 적정 선적명	
· ADR	1993 FLAMMABLE LIQUID, N.O.S., ENVIRONMENTALLY HAZARDOUS
· ADN	누락되다
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S.
· 교통 위험 클래스	
· ADR, ADN, IMDG, IATA	
· 등급	누락되다
· 용기등급	
· ADR, IMDG, IATA	III
· 환경적 유해물질:	해당사항 없음.
· 이용자 특별 예방조치	해당사항 없음.

(7 쪽에계속)

물질안전보건자료

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(6 쪽부터계속)

· 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
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "모범 규제":	누락되다

15 법적 규제현황

· 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률

· Korean Existing Chemical Inventory		
109-16-0	Triethylene glycol dimethacrylate	KE-24994
123-31-9	hydroquinone	KE-35112

· 화학물질관리법

· 사고대비물질
성분이포함되어있지않다

· 금지물질
성분이포함되어있지않다

· 제한물질
성분이포함되어있지않다

· 유독물질
123-31-9 hydroquinone

· 허가물질
123-31-9 hydroquinone

· GHS 라벨 요소

본 화학물질은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· 그림문자



GHS05 GHS07 GHS08 GHS09

· 신호어 위험
· 유해.위험 문구
삼키면 유해함

(8 쪽에계속)

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기압점: 2017.01.10

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피부에 자극을 일으킴
 눈에 심한 손상을 일으킴
 알레르기성 피부 반응을 일으킬 수 있음
 유전적인 결함을 일으킬 것으로 의심됨
 암을 일으킬 것으로 의심됨
 호흡기계 자극을 일으킬 수 있음
 수생생물에 매우 유독함

· 예방조치 문구

(분진·흙·가스·미스트·증기·스프레이)의 흡입을 피하십시오.
 눈에 묻으면 몇 분간 물로 조심해서 씻으십시오. 가능하면콘택트렌즈를 제거하십시오. 계속 씻으십시오.
 즉시 독성물질센터/병원 연락 필요.
 (라벨 참조) 처치를 하십시오.
 잠금장치가 있는 저장장소에 저장 하십시오.
 현지/지역/국가/국제 규정에 따라서 내용물/용기 노출

· **화학물질 안전성 평가:** 화학물질 안전성 평가가 수행되지 않음

16 그 밖의 참고사항

이보고는우리지식에대한오늘날의상태에대하여평가하고있다, 하지만이보고서는생산특성에관한보증은
 기술하지않았으며계약적인법률관계에기반을두고있지도않다

- **최초 작성일자:** 2017.01.10
- **개정 횟수 및 최종 개정일자:** 1 / 2017.01.10
- **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
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 VOC: Volatile Organic Compounds (USA, EU)
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative

KR

Sikkerhetsdatablad

iflg. forordning (EF) nr. 1907/2006, Artikkel 31

Trykkdato: 10.01.2017

revidert den: 10.01.2017

Avsnitt 1: Identifikasjon av kjemikaliyet og ansvarlig firma

- **1.1 Produktidentifikator**
- **Handelsnavn:** CROSSLINKER D (LOWICRYL HM20)
- **Artikkelnummer:** 14340(D)
- **CAS-nummer:**
109-16-0
- **1.2 Relevante, identifiserte anvendelser av stoffet eller stoffblandingen, samt anvendelser som frarådes**
Ikke noe mer relevant informasjon tilgjengelig.
- **Bruk av stoffet/ tilberedning** laboratoriekjemikalier
- **1.3 Enkeltopplysninger om foretaket som leverer sikkerhetsdatabladet**
- **Produsent/leverandør:**
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
- **Avdeling for nærmere informasjoner:** Product safety department
- **1.4 Nødnummer:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

Avsnitt 2: Viktigste farenomenter

- **2.1 Klassifisering av stoff eller stoffblanding**
- **Klassifisering i henhold til EC-forskrift nr.1272/2008**



GHS08 Helsefare

Muta. 2 H341 Mistenkes å kunne gi genetiske skader.

Carc. 2 H351 Mistenkes for å kunne forårsake kreft.



GHS09 Miljø

Aquatic Acute 1 H400 Meget giftig for liv i vann.



GHS07

Acute Tox. 4 H302 Farlig ved svelging.

Skin Irrit. 2 H315 Irriterer huden.

Eye Irrit. 2 H319 Gir alvorlig øyeirritasjon.

Skin Sens. 1B H317 Kan utløse en allergisk hudreaksjon.

STOT SE 3 H335 Kan forårsake irritasjon av luftveiene.

- **2.2 Etiketlelementer**
- **Merking iht. bestemmelse (EC) Nr. 1272/2008**
Substansen er klassifisert og merket i henhold til CLP-forordningen.

(fortsatt på side 2)

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· **Farepiktogrammer**



GHS07 GHS08 GHS09

· **Varselord Advarsel**

· **Faresetninger**

H302 Farlig ved svelging.

H315 Irriterer huden.

H319 Gir alvorlig øyeirritasjon.

H317 Kan utløse en allergisk hudreaksjon.

H341 Mistenkes å kunne gi genetiske skader.

H351 Mistenkes for å kunne forårsake kreft.

H335 Kan forårsake irritasjon av luftveiene.

H400 Meget giftig for liv i vann.

· **Sikkerhetssetninger**

P261 Unngå innånding av støv/røyk/gass/tåke/damp/aerosoler.

P280 Benytt vernehansker/verneklær/vernebriller/ansiktsskjerm.

P305+P351+P338 VED KONTAKT MED ØYNENE: Skyll forsiktig med vann i flere minutter. Fjern eventuelle kontaktlinser dersom dette enkelt lar seg gjøre. Fortsett skyllingen.

P321 Særlig behandling (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: Stoffblandingers sammensetning og stoffenes klassifisering

· **3.1 Kjemisk karakterisering: Substanser**

· **CAS-nr. betegnelse**

109-16-0 Triethylene glycol dimethacrylate

Avsnitt 4: Førstehjelpstiltak

· **4.1 Beskrivelse av førstehjelpstiltak**

· **Generelle informasjoner:**

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 og tilkall lege.

· **Etter svelging:** Søk lege straks.

· **4.2 De viktigste symptomer og effekter, både akutt og forsinket** Ikke noe mer relevant informasjon tilgjengelig.

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- **4.3 Indikasjon på omgående medisinsk hjelp eller påkrevet spesialbehandling**
Ikke noe mer relevant informasjon tilgjengelig.

Avsnitt 5: Tiltak ved brannslukning

- **5.1 Slokkemiddel**
- **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 Spesielle farer som oppstår pga. substanser eller blandinger** Ikke noe mer relevant informasjon tilgjengelig.
- **5.3 Informasjon vedr. brannbekjempelse**
- **Spesielt verneutstyr:** Ingen spesielle tiltak nødvendig.

Avsnitt 6: Tiltak ved utilsiktet utslipp

- **6.1 Personlige vernetiltak, verneutstyr og prosedyrer ved nødsituasjoner** Ikke nødvendig.
- **6.2 Miljøverntiltak:**
Ansvarlige myndigheter varsles hvis produktet er kommet ned i vassdrag eller kloakk.
La ikke produktet komme ned i kloakk/overflatevann/grunnvann.
- **6.3 Metoder og materiale for oppsamling og opprensing:**
Ta opp stoffet med væskebindende materiale (sand, kiselgur, syrebindemiddel, universalbindemiddel, sagflis).
Bortskaff kontaminert matereriale 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 oppbevaring

- **7.1 Forholdsregler for sikker håndtering**
Sørg for god ventilasjon/avsugning på arbeidsplassen.
Unngå aerosoldannelse.
- **Henvisninger om brann- og eksplosjonsvern:** Ingen særlige tiltak nødvendig.
- **7.2 Vilkår for sikker lagring, inkl. eventuelle inkompatibiliteter**
- **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 Spesiell sluttbruk** Ikke noe mer relevant informasjon tilgjengelig.

Avsnitt 8: Eksponeringskontroll og personlig verneutstyr

- **Ytterligere informasjon om utforming av tekniske anlegg:** Ingen ytterligere informasjon, se punkt 7.
- **8.1 Kontrollparametere**
- **Komponenter med grenseverdier for arbeidsplass som må overholdes:** Bortfaller.
- **Ytterligere informasjon:** Basis: listene som var gyldige ved oppstillingen.

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· **8.2 Begrensning og kontroll av eksponering**

· **Personlig verneutstyr:**

· **Generelle verne- og hygienetiltak:**

Holdes adskilt fra næringsmidler, drikkevarer og fôrstoffer.

Fjern omgående forurensede, gjennomvåtede klær.

Vask hendene før arbeidspauser og ved arbeidets slutt.

Unngå berøring med huden.

Unngå berøring med øyne og hud.

· **Åndedrettsvern:**

Ved korttidig 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.

· **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 Informasjon om grunnleggende fysiske og kjemiske egenskaper**

· **alminnelige opplysninger**

· **Utseende:**

· Form:	Væske
· Farge:	Fargeløs
· Lukt:	Mild
· Luktterskel:	Ikke bestemt.

· **pH-verdi:** Ikke bestemt.

· **Tilstandsendring**

· Smeltepunkt/smelteområde:	Ikke bestemt.
· Kokepunkt/kokeområde:	Ikke bestemt.

· **Flammepunkt:** Ikke brukbar.

· **Antennelighet (fast, gassformet):** Ikke brukbar.

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NO

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· Antennelsestemperatur:	
· Spaltningstemperatur:	Ikke bestemt.
· Selvantennelighet: Ikke bestemt.	
· Eksplisjonsfare: Produktet er ikke eksplisjonsfarlig.	
· Eksplisjonsgrenser:	
· Nedre:	Ikke bestemt.
· Øvre:	Ikke bestemt.
· Damptrykk: Ikke bestemt.	
· Tetthet ved 20 °C: 1,07 g/cm ³	
· relativt tetthet	Ikke bestemt.
· damptetthet	Ikke bestemt.
· fordampningshastighet	Ikke bestemt.
· Løslighet i / blandbarhet med vann: Ikke, hhv. lite blandbar.	
· Fordelingskoeffisient (n-oktanol/vann): Ikke bestemt.	
· Viskositet:	
· Dynamisk:	Ikke bestemt.
· Kinematisk:	Ikke bestemt.
· Løsningsmiddelandel:	
· Organiske løsningsmidler:	0,0 %
· VOC (EF)	0,00 %
· 9.2 Annen informasjon 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 Mulighet for farlige reaksjoner** Det kjennes ingen farlige reaksjoner.
- **10.4 Forhold som bør unngås** Ikke noe mer relevant informasjon tilgjengelig.
- **10.5 Inkompatible materialer:** Ikke noe mer relevant informasjon tilgjengelig.
- **10.6 Farlige nedbrytningsprodukter:** Ingen farlige spaltningprodukt kjente.

Avsnitt 11: Opplysninger om helsefare

- **11.1 Informasjon om toksikologiske virkninger**
- **Akutt giftighet**
Farlig ved svelging.
- **Primær irritasjonsvirkning:**
- **Hudetsing/hudirritasjon**
Irriterer huden.
- **Alvorlig øyeskade/øyeirritasjon**
Gir alvorlig øyeirritasjon.
- **Sensibiliserende ved innånding eller hudkontakt**
Kan utløse en allergisk hudreaksjon.

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- **Informasjon om følgende grupper med potensielle virkninger:**
- **CMR-virkninger (kreftfremkallende virkninger, arvestoffskadelige og reproduksjonsskadelige virkninger)**
- **Skader på arvestoffet i kjønnsceller**
Mistenkes å kunne gi genetiske skader.
- **Kreftframkallende egenskap**
Mistenkes for å kunne forårsake kreft.
- **Reproduksjonstoksisitet** 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: Miljøopplysninger

- **12.1 Giftighet**
- **Akvatisk toksisitet:** Ikke noe mer relevant informasjon tilgjengelig.
- **12.2 Persistens og nedbrytbarhet** Ikke noe mer relevant informasjon tilgjengelig.
- **12.3 Bioakkumulasjonspotensial** Ikke noe mer relevant informasjon tilgjengelig.
- **12.4 Mobilitet i jord** Ikke noe mer relevant informasjon tilgjengelig.
- **Økotoksiske virkninger:**
- **Bemerkning:** meget giftig for fisk
- **Ytterligere økologiske informasjoner:**
- **Generelle informasjoner:**
Vannfareklasse 1 (D) (Selvklassifisering): lett farlig for vann
Ikke la stoffet komme ufortynnet ned i grunnvannet, i vassdrag eller i kloakker.
I vassdrag også giftig for fisker og plankton.
meget giftig for vannorganismer
- **12.5 Resultater av PBT- og vPvB-vurdering**
- **PBT:** Ikke brukbar.
- **vPvB:** Ikke brukbar.
- **12.6 Andre skadelige virkninger** Ikke noe mer relevant informasjon tilgjengelig.

Avsnitt 13: Fjerning av kjemikalieavfall

- **13.1 Metoder for avfallsbehandling**
- **Anbefaling:** Må ikke bortskaffes sammen med husholdningsavfall. Må ikke komme ned i kloakk.
- **Ikke rengjort emballasje:**
- **Anbefaling:** Deponering i henhold til myndighetenes forskrifter.

Avsnitt 14: Opplysninger om transport

- | | |
|---|--|
| · 14.1 UN-nummer: | |
| · ADR, IMDG, IATA | UN1993 |
| · ADN | bortfaller |
| · 14.2 Korrekt UN-forsendelsesbetegnelse | |
| · ADR | 1993 BRANNFARLIG VÆSKE N.O.S.,
MILJØSKADELG STOFF |
| · ADN | bortfaller |
| · IMDG, IATA | FLAMMABLE LIQUID, N.O.S. |

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· 14.3 transport fareklasser	
· ADR, ADN, IMDG, IATA	
· klasse	bortfaller
· 14.4 Emballasjegruppe:	
· ADR, IMDG, IATA	III
· 14.5 Miljøfarer:	Ikke brukbar.
· 14.6 Særskilte forholdsregler for bruker	Ikke brukbar.
· Stowage Category	A
· 14.7 Transport i bulk iht. annek II til MARPOL 73/78 og til IBC-koden	Ikke brukbar.
· Transport/ytterligere informasjoner:	
· ADR	
· Begrenset mengde (LQ)	5L
· Unntatte mengder (EQ)	Kode: E1 Maksimal nettovekt per inneremballasje: 30 ml Maksimal nettovekt per ytteremballasje: 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":	bortfaller

Avsnitt 15: Opplysninger om lover og forskrifter

- **15.1 Helse-, sikkerhets- og miljøforskrifter/lovgivning som gjelder spesielt for stoffet eller stoffblandingen**
Ikke noe mer relevant informasjon tilgjengelig.
- **15.2 Kjemisk sikkerhetsvurdering:** En kjemisk sikkerhetsvurdering er ikke utført.

Avsnitt 16: Andre opplysninger av betydning for helse, miljø og sikkerhet

Opplysningene er basert på vårt kjennskap i dag. De utgjør dog ingen forsikring om produktens egenskaper og er ikke grunnlag for noe kontraktmessig rettsforhold.

· 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

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

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity – Category 4

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

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

Skin Sens. 1B: Skin sensitisation – Category 1B

Muta. 2: Germ cell mutagenicity – Category 2

Carc. 2: Carcinogenicity – Category 2

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 10.01.2017

Revisión: 10.01.2017

SECCIÓN 1: Identificación de la sustancia o la mezcla y de la sociedad o la empresa

· 1.1 Identificador del producto

· **Nombre comercial:** CROSSLINKER D (LOWICRYL HM20)

· **Número del artículo:** 14340(D)

· **Número CAS:**

109-16-0

· **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: sgkceck@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. 2

H351 Se sospecha que provoca cáncer.



GHS09 medio ambiente

Aquatic Acute 1 H400 Muy tóxico para los organismos acuáticos.



GHS07

Acute Tox. 4

H302 Nocivo en caso de ingestión.

Skin Irrit. 2

H315 Provoca irritación cutánea.

Eye Irrit. 2

H319 Provoca irritación ocular grave.

Skin Sens. 1B

H317 Puede provocar una reacción alérgica en la piel.

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Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

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Nombre comercial: **CROSSLINKER D (LOWICRYL HM20)**

(se continua en página 1)

STOT SE 3 H335 Puede irritar las vías respiratorias.

· 2.2 Elementos de la etiqueta

· Etiquetado con arreglo al Reglamento (CE) n° 1272/2008

La sustancia se ha clasificado y etiquetado de conformidad con el reglamento CLP.

· Pictogramas de peligro



GHS07 GHS08 GHS09

· Palabra de advertencia Atención

· Indicaciones de peligro

H302 Nocivo en caso de ingestión.

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.

H351 Se sospecha que provoca cáncer.

H335 Puede irritar las vías respiratorias.

H400 Muy tóxico para los organismos acuáticos.

· 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.

P321 Se necesita un tratamiento específico (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

· 3.1 Caracterización química: Sustancias

· Denominación N° CAS

109-16-0 Triethylene glycol dimethacrylate

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.

· En caso de contacto con la piel: Lavar inmediatamente con agua y jabón y enjuagar bien.

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- **En caso de con los ojos:**
Limpiar los ojos abiertos durante varios minutos con agua corriente y 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:** *No se requieren medidas especiales.*

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:**
*Al penetrar en las aguas o en el alcantarillado, avisar a las autoridades pertinentes.
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.
Evitar la formación de aerosoles.*
- **Prevención de incendios y explosiones:** *No se requieren medidas especiales.*
- **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.*

SECCIÓN 8: Controles de exposición/protección individual

- **Instrucciones adicionales para el acondicionamiento de instalaciones técnicas:**
Sin datos adicionales, ver punto 7.

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- **8.1 Parámetros de control**
- **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:** Nulo.
- **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.

Evitar el contacto con la piel.

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.

- **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

SECCIÓN 9: Propiedades físicas y químicas

- **9.1 Información sobre propiedades físicas y químicas básicas**

- **Datos generales**

- **Aspecto:**

Forma: Líquido

Color: Incoloro

· **Olor:** Suave

· **Umbral olfativo:** No determinado.

· **valor pH:** No determinado.

- **Cambio de estado**

Punto de fusión /campo de fusión: Indeterminado.

Punto de ebullición /campo de ebullición: Indeterminado.

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· Punto de inflamación:	No aplicable.
· Inflamabilidad (sólido, gaseiforme):	No aplicable.
· Temperatura de ignición:	
Temperatura de descomposición:	No determinado.
· Autoinflamabilidad:	No determinado.
· Peligro de explosión:	El producto no es explosivo.
· Límites de explosión:	
Inferior:	No determinado.
Superior:	No determinado.
· Presión de vapor:	No determinado.
· Densidad a 20 °C:	1,07 g/cm ³
· Densidad relativa	No determinado.
· Densidad de vapor	No determinado.
· Velocidad de evaporación	No determinado.
· Solubilidad en / miscibilidad con agua:	Poco o no mezclable.
· Coeficiente de reparto (n-octanol/agua):	No determinado.
· Viscosidad:	
Dinámica:	No determinado.
Cinemática:	No determinado.
· Concentración del disolvente:	
Disolventes orgánicos:	0,0 %
VOC (CE)	0,00 %
· 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.
- **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.
- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas**
Provoca irritación cutánea.
- **Lesiones o irritación ocular graves**
Provoca irritación ocular grave.

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- **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**
Se sospecha que provoca 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.
- **Efectos ecotóxicos:**
- **Observación:** Muy tóxico para peces.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**
Nivel de riesgo para el agua 1 (autoclasiación): escasamente peligroso para el agua
En estado no diluido o no neutralizado, no dejar que se infiltre en aguas subterráneas, aguas superficiales o en alcantarillados.
Vertido en aguas superficiales, también es tóxico para los peces y el plancton.
muy tóxico para organismos acuáticos
- **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.

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.

SECCIÓN 14: Información relativa al transporte

- **14.1 Número ONU**
- **ADR, IMDG, IATA** UN1993
- **ADN** suprimido

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· 14.2 Designación oficial de transporte de las Naciones Unidas	
· ADR	1993 LÍQUIDO INFLAMABLE, N.E.P., PELIGROSO PARA EL MEDIO AMBIENTE
· ADN	suprimido
· IMDG, IATA	FLAMMABLE LIQUID, N.O.S.
· 14.3 Clase(s) de peligro para el transporte	
· ADR, ADN, IMDG, IATA	
· Clase	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	No aplicable.
· 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
· "Reglamentación Modelo" de la UNECE:	suprimido

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** No contiene la sustancia.
- **Categoría Seveso E1** Peligroso para el medio ambiente acuático
- **Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel inferior** 100 t
- **Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel superior** 200 t
- **REGLAMENTO (CE) n° 1907/2006 ANEXO XVII** Restricciones: 3
- **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.

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· 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

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

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Toxicidad aguda – Categoría 4

Skin Irrit. 2: Corrosión o irritación cutáneas – Categoría 2

Eye Irrit. 2: Lesiones oculares graves o irritación ocular – Categoría 2

Skin Sens. 1B: Sensibilización cutánea – Categoría 1B

Muta. 2: Mutagenicidad en células germinales – Categoría 2

Carc. 2: Carcinogenicidad – Categoría 2

STOT SE 3: Toxicidad específica en determinados órganos (exposición única) – Categoría 3

Aquatic Acute 1: Peligroso para el medio ambiente acuático - peligro acuático agudo – Categoría 1

ES