

Safety Data Sheet

acc. to OSHA HCS

Printing date 08/12/2022

Reviewed on 08/12/2022

1 Identification

- **Product identifier**
- **Trade name:** M-BOND CURING AGENT 600
- **Article number:** 50410-20B
- **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**



GHS02 Flame

Flammable Liquids 2

H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Sensitization - Respiratory 1

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carcinogenicity 2

H351 Suspected of causing cancer.



GHS05 Corrosion

Eye Damage 1

H318 Causes serious eye damage.



GHS07

Sensitization - Skin 1

H317 May cause an allergic skin reaction.

Specific Target Organ Toxicity - Single Exposure 3 H335 May cause respiratory irritation.

- **Label elements**

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

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Trade name: M-BOND CURING AGENT 600

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· Hazard pictograms

· Signal word *Danger*
· Hazard-determining components of labeling:
*tetrahydrofuran**benzene-1,2:4,5-tetracarboxylic dianhydride*
· Hazard statements
*Highly flammable liquid and vapor.**Causes serious eye damage.**May cause allergy or asthma symptoms or breathing difficulties if inhaled.**May cause an allergic skin reaction.**Suspected of causing cancer.**May cause respiratory irritation.*
· Precautionary statements
*Obtain special instructions before use.**Do not handle until all safety precautions have been read and understood.**Keep away from heat/sparks/open flames/hot surfaces. - No smoking.**Ground/bond container and receiving equipment.**Use explosion-proof electrical/ventilating/lighting/equipment.**Use only non-sparking tools.**Take precautionary measures against static discharge.**Avoid breathing dust/fume/gas/mist/vapors/spray**Use only outdoors or in a well-ventilated area.**Contaminated work clothing must not be allowed out of the workplace.**Wear protective gloves/protective clothing/eye protection/face protection.**[In case of inadequate ventilation] wear respiratory protection.**If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.**Continue rinsing.**Immediately call a poison center/doctor.**IF exposed or concerned: Get medical advice/attention.**Specific treatment (see on this label).**If skin irritation or rash occurs: Get medical advice/attention.**If experiencing respiratory symptoms: Call a poison center/doctor.**Wash contaminated clothing before reuse.**In case of fire: Use CO₂, powder or water spray to extinguish.**Store in a well-ventilated place. Keep container tightly closed.**Store in a well-ventilated place. Keep cool.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.*
· Classification system:
· NFPA ratings (scale 0 - 4)
*Health = 3**Fire = 3**Reactivity = 0*

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· HMIS-ratings (scale 0 - 4)

HEALTH	*3	Health = *3
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

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

· **Dangerous components:**

109-99-9	tetrahydrofuran	>50-≤100%
89-32-7	benzene-1,2:4,5-tetracarboxylic dianhydride	>2.5-≤10%

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**
Wear protective equipment. Keep unprotected persons away.

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- **Environmental precautions:**

Dilute with plenty of water.

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

- **Methods and material for containment and cleaning up:**

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

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

- **Protective Action Criteria for Chemicals**

- **PAC-1:**

109-99-9	tetrahydrofuran	100 ppm
89-32-7	benzene-1,2:4,5-tetracarboxylic dianhydride	6.8 mg/m ³
89-05-4	benzene-1,2,4,5-tetracarboxylic acid	0.98 mg/m ³

- **PAC-2:**

109-99-9	tetrahydrofuran	500 ppm
89-32-7	benzene-1,2:4,5-tetracarboxylic dianhydride	74 mg/m ³
89-05-4	benzene-1,2,4,5-tetracarboxylic acid	11 mg/m ³

- **PAC-3:**

109-99-9	tetrahydrofuran	5000* ppm
89-32-7	benzene-1,2:4,5-tetracarboxylic dianhydride	450 mg/m ³
89-05-4	benzene-1,2,4,5-tetracarboxylic acid	65 mg/m ³

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:**

Keep ignition sources away - Do not smoke.

Protect from heat.

Protect against electrostatic charges.

- **Conditions for safe storage, including any incompatibilities**

- **Storage:**

- **Requirements to be met by storerooms and receptacles:** Store in a cool location.

- **Information about storage in one common storage facility:** Not required.

- **Further information about storage conditions:**

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

- **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.

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· **Control parameters**

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

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

At this time, the remaining constituent has no known exposure limits.

109-99-9 tetrahydrofuran

PEL Long-term value: 590 mg/m³, 200 ppm

REL Short-term value: 735 mg/m³, 250 ppm
Long-term value: 590 mg/m³, 200 ppm

TLV Short-term value: 100 ppm
Long-term value: 50 ppm
Skin, A3, BEI

· **Ingredients with biological limit values:**

109-99-9 tetrahydrofuran

BEI 2 mg/L
Medium: urine
Time: end of shift
Parameter: Tetrahydrofuran

· **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 eyes.

· **Breathing equipment:**

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

· **Protection of hands:**



Protective gloves

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

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

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

· **Material of gloves**

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

· **Penetration time of glove material**

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

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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:	Amber colored
· Odor:	Ether-like
· Odor threshold:	Not determined.

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

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	66 °C (150.8 °F)

· **Flash point:** -14 °C (6.8 °F)· **Flammability (solid, gaseous):** Highly flammable.· **Ignition temperature:** 230 °C (446 °F)· **Decomposition temperature:** Not determined.· **Auto igniting:** Product is not selfigniting.· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.· **Explosion limits:**

· Lower:	1.8 Vol %
· Upper:	11.8 Vol %

· **Vapor pressure at 15 °C (59 °F):** 193.3 hPa (145 mm Hg)· **Density at 20 °C (68 °F):** 0.9 g/cm³ (7.5105 lbs/gal)· **Relative density** Not determined.· **Vapor density** Not determined.· **Evaporation rate** Not determined.· **Solubility in / Miscibility with**· **Water:** Fully miscible.· **Partition coefficient (n-octanol/water):** Not determined.· **Viscosity:**

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

· **Solvent content:**

· Organic solvents:	88.3 %
· VOC content:	88.25 %
	794.3 g/l / 6.63 lb/gal

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Solids content: 11.8 %

· **Other information** No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

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

109-99-9 tetrahydrofuran

Oral	LD50	2,500 mg/kg (rat)
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· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** Strong irritant with the danger of severe eye injury.

· **Sensitization:**

Sensitization possible through inhalation.

Sensitization possible through skin contact.

· **Additional toxicological information:**

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

Harmful

Irritant

· **Carcinogenic categories**

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

109-99-9	tetrahydrofuran	2B
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· **NTP (National Toxicology Program)**

None of the ingredients is listed.

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

None of the ingredients is 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.

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

13 Disposal considerations

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

14 Transport information

- | | | |
|---|--|---|
| <ul style="list-style-type: none"> · UN-Number · DOT, ADR, IMDG, IATA | <p style="margin-left: 20px;">UNI133</p> | |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT · ADR · IMDG, IATA | <p style="margin-left: 20px;">Adhesives
1133 ADHESIVES
ADHESIVES</p> | |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT | <div style="text-align: center; margin-bottom: 10px;">  </div> <ul style="list-style-type: none"> · Class · Label | <p style="margin-left: 20px;">3 Flammable liquids
3</p> |
| <ul style="list-style-type: none"> · ADR, IMDG, IATA | <div style="text-align: center; margin-bottom: 10px;">  </div> <ul style="list-style-type: none"> · Class · Label | <p style="margin-left: 20px;">3 Flammable liquids
3</p> |
| <ul style="list-style-type: none"> · Packing group · DOT, ADR, IMDG, IATA | <p style="margin-left: 20px;">II</p> | |
| <ul style="list-style-type: none"> · Environmental hazards: | <p style="margin-left: 20px;">Not applicable.</p> | |
| <ul style="list-style-type: none"> · Special precautions for user · Hazard identification number (Kemler code): | <p style="margin-left: 20px;">Warning: Flammable liquids
33</p> | |

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· EMS Number:	F-E,S-D
· Stowage Category	B
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
· ADR	
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1133 ADHESIVES, 3, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

· **Sara**

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

All components have the value ACTIVE.

· **Hazardous Air Pollutants**

None of the ingredients is listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

109-99-9 | tetrahydrofuran

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

109-99-9	tetrahydrofuran	SC
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- **TLV (Threshold Limit Value)**

109-99-9	tetrahydrofuran	A3
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- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

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

- **Hazard pictograms**



GHS02 GHS05 GHS07 GHS08

- **Signal word** *Danger*

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

tetrahydrofuran

benzene-1,2:4,5-tetracarboxylic dianhydride

- **Hazard statements**

Highly flammable liquid and vapor.

Causes serious eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Suspected of causing cancer.

May cause respiratory irritation.

- **Precautionary statements**

Obtain special instructions before use.

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

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

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

Use only outdoors or in a well-ventilated area.

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

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

[In case of inadequate ventilation] wear respiratory protection.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

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

Continue rinsing.

Immediately call a poison center/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

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

If experiencing respiratory symptoms: Call a poison center/doctor.

Wash contaminated clothing before reuse.

In case of fire: Use CO₂, powder or water spray to extinguish.

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

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Trade name: M-BOND CURING AGENT 600

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Store in a well-ventilated place. Keep cool.

Store locked up.

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.

· **Contact:**

· **Date of preparation / last revision** 08/12/2022 / -

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international 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

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety **Health**

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flammable Liquids 2: Flammable liquids – Category 2

Eye Damage 1: Serious eye damage/eye irritation – Category 1

Sensitization - Respiratory 1: Respiratory sensitisation – Category 1

Sensitization - Skin 1: Skin sensitisation – Category 1

Carcinogenicity 2: Carcinogenicity – Category 2

Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

Safety Data Sheet

according to WHS Regulations

Printing date 12.08.2022

Revision: 12.08.2022

1 Identification

· **Product identifier**

· **Trade name:** M-BOND CURING AGENT 600

· **Article number:** 50410-20B

· **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.

· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Electron Microscopy Sciences

1560 Industry Road

USA-Hatfield, PA 19440

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

email: sgkcck@aol.com

www.emsdiasum.com

ProSciTech Pty Ltd

11 Carlton Street, Kirwan QLD 4817 Australia

Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

Website: ems.proscitech.com

Emgrid Australia Pty. Ltd.

P.O. Box 118

The Patch VIC 3792

Australia

Tel: 03 9752 1785

Fax: 03 9752 1784

Website: www.emgrid.com.au

· **Further information obtainable from:** Product safety department

· **Emergency telephone number:**

ChemTrec 1-800-424-9300 Contract CCN7661

1-703-527-3887

2 Hazard(s) Identification

· **Classification of the substance or mixture**



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS08 health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carc. 2 H351 Suspected of causing cancer.



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.

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GHS07

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

STOT SE 3 H335 May cause respiratory irritation.

· **Label elements**

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

· **Hazard pictograms**



GHS02

GHS05

GHS07

GHS08

· **Signal word** *Danger*

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

tetrahydrofuran

benzene-1,2:4,5-tetracarboxylic dianhydride

· **Hazard statements**

Highly flammable liquid and vapour.

Causes serious eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Suspected of causing cancer.

May cause respiratory irritation.

· **Precautionary statements**

Obtain special instructions before use.

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

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

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

Use only outdoors or in a well-ventilated area.

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

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

Wear respiratory protection.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

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

Continue rinsing.

Immediately call a POISON CENTER/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

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

If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Wash contaminated clothing before reuse.

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

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

Store in a well-ventilated place. Keep cool.

Store locked up.

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- 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 and Information on Ingredients

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

- **Dangerous components:**

109-99-9	tetrahydrofuran	>50-≤100%
89-32-7	benzene-1,2:4,5-tetracarboxylic dianhydride	>2.5-≤10%

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

4 First Aid Measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. 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 Fire Fighting Measures

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

6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

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- 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:**
- Keep ignition sources away - Do not smoke.
- Protect from heat.
- Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
- Keep container tightly sealed.
- Store in cool, dry conditions in well sealed receptacles.
- Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls and personal protection

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

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

109-99-9 tetrahydrofuran

WES	Long-term value: 295 mg/m ³ , 100 ppm
Sk	

- **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 eyes.
- **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.

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· **Protection of hands:**



Protective gloves

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

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

· **Material of gloves**

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

· **Penetration time of glove material**

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

· **Eye protection:**



Tightly sealed goggles

9 Physical and Chemical Properties

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

· **General Information**

· **Appearance:**

Form:	Liquid
Colour:	Amber coloured
Odour:	Ether-like
Odour threshold:	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	66 °C

· **Flash point:** -14 °C

· **Flammability (solid, gas):** Highly flammable.

· **Ignition temperature:** 230 °C

· **Decomposition temperature:** Not determined.

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

· **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· **Explosion limits:**

Lower:	1.8 Vol %
Upper:	11.8 Vol %

· **Vapour pressure at 15 °C:** 193.3 hPa

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· Density at 20 °C:	0.9 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.

· Solubility in / Miscibility with water:	Fully miscible.
--	-----------------

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

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

· Solvent content:	
Organic solvents:	88.3 %
VOC (EC)	88.25 %

Solids content:	11.8 %
------------------------	--------

· Other information	No further relevant information available.
----------------------------	--

10 Stability and Reactivity

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

11 Toxicological Information

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

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

109-99-9 tetrahydrofuran

Oral | LD50 | 2,500 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** Strong irritant with the danger of severe eye injury.
- **Respiratory or skin sensitisation**
Sensitisation possible through inhalation.
Sensitisation possible through skin contact.

· **Additional toxicological information:**

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

Harmful
Irritant

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- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
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.
- **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.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

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

14 Transport information

- | | |
|---|-------------------------------------|
| <ul style="list-style-type: none"> · UN-Number · ADG, IMDG, IATA | <p>UNI133</p> |
| <ul style="list-style-type: none"> · UN proper shipping name · ADG · IMDG, IATA | <p>1133 ADHESIVES
ADHESIVES</p> |
| <ul style="list-style-type: none"> · Transport hazard class(es) · ADG, IMDG, IATA | <p>3</p> |
| <div style="text-align: center;">  </div> <ul style="list-style-type: none"> · Class · Label | <p>3 Flammable liquids.
3</p> |
| <ul style="list-style-type: none"> · Packing group · ADG, IMDG, IATA | <p>II</p> |

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· Environmental hazards:	Not applicable.
· Special precautions for user	Warning: Flammable liquids.
· Hazard identification number (Kemler code):	33
· EMS Number:	F-E,S-D
· Stowage Category	B
· 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: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· Transport category	2
· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1133 ADHESIVES, 3, II

15 Regulatory information

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

· **Australian Inventory of Industrial Chemicals**

All ingredients are listed.

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

None of the ingredients is listed.

· **Australia: Priority Existing Chemicals**

None of the ingredients is listed.

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

· **Hazard pictograms**



GHS02 GHS05 GHS07 GHS08

· **Signal word** Danger

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

tetrahydrofuran

benzene-1,2:4,5-tetracarboxylic dianhydride

· **Hazard statements**

Highly flammable liquid and vapour.

Causes serious eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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Trade name: M-BOND CURING AGENT 600

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May cause an allergic skin reaction.

Suspected of causing cancer.

May cause respiratory irritation.

· Precautionary statements

Obtain special instructions before use.

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

Keep away from heat/sparks/open flames/hot surfaces. No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

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

Use only outdoors or in a well-ventilated area.

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

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

Wear respiratory protection.

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

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

Continue rinsing.

Immediately call a POISON CENTER/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

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

If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Wash contaminated clothing before reuse.

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

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

Store in a well-ventilated place. Keep cool.

Store locked up.

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

· Directive 2012/18/EU

· Named dangerous substances - ANNEX I None of the ingredients is listed.

· Seveso category P5c FLAMMABLE LIQUIDS

· Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000 t

· Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 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.

· Contact:

· Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

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vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Resp. Sens. 1: Respiratory sensitisation – Category 1
Skin Sens. 1: Skin sensitisation – Category 1
Carc. 2: Carcinogenicity – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

AU

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Reviewed on 08/12/2022

1 Identification

- **Product identifier**
- **Trade name:** M-BOND CURING AGENT 600
- **Article number:** 50410-20B
- **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 identification

- **Classification of the substance or mixture**



GHS02 Flame

Flammable Liquids - Category 2

H225 Highly flammable liquid and vapour.



GHS08 Health hazard

Respiratory Sensitizer - Category 1

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carcinogenicity - Category 2

H351 Suspected of causing cancer.



GHS05 Corrosion

Serious Eye Damage - Category 1

H318 Causes serious eye damage.



GHS07

Skin Sensitizer - Category 1

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 product is classified and labeled according to the Globally Harmonized System (GHS).

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· **Hazard pictograms**· **Signal word** *Danger*· **Hazard-determining components of labeling:***tetrahydrofuran**benzene-1,2:4,5-tetracarboxylic dianhydride*· **Hazard statements***Highly flammable liquid and vapour.**Causes serious eye damage.**May cause allergy or asthma symptoms or breathing difficulties if inhaled.**May cause an allergic skin reaction.**Suspected of causing cancer.**May cause respiratory irritation.*· **Precautionary statements***Obtain special instructions before use.**Do not handle until all safety precautions have been read and understood.**Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**Ground and bond container and receiving equipment.**Use explosion-proof [electrical/ventilating/lighting] equipment.**Use non-sparking tools.**Take actions to prevent static discharges.**Avoid breathing dust/fume/gas/mist/vapours/spray.**Use only outdoors or in a well-ventilated area.**Contaminated work clothing should not be allowed out of the workplace.**Wear protective gloves/protective clothing/eye protection/face protection.**[In case of inadequate ventilation] wear respiratory protection.**IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**IF INHALED: Remove person to fresh air and keep comfortable for breathing.**IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.**Continue rinsing.**Immediately call a poison center/doctor.**IF exposed or concerned: Get medical advice/attention.**Specific treatment (see on this label).**Take off contaminated clothing and wash it before reuse.**If skin irritation or rash occurs: Get medical advice/attention.**If experiencing respiratory symptoms: Call a poison center/doctor.**In case of fire: Use CO₂, powder or water spray to extinguish.**Store in a well-ventilated place. Keep container tightly closed.**Store in a well-ventilated place. Keep cool.**Store locked up.**Dispose of contents/container in accordance with local/regional/national/international regulations.*· **Classification system:**· **NFPA ratings (scale 0 - 4)***Health = 3**Fire = 3**Reactivity = 0*

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· HMIS-ratings (scale 0 - 4)

HEALTH	*3	Health = *3
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

3 Composition/Information on ingredients

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

· Dangerous components:

109-99-9	tetrahydrofuran	80-100% w/w *
89-32-7	benzene-1,2:4,5-tetracarboxylic dianhydride	5-10% w/w *

* Actual concentration ranges are withheld as a trade secret.

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. 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**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.

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- **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 protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
- **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:**

109-99-9 tetrahydrofuran

EL	STEL: 100 ppm TWA: 50 ppm Skin, IARC 2B
EV	STEL: 100 ppm TWA: 50 ppm Skin

- **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 eyes.

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- **Breathing equipment:**

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

- **Protection of hands:**



Protective gloves

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

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

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

- **Material of gloves**

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

- **Penetration time of glove material**

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

- **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

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

- **General Information**

- **Appearance:**

Form: Liquid

Color: Amber colored

- **Odor:** Ether-like

- **Odor threshold:** Not determined.

- **pH-value:** Not determined.

- **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 66 °C

- **Flash point:** -14 °C

- **Flammability (solid, gaseous):** Highly flammable.

- **Ignition temperature:** 230 °C

- **Decomposition temperature:** Not determined.

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

- **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

- **Explosion limits:**

Lower: 1.8 Vol %

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Upper:	11.8 Vol %
· Vapor pressure at 15 °C:	193.3 hPa
· Density at 20 °C:	0.9 g/cm ³
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	88.3 %
Solids content:	11.8 %
· Other information	No further relevant information available.

10 Stability and reactivity

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

11 Toxicological information

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

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

109-99-9 tetrahydrofuran

Oral	LD50	2,500 mg/kg (rat)
------	------	-------------------

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:**
- Sensitization possible through inhalation.
- Sensitization possible through skin contact.
- **Additional toxicological information:**
- The product shows the following dangers according to internally approved calculation methods for preparations:
- Harmful
- Irritant

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- **Carcinogenic categories**

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

109-99-9 | tetrahydrofuran

2B

- **NTP (National Toxicology Program)**

None of the ingredients is 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.
- **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.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

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

14 Transport information

- | | |
|-----------------------------------|----------------|
| · UN-Number | |
| · DOT/TDG, ADR, IMDG, IATA | UN1133 |
| · UN proper shipping name | |
| · DOT/TDG | Adhesives |
| · ADR | 1133 Adhesives |
| · IMDG, IATA | ADHESIVES |

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Trade name: **M-BOND CURING AGENT 600**

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· **Transport hazard class(es)**· **DOT/TDG (Transport dangerous goods):**

· **Class** 3 Flammable liquids
 · **Label** 3

· **ADR, IMDG, IATA**

· **Class** 3 Flammable liquids
 · **Label** 3

· **Packing group**· **DOT/TDG, ADR, IMDG, IATA** II· **Environmental hazards:** Not applicable.· **Special precautions for user** Warning: Flammable liquids· **Hazard identification number (Kemler code):** 33· **EMS Number:** F-E,S-D· **Stowage Category** B

· **Transport in bulk according to Annex II of
 MARPOL 73/78 and the IBC Code** Not applicable.

· **Transport/Additional information:**· **DOT/TDG**

· **Quantity limitations** On passenger aircraft/rail: 5 L
 On cargo aircraft only: 60 L

· **ADR**

· **Excepted quantities (EQ)** Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml

· **IMDG**

· **Limited quantities (LQ)** 5L
 · **Excepted quantities (EQ)** Code: E2
 Maximum net quantity per inner packaging: 30 ml
 Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":** UN 1133 ADHESIVES, 3, II

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
 No further relevant information available.

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CA

Safety Data Sheet

according to HPR, Schedule 1

Printing date 08/12/2022

Reviewed on 08/12/2022

Trade name: **M-BOND CURING AGENT 600**

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

None of the ingredients is listed.

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

None of the ingredients is listed.

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

All components have the value ACTIVE.

· **Canadian substance listings:**· **Canadian Domestic Substances List (DSL)**

109-99-9 tetrahydrofuran

89-32-7 benzene-1,2:4,5-tetracarboxylic dianhydride

· **Canadian Non-Domestic Substances List (NDSL)**

89-05-4 benzene-1,2,4,5-tetracarboxylic acid

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

None of the ingredients is listed.

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

109-99-9 tetrahydrofuran

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

GHS02 GHS05 GHS07 GHS08

· **Signal word** Danger· **Hazard-determining components of labeling:**

tetrahydrofuran

benzene-1,2:4,5-tetracarboxylic dianhydride

· **Hazard statements**

Highly flammable liquid and vapour.

Causes serious eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

May cause an allergic skin reaction.

Suspected of causing cancer.

May cause respiratory irritation.

· **Precautionary statements**

Obtain special instructions before use.

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

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

Ground and bond container and receiving equipment.

Use explosion-proof [electrical/ventilating/lighting] equipment.

Use non-sparking tools.

Take actions to prevent static discharges.

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

Use only outdoors or in a well-ventilated area.

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

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

[In case of inadequate ventilation] wear respiratory protection.

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Safety Data Sheet

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IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

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

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

Immediately call a poison center/doctor.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see on this label).

Take off contaminated clothing and wash it before reuse.

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

If experiencing respiratory symptoms: Call a poison center/doctor.

In case of fire: Use CO₂, powder or water spray to extinguish.

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

Store in a well-ventilated place. Keep cool.

Store locked up.

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.

*· **Contact:***

*· **Date of the latest revision of the safety data sheet** 08/12/2022 / -*

*· **Abbreviations and acronyms:***

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

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

Printing date 12.08.2022

Revision: 12.08.2022

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

- **Product identifier**
- **Trade name:** M-BOND CURING AGENT 600
- **Article number:** 50410-20B
- **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**



flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Carc. 2 H351 Suspected of causing cancer.



corrosion

Eye Dam. 1 H318 Causes serious eye damage.



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

STOT SE 3 H335 May cause respiratory irritation.

Acute Tox. 5 H303 May be harmful if swallowed.

- **Label elements**

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

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Trade name: **M-BOND CURING AGENT 600**

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· **Hazard pictograms**· **Signal word** *Danger*· **Hazard-determining components of labelling:***tetrahydrofuran**benzene-1,2:4,5-tetracarboxylic dianhydride*· **Hazard statements***Highly flammable liquid and vapour.**May be harmful if swallowed.**Causes serious eye damage.**May cause allergy or asthma symptoms or breathing difficulties if inhaled.**May cause an allergic skin reaction.**Suspected of causing cancer.**May cause respiratory irritation.*· **Precautionary statements***IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.**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).**Take off contaminated clothing and wash it before reuse.**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:** *Mixtures*· **Description:** *Mixture of substances listed below with nonhazardous additions.*· **Dangerous components:**

109-99-9	tetrahydrofuran 	>50-≤100%
89-32-7	benzene-1,2:4,5-tetracarboxylic dianhydride 	>2.5-≤10%

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

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Trade name: **M-BOND CURING AGENT 600**

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4 First aid measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. 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**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**
Dilute with plenty of water.
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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:**
Keep ignition sources away - Do not smoke.
Protect from heat.

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Protect against electrostatic charges.

· **Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:** Store in a cool location.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Protect from heat and direct sunlight.

· **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:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

· **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 eyes.

· **Respiratory protection:**

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

· **Protection of hands:**



Protective gloves

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

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

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

· **Material of gloves**

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

· **Penetration time of glove material**

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

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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:	Amber coloured
· Odour:	Ether-like
· Odour threshold:	Not determined.

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

· Melting point/freezing point:	Undetermined.
· Initial boiling point and boiling range:	66 °C

· **Flash point:** -14 °C· **Flammability (solid, gas):** Highly flammable.· **Ignition temperature:** 230 °C· **Decomposition temperature:** Not determined.· **Auto-ignition temperature:** Product is not selfigniting.· **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.· **Explosion limits:**

· Lower:	1.8 Vol %
· Upper:	11.8 Vol %

· **Vapour pressure at 15 °C:** 193.3 hPa

· Density at 20 °C:	0.9 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.

· **Solubility in / Miscibility with water:** Fully miscible.· **Partition coefficient: n-octanol/water:** Not determined.· **Viscosity:**

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

· **Solvent content:**

· Organic solvents:	88.3 %
· VOC (EC)	88.25 %

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Solids content:	11.8 %
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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**

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

109-99-9 tetrahydrofuran		
Oral	LD50	2,500 mg/kg (rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** No irritant effect.
- **Serious eye damage/irritation** Strong irritant with the danger of severe eye injury.
- **Respiratory or skin sensitisation**
Sensitisation possible through inhalation.
Sensitisation possible through skin contact.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Irritant
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
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.
- **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.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.

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- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

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

14 Transport information

<ul style="list-style-type: none"> · UN-Number · ADR, IMDG, IATA 	UNI133
<ul style="list-style-type: none"> · UN proper shipping name · ADR · IMDG, IATA 	1133 ADHESIVES ADHESIVES
<ul style="list-style-type: none"> · Transport hazard class(es) · ADR, IMDG, IATA 	<div style="text-align: center;">  </div>
<ul style="list-style-type: none"> · Class · Label 	3 Flammable liquids. 3
<ul style="list-style-type: none"> · Packing group · ADR, IMDG, IATA 	II
<ul style="list-style-type: none"> · Environmental hazards: 	Not applicable.
<ul style="list-style-type: none"> · Special precautions for user · Hazard identification number (Kemler code): · EMS Number: · Stowage Category 	Warning: Flammable liquids. 33 F-E,S-D B
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of Marpol and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
<ul style="list-style-type: none"> · Transport category · Tunnel restriction code 	2 D/E

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· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2
	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1133 ADHESIVES, 3, II

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **GHS label elements** The product is classified and labelled according to the Globally Harmonised System (GHS).
- **Hazard pictograms**



- **Signal word** *Danger*
- **Hazard-determining components of labelling:**
tetrahydrofuran
benzene-1,2:4,5-tetracarboxylic dianhydride
- **Hazard statements**
Highly flammable liquid and vapour.
May be harmful if swallowed.
Causes serious eye damage.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Suspected of causing cancer.
May cause respiratory irritation.
- **Precautionary statements**
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
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).
Take off contaminated clothing and wash it before reuse.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** *None of the ingredients is listed.*
- **Seveso category** *P5c FLAMMABLE LIQUIDS*
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** *5,000 t*
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** *50,000 t*
- **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

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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.

· **Relevant phrases**

H225 Highly flammable liquid and vapour.

H303 May be harmful if swallowed.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

· **Contact:**

· **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

Acute Tox. 5: Acute toxicity – Category 5

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

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

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

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 12.08.2022

Revision: 12.08.2022

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

- **1.1 Product identifier**
- **Trade name:** M-BOND CURING AGENT 600
- **Article number:** 50410-20B
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Further information obtainable from:** Product safety department
- **1.4 Emergency telephone number:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

SECTION 2: Hazards identification

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



flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Carc. 2 H351 Suspected of causing cancer.



corrosion

Eye Dam. 1 H318 Causes serious eye damage.



Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335 May cause respiratory irritation.

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

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GB

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Trade name: **M-BOND CURING AGENT 600**

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· **Hazard pictograms**

GHS02

GHS05

GHS07

GHS08

· **Signal word** *Danger*· **Hazard-determining components of labelling:***tetrahydrofuran**benzene-1,2:4,5-tetracarboxylic dianhydride*· **Hazard statements***H225 Highly flammable liquid and vapour.**H318 Causes serious eye damage.**H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.**H317 May cause an allergic skin reaction.**H351 Suspected of causing cancer.**H335 May cause respiratory irritation.*· **Precautionary statements***P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].**P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.**P310 Immediately call a POISON CENTER/doctor.**P321 Specific treatment (see on this label).**P362+P364 Take off contaminated clothing and wash it before reuse.**P405 Store locked up.**P501 Dispose of contents/container in accordance with local/regional/national/international regulations.*· **2.3 Other hazards**· **Results of PBT and vPvB assessment**· **PBT:** Not applicable.· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

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

CAS: 109-99-9	tetrahydrofuran	>50-≤100%
EINECS: 203-726-8	Flam. Liq. 2, H225; Carc. 2, H351; Eye Irrit. 2, H319; STOT SE 3, H335	
CAS: 89-32-7	benzene-1,2:4,5-tetracarboxylic dianhydride	>2.5-≤10%
EINECS: 201-898-9	Resp. Sens. 1, H334; Eye Dam. 1, H318; Skin Sens. 1, H317	

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

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Trade name: **M-BOND CURING AGENT 600**

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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.

· 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

Wear protective equipment. Keep unprotected persons away.

· 6.2 Environmental precautions:

Dilute with plenty of water.

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

· 6.3 Methods and material for containment and cleaning up:

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

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· 6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage

· 7.1 Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

· Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Protect from heat.

Protect against electrostatic charges.

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Trade name: **M-BOND CURING AGENT 600**

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- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**
Keep container tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
Protect from heat and direct sunlight.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

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

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

109-99-9 tetrahydrofuran

WEL	Short-term value: 300 mg/m ³ , 100 ppm
	Long-term value: 150 mg/m ³ , 50 ppm
Sk	

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



Protective gloves

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

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

- **Material of gloves**

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

- **Penetration time of glove material**

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

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· **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:	Amber coloured
· Odour:	Ether-like
· Odour threshold:	Not determined.

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

· Melting point/freezing point:	Undetermined.
· Initial boiling point and boiling range:	66 °C

· **Flash point:** -14 °C· **Flammability (solid, gas):** Highly flammable.· **Ignition temperature:** 230 °C· **Decomposition temperature:** Not determined.· **Auto-ignition temperature:** Product is not selfigniting.· **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.· **Explosion limits:**

· Lower:	1.8 Vol %
· Upper:	11.8 Vol %

· **Vapour pressure at 15 °C:** 193.3 hPa

· Density at 20 °C:	0.9 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.

· **Solubility in / Miscibility with water:** Fully miscible.· **Partition coefficient: n-octanol/water:** Not determined.· **Viscosity:**

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

· **Solvent content:**

· Organic solvents:	88.3 %
· VOC (EC)	88.25 %

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Solids content:	11.8 %
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· 9.2 Other information	No further relevant information available.
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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** Based on available data, the classification criteria are not met.

· LD/LC50 values relevant for classification:
--

109-99-9 tetrahydrofuran

Oral	LD50	2,500 mg/kg (rat)
------	------	-------------------

- **Primary irritant effect:**
- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation**
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
- **Additional toxicological information:**
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **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.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

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- Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

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

SECTION 14: Transport information

- | | |
|---|---|
| · 14.1 UN-Number | UN1133 |
| · ADR, IMDG, IATA | |
| · 14.2 UN proper shipping name | 1133 ADHESIVES |
| · ADR | ADHESIVES |
| · IMDG, IATA | |
| · 14.3 Transport hazard class(es) | |
| · ADR, IMDG, IATA | |
|  | |
| · Class | 3 Flammable liquids. |
| · Label | 3 |
| · 14.4 Packing group | II |
| · ADR, IMDG, IATA | |
| · 14.5 Environmental hazards: | Not applicable. |
| · 14.6 Special precautions for user | Warning: Flammable liquids. |
| · Hazard identification number (Kemler code): | 33 |
| · EMS Number: | F-E,S-D |
| · Stowage Category | B |
| · 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code | Not applicable. |
| · Transport/Additional information: | |
| · ADR | |
| · Limited quantities (LQ) | 5L |
| · Excepted quantities (EQ) | Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml |
| · Transport category | 2 |

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· Tunnel restriction code	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1133 ADHESIVES, 3, II

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** None of the ingredients is listed.
- **Seveso category P5c FLAMMABLE LIQUIDS**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t
- **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.

- **Relevant phrases**

H225 Highly flammable liquid and vapour.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335 May cause respiratory irritation.

H351 Suspected of causing cancer.

- **Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Flammable liquids – Category 2

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

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

Resp. Sens. 1: Respiratory sensitisation – Category 1

Skin Sens. 1: Skin sensitisation – Category 1

Carc. 2: Carcinogenicity – Category 2

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

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

- **1.1 Productidentificatie**
- **Handelsnaam:** M-BOND CURING AGENT 600
- **Artikelnummer:** 50410-20B
- **UFI:** 4EC3-N02S-G00C-656U
- **1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik**
Geen verdere relevante informatie verkrijgbaar.
- **Toepassing van de stof / van de bereiding** Laboratoriumchemicaliën
- **1.3 Details betreffende de verstrekker van het veiligheidsinformatieblad**
- **Fabrikant/leverancier:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com
- **Aurion**
Binnenhaven 5
6709 PD Wageningen
The Netherlands
Tel: 31 317 415094
Fax: 31 317 415955
email: info@aurion.nl
- **Inlichtingengevende sector:** Product safety department
- **1.4 Telefoonnummer voor noodgevallen:**
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

RUBRIEK 2: Identificatie van de gevaren

- **2.1 Indeling van de stof of het mengsel**
- **Indeling overeenkomstig Verordening (EG) nr. 1272/2008**



GHS02 vlam

Flam. Liq. 2 H225 Licht ontvlambare vloeistof en damp.



GHS08 gezondheidsgevaar

Resp. Sens. 1 H334 Kan bij inademing allergie- of astmasymptomen of ademhalingsmoeilijkheden veroorzaken.

Carc. 2 H351 Verdacht van het veroorzaken van kanker.



GHS05 corrosie

Eye Dam. 1 H318 Veroorzaakt ernstig oogletsel.



GHS07

(Vervolg op blz. 2)

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Skin Sens. 1 H317 Kan een allergische huidreactie veroorzaken.

STOT SE 3 H335 Kan irritatie van de luchtwegen veroorzaken.

2.2 Etiketteringselementen

Etikettering overeenkomstig Verordening (EG) nr. 1272/2008

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

Gevarenpictogrammen



GHS02 GHS05 GHS07 GHS08

Signaalwoord Gevaar

Gevaaraanduidende componenten voor de etikettering:

tetrahydrofuraan

benzeen-1,2:4,5-tetracarbonsuur dianhydride

Gevarenaanduidingen

H225 Licht ontvlambare vloeistof en damp.

H318 Veroorzaakt ernstig oogletsel.

H334 Kan bij inademing allergie- of astmasymptomen of ademhalingsmoeilijkheden veroorzaken.

H317 Kan een allergische huidreactie veroorzaken.

H351 Verdacht van het veroorzaken van kanker.

H335 Kan irritatie van de luchtwegen veroorzaken.

Veiligheidsaanbevelingen

P303+P361+P353 BIJ CONTACT MET DE HUID (of het haar): verontreinigde kleding onmiddellijk uittrekken.
Huid met water afspoelen [of afdouchen].

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

P310 Onmiddellijk een ANTIGIFCENTRUM/arts raadplegen.

P321 Specifieke behandeling vereist (zie op dit etiket).

P362+P364 Verontreinigde kleding uittrekken en wassen alvorens deze opnieuw te gebruiken.

P405 Achter slot bewaren.

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

2.3 Andere gevaren

Resultaten van PBT- en zPzB-beoordeling

PBT: Niet bruikbaar.

zPzB: Niet bruikbaar.

RUBRIEK 3: Samenstelling en informatie over de bestanddelen

3.2 Chemische karakterisering: Mengsels

Beschrijving: Mengsel van na elkaar aangevoerde stoffen met ongevaarlijke bijmengingen.

Gevaarlijke inhoudstoffen:

CAS: 109-99-9	tetrahydrofuraan	>50-≤100%
EINECS: 203-726-8	Flam. Liq. 2, H225; Carc. 2, H351; Eye Irrit. 2, H319; STOT SE 3, H335	
CAS: 89-32-7	benzeen-1,2:4,5-tetracarbonsuur dianhydride	>2,5-≤10%
EINECS: 201-898-9	Resp. Sens. 1, H334; Eye Dam. 1, H318; Skin Sens. 1, H317	

(Vervolg op blz. 3)

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· **Aanvullende gegevens:**

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

RUBRIEK 4: Eerstehulpmaatregelen

· **4.1 Beschrijving van de eerstehulpmaatregelen**

· **Algemene informatie:**

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

· **Na het inademen:**

Veel verse lucht toedienen en voor alle zekerheid een arts raadplegen.

Bij bewusteloosheid ligging en vervoer in stabiele zijligging.

· **Na huidcontact:** Onmiddellijk met water en zeep afwassen en goed naspoelen.

· **Na oogcontact:** 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, beschermingsmiddelen en noodprocedures**

Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.

· **6.2 Milieuvoorzorgsmaatregelen:**

Met veel water verdunnen.

Niet in de riolering/het oppervlaktewater/het grondwater laten terechtkomen.

· **6.3 Insluitings- 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.

(Vervolg op blz. 4)

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- **Informatie m.b.t. brand- en ontploffingsgevaar:**
*Onststekingsbronnen op afstand houden - niet roken.
 Beschermen tegen hitte.
 Maatregelen treffen tegen ontlading van statische elektriciteit.*
- **7.2 Voorwaarden voor een veilige opslag, met inbegrip van incompatibele producten**
- **Opslag:**
- **Eisen ten opzichte van opslagruimte en tanks:** *Op een koele plaats bewaren.*
- **Informatie m.b.t. gezamenlijke opslag:** *Niet noodzakelijk.*
- **Verdere inlichtingen over eisen m.b.t. de opslag:**
*Tanks ondoordringbaar gesloten houden.
 Koel en droog bewaren in goed gesloten vaten.
 Tegen hitte en directe zonnestralen beschermen.*
- **7.3 Specifiek eindgebruik** *Geen verdere relevante informatie verkrijgbaar.*

RUBRIEK 8: Maatregelen ter beheersing van blootstelling/persoonlijke bescherming

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

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

109-99-9 tetrahydrofuraan

WGW	Korte termijn waarde: 600 mg/m ³ , 200 ppm Lange termijn waarde: 300 mg/m ³ , 100 ppm
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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 ogen 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. Aangezien het product uit meerdere stoffen is samengesteld, is de duurzaamheid van de handschoenmaterialen niet vooraf berekenbaar en moet derhalve vóór het gebruik worden getest.

- **Doordringingstijd van het handschoenmateriaal**

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

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· Oogbescherming:



Nauw aansluitende veiligheidsbril

RUBRIEK 9: Fysische en chemische eigenschappen

· 9.1 Informatie over fysische en chemische basiseigenschappen

· Algemene gegevens

· Voorkomen:

Vorm:	Vloeistof
Kleur:	Barnsteenkleurig
Geur:	Etherachtig
Geurdrempelwaarde:	Niet bepaald.

· pH-waarde: Niet bepaald.

· Toestandsverandering

Smelt-/vriespunt:	Niet bepaald.
Beginkookpunt en kooktraject:	66 °C

· Vlampunt: -14 °C

· Ontvlambaarheid (vast, gas): Licht ontvlambaar.

· Ontstekingstemperatuur: 230 °C

· Ontledingstemperatuur: Niet bepaald.

· Zelfontbrandingstemperatuur: Het produkt ontbrandt niet uit zichzelf.

· Ontploffingseigenschappen: Het produkt is niet ontploffingsgevaarlijk, maar de vorming van ontploffingsgevaarlijke damp-/luchtmengsels is mogelijk.

· Ontploffingsgrenzen:

Onderste:	1,8 Vol %
Bovenste:	11,8 Vol %

· Dampspanning bij 15 °C: 193,3 hPa

· Dichtheid bij 20 °C: 0,9 g/cm³

· Relatieve dichtheid: Niet bepaald.

· Dampdichtheid: Niet bepaald.

· Verdampingssnelheid: Niet bepaald.

· Oplosbaarheid in/mengbaarheid met

Water: Volledig mengbaar.

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

· Viscositeit

Dynamisch:	Niet bepaald.
Kinematisch:	Niet bepaald.

· Oplosmiddelgehalte:

Organisch oplosmiddel:	88,3 %
VOC (EG)	88,25 %

(Vervolg op blz. 6)

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Gehalte aan vaste bestanddelen:	11,8 %
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· 9.2 Overige informatie	Geen verdere relevante informatie verkrijgbaar.
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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** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.

· Indelingsrelevantie LD/LC50-waarden:

109-99-9 tetrahydrofuraan

Oraal	LD50	2.500 mg/kg (rat)
-------	------	-------------------

- **Primaire aandoening:**
- **Huidcorrosie/-irritatie** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **Ernstig oogletsel/oogirritatie**
Veroorzaakt ernstig oogletsel.
- **Sensibilisatie van de luchtwegen/de huid**
Kan bij inademing allergie- of astmasymptomen of ademhalingsmoeilijkheden veroorzaken.
Kan een allergische huidreactie veroorzaken.
- **Aanvullende toxicologische informatie:**
- **CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)**
- **Mutageniteit in geslachtscellen** Gebaseerd op beschikbare gegevens; aan de indelingscriteria is niet voldaan.
- **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.
- **Verdere ecologische informatie:**
- **Algemene informatie:**
Waterbezwaarlijkheid (NL): B(4) Weinig schadelijk voor in water levende organismen

(Vervolg op blz. 7)

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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.

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.

- **Aanbevolen reinigingsmiddel:** Water, eventueel met toevoeging van reinigingsmiddelen.

RUBRIEK 14: Informatie met betrekking tot het vervoer

14.1 VN-nummer

- **ADR, IMDG, IATA** UN1133

14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN

- **ADR** 1133 LIJMEN

- **IMDG, IATA** ADHESIVES

14.3 Transportgevarenklasse(n)

- **ADR, IMDG, IATA**



- **klasse** 3 Brandbare vloeistoffen

- **Etiket** 3

14.4 Verpakkingsgroep:

- **ADR, IMDG, IATA** II

14.5 Milieugevaren:

- Niet bruikbaar.

14.6 Bijzondere voorzorgen voor de gebruiker

- Waarschuwing: Brandbare vloeistoffen

- **Gevaarsidentificatienummer (Kemler-getal):** 33

- **EMS-nummer:** F-E,S-D

- **Stowage Category** B

14.7 Vervoer in bulk overeenkomstig bijlage II bij

- Marpol en de IBC-code** Niet bruikbaar.

Transport/verdere gegevens:

- **ADR**

- **Beperkte hoeveelheden (LQ)** 5L

- **Uitgezonderde hoeveelheden (EQ)** Code: E2

- Grootste netto hoeveelheid per binnenverpakking: 30 ml

- Grootste netto hoeveelheid per buitenverpakking: 500 ml

- **Vervoerscategorie** 2

(Vervolg op blz. 8)

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· Tunnelbeperkingscode	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· VN "Model Regulation":	UN 1133 LIJMEN, 3, II

RUBRIEK 15: Regelgeving

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

· **SZW-lijst van kankerverwekkende stoffen**

geen der bestanddelen staat op de lijst.

· **SZW-lijst van mutagene stoffen**

geen der bestanddelen staat op de lijst.

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

geen der bestanddelen staat op de lijst.

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

geen der bestanddelen staat op de lijst.

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

geen der bestanddelen staat op de lijst.

· **Lijst Zeer Zorgwekkende Stoffen (ZZS)**

geen der bestanddelen staat op de lijst.

· **Lijst van Potentieel Zeer Zorgwekkende Stoffen**

geen der bestanddelen staat op de lijst.

· **Richtlijn 2012/18/EU**

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

· **Seveso-categorie P5c ONTVLAMBARE VLOEISTOFFEN**

· **Drempelwaarde (ton) voor toepassing van voorschriften voor lagedrempelinrichtingen** 5.000 t

· **Drempelwaarde (ton) voor toepassing van voorschriften voor hogedrempelinrichtingen** 50.000 t

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

· **Richtlijn 2011/65/EU betreffende beperking van het gebruik van bepaalde gevaarlijke stoffen in elektrische en elektronische apparatuur - Bijlage II**

geen der bestanddelen staat op de lijst.

· **VERORDENING (EU) 2019/1148**

· **Bijlage I - PRECURSOREN VOOR EXPLOSIEVEN WAARVOOR EEN BEPERKING GELDT (Bovengrenswaarde ten behoeve van vergunningverlening op grond van artikel 5, lid 3)**

geen der bestanddelen staat op de lijst.

· **Bijlage II - PRECURSOREN VOOR EXPLOSIEVEN DIE MOETEN WORDEN GEMELD**

geen der bestanddelen staat op de lijst.

· **Verordening (EG) nr. 273/2004 inzake drugsprecursoren**

geen der bestanddelen staat op de lijst.

(Vervolg op blz. 9)

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· **Verordening (EG) Nr. 111/2005 houdende voorschriften voor het toezicht op de handel tussen de Gemeenschap en derde landen in drugsprecursoren**

geen der bestanddelen staat op de lijst.

· **Nationale voorschriften:**

· **Gevaarklasse v. water:** Waterbezwaarlijkheid (NL): B(4) Weinig schadelijk voor in water levende organismen

· **15.2 Chemischeveiligheidsbeoordeling:** Een chemische veiligheidsbeoordeling is niet uitgevoerd.

RUBRIEK 16: Overige informatie

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

· **Relevante zinnen**

H225 Licht ontvlambare vloeistof en damp.

H317 Kan een allergische huidreactie veroorzaken.

H318 Veroorzaakt ernstig oogletsel.

H319 Veroorzaakt ernstige oogirritatie.

H334 Kan bij inademing allergie- of astmasymptomen of ademhalingsmoeilijkheden veroorzaken.

H335 Kan irritatie van de luchtwegen veroorzaken.

H351 Verdacht van het veroorzaken van kanker.

· **Afkortingen en acroniemen:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Ontvlambare vloeistoffen – Categorie 2

Eye Dam. 1: Ernstig oogletsel/oogirritatie – Categorie 1

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

Resp. Sens. 1: Sensibilisatie van de luchtwegen – Categorie 1

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

Carc. 2: Kankerverwekkendheid – Categorie 2

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

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

- **1.1 Identificateur de produit**
- **Nom du produit:** M-BOND CURING AGENT 600
- **Code du produit:** 50410-20B
- **UFI:** 4EC3-N02S-G00C-656U
- **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: sgkcek@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**
-  GHS02 flamme
 Flam. Liq. 2 H225 Liquide et vapeurs très inflammables.
-  GHS08 danger pour la santé
 Resp. Sens. 1 H334 Peut provoquer des symptômes allergiques ou d'asthme ou des difficultés respiratoires par inhalation.
 Carc. 2 H351 Susceptible de provoquer le cancer.
-  GHS05 corrosion
 Eye Dam. 1 H318 Provoque de graves lésions des yeux.
-  GHS07
 Skin Sens. 1 H317 Peut provoquer une allergie cutanée.
 STOT SE 3 H335 Peut irriter les voies respiratoires.
- **2.2 Éléments d'étiquetage**
- **Étiquetage selon le règlement (CE) n° 1272/2008** Le produit est classifié et étiqueté selon le règlement CLP.

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· Pictogrammes de danger



GHS02 GHS05 GHS07 GHS08

· Mention d'avertissement Danger

· Composants dangereux déterminants pour l'étiquetage:

tétrahydrofurane

anhydride benzène-1,2:4,5-tétracarboxylique

· Mentions de danger

H225 Liquide et vapeurs très inflammables.

H318 Provoque de graves lésions des yeux.

H334 Peut provoquer des symptômes allergiques ou d'asthme ou des difficultés respiratoires par inhalation.

H317 Peut provoquer une allergie cutanée.

H351 Susceptible de provoquer le cancer.

H335 Peut irriter les voies respiratoires.

· Conseils de prudence

P303+P361+P353 EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau [ou se doucher].

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.

P310 Appeler immédiatement un CENTRE ANTIPOISON/un médecin.

P321 Traitement spécifique (voir sur cette étiquette).

P362+P364 Enlever les vêtements contaminés et les laver avant réutilisation.

P405 Garder sous clef.

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

· 2.3 Autres dangers

· Résultats des évaluations PBT et vPvB

· **PBT:** Non applicable.

· **vPvB:** Non applicable.

RUBRIQUE 3: Composition/informations sur les composants

· 3.2 Caractérisation chimique: Mélanges

· **Description:** Mélange des substances mentionnées à la suite avec des additifs non dangereux.

· Composants dangereux:

CAS: 109-99-9 EINECS: 203-726-8	tétrahydrofurane ⚠ Flam. Liq. 2, H225; ⚠ Carc. 2, H351; ⚠ Eye Irrit. 2, H319; STOT SE 3, H335	>50-≤100%
CAS: 89-32-7 EINECS: 201-898-9	anhydride benzène-1,2:4,5-tétracarboxylique ⚠ Resp. Sens. 1, H334; ⚠ Eye Dam. 1, H318; ⚠ Skin Sens. 1, H317	>2,5-≤10%

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

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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.

· 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

· Equipement 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

Porter un équipement de sécurité. Eloigner les personnes non protégées.

· 6.2 Précautions pour la protection de l'environnement:

Diluer avec beaucoup d'eau.

Ne pas rejeter dans les canalisations, dans les eaux de surface et dans les nappes d'eau souterraines.

· 6.3 Méthodes et matériel de confinement et de nettoyage:

Recueillir les liquides à l'aide d'un produit absorbant (sable, kieselguhr, neutralisant d'acide, liant universel, sciure).

Evacuer les matériaux contaminés en tant que déchets conformément au point 13.

Assurer une aération suffisante.

· 6.4 Référence à d'autres rubriques

Afin d'obtenir des informations pour une manipulation sûre, consulter le chapitre 7.

Afin d'obtenir des informations sur les équipements de protection personnels, consulter le chapitre 8.

Afin d'obtenir des informations sur l'élimination, consulter le chapitre 13.

RUBRIQUE 7: Manipulation et stockage

· 7.1 Précautions à prendre pour une manipulation sans danger

Veiller à une bonne ventilation/aspiration du poste de travail.

Eviter la formation d'aérosols.

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- **Préventions des incendies et des explosions:**
Tenir à l'abri des sources d'inflammation - ne pas fumer.
Tenir à l'abri de la chaleur.
Prendre des mesures contre les charges électrostatiques.
- **7.2 Conditions d'un stockage sûr, y compris d'éventuelles incompatibilités**
- **Stockage:**
- **Exigences concernant les lieux et conteneurs de stockage:** Stocker dans un endroit frais.
- **Indications concernant le stockage commun:** Pas nécessaire.
- **Autres indications sur les conditions de stockage:**
Tenir les emballages hermétiquement fermés.
Stocker au frais et au sec dans des fûts bien fermés.
Protéger de la forte chaleur et du rayonnement direct du soleil.
- **7.3 Utilisation(s) finale(s) particulière(s)** Pas d'autres informations importantes disponibles.

RUBRIQUE 8: Contrôles de l'exposition/protection individuelle

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

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

109-99-9 tétrahydrofurane

VLEP	Valeur momentanée: 300 mg/m ³ , 100 ppm Valeur à long terme: 150 mg/m ³ , 50 ppm C2, risque de pénétration percutanée
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- **Remarques supplémentaires:**
Le présent document s'appuie sur les listes en vigueur au moment de son élaboration.
- **8.2 Contrôles de l'exposition**
- **Équipement 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.
Éviter tout contact avec les yeux.
- **Protection respiratoire:**
En cas d'exposition faible ou de courte durée, utiliser un filtre respiratoire; en cas d'exposition intense ou durable, utiliser un appareil de respiration indépendant de l'air ambiant.
- **Protection des mains:**



Gants de protection

- Le matériau des gants doit être imperméable et résistant au produit / à la substance / à la préparation.
À cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.
Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.
- **Matériau des gants**
Le choix de gants appropriés dépend non seulement du matériau, mais aussi d'autres critères de qualité qui peuvent varier d'un fabricant à l'autre. Puisque le produit représente une préparation composée de plusieurs substances, la résistance des matériaux des gants ne peut pas être calculée à l'avance et doit, alors, être contrôlée avant l'utilisation.

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- **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:	Ambré
· Odeur:	Genre éther
· Seuil olfactif:	Non déterminé.
· valeur du pH:	Non déterminé.
· Changement d'état	
Point de fusion/point de congélation:	Non déterminé.
Point initial d'ébullition et intervalle d'ébullition:	66 °C
· Point d'éclair	-14 °C
· Inflammabilité (solide, gaz):	Facilement inflammable.
· Température d'inflammation:	230 °C
· Température de décomposition:	Non déterminé.
· Température d'auto-inflammabilité:	Le produit ne s'enflamme pas spontanément.
· Propriétés explosives:	Le produit n'est pas explosif; toutefois, des mélanges explosifs vapeur-air peuvent se former.
· Limites d'explosion:	
Inférieure:	1,8 Vol %
Supérieure:	11,8 Vol %
· Pression de vapeur à 15 °C:	193,3 hPa
· Densité à 20 °C:	0,9 g/cm ³
· Densité relative	Non déterminé.
· Densité de vapeur:	Non déterminé.
· Taux d'évaporation:	Non déterminé.
· Solubilité dans/miscibilité avec l'eau:	Entièrement miscible
· Coefficient de partage: n-octanol/eau:	Non déterminé.
· Viscosité:	
Dynamique:	Non déterminé.
Cinématique:	Non déterminé.
· Teneur en solvants:	
Solvants organiques:	88,3 %

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VOC (CE)	88,25 %
Teneur en substances solides:	11,8 %
· 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** Compte tenu des données disponibles, les critères de classification ne sont pas remplis.

· **Valeurs LD/LC50 déterminantes pour la classification:**

109-99-9 tétrahydrofurane

Oral	LD50	2.500 mg/kg (rat)
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- **Effet primaire d'irritation:**
- **Corrosion cutanée/irritation cutanée**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **Lésions oculaires graves/irritation oculaire**
Provoque de graves lésions des yeux.
- **Sensibilisation respiratoire ou cutanée**
Peut provoquer des symptômes allergiques ou d'asthme ou des difficultés respiratoires par inhalation.
Peut provoquer une allergie cutanée.
- **Indications toxicologiques complémentaires:**
- **Effets CMR (cancérogène, mutagène et toxique pour la reproduction)**
- **Mutagénicité sur les cellules germinales**
Compte tenu des données disponibles, les critères de classification ne sont pas remplis.
- **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.

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- **12.3 Potentiel de bioaccumulation** Pas d'autres informations importantes disponibles.
- **12.4 Mobilité dans le sol** Pas d'autres informations importantes disponibles.
- **Autres indications écologiques:**
- **Indications générales:**
Catégorie de pollution des eaux 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.
- **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.
- **Produit de nettoyage recommandé:** Eau, éventuellement avec des produits de nettoyage

RUBRIQUE 14: Informations relatives au transport

- | | |
|---|---|
| <ul style="list-style-type: none"> · 14.1 Numéro ONU · ADR, IMDG, IATA | <p style="text-align: right;">UN1133</p> |
| <ul style="list-style-type: none"> · 14.2 Désignation officielle de transport de l'ONU · ADR · IMDG, IATA | <p style="text-align: right;">1133 ADHÉSIFS
ADHESIVES</p> |
| <ul style="list-style-type: none"> · 14.3 Classe(s) de danger pour le transport · ADR, IMDG, IATA | <div style="text-align: center;">  </div> <p style="text-align: right;">3 Liquides inflammables.
3</p> |
| <ul style="list-style-type: none"> · 14.4 Groupe d'emballage · ADR, IMDG, IATA | <p style="text-align: right;">II</p> |
| <ul style="list-style-type: none"> · 14.5 Dangers pour l'environnement: | <p style="text-align: right;">Non applicable.</p> |
| <ul style="list-style-type: none"> · 14.6 Précautions particulières à prendre par l'utilisateur · Numéro d'identification du danger (Indice Kemler): · No EMS: · Stowage Category | <p style="text-align: right;">Attention: Liquides inflammables.
33
F-E,S-D
B</p> |
| <ul style="list-style-type: none"> · 14.7 Transport en vrac conformément à l'annexe II de la convention Marpol et au recueil IBC | <p style="text-align: right;">Non applicable.</p> |

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· Indications complémentaires de transport:

· ADR

· Quantités limitées (LQ)

5L

· Quantités exceptées (EQ)

Code: E2

Quantité maximale nette par emballage intérieur: 30 ml
Quantité maximale nette par emballage extérieur: 500 ml

· Catégorie de transport

2

· Code de restriction en tunnels

D/E

· IMDG

· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E2

Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

· "Règlement type" de l'ONU:

UN 1133 ADHÉSIFS, 3, II

RUBRIQUE 15: Informations relatives à la réglementation

· **15.1 Réglementations/législation particulières à la substance ou au mélange en matière de sécurité, de santé et d'environnement**

· Directive 2012/18/UE

· Substances dangereuses désignées - ANNEXE I Aucun des composants n'est compris.

· Catégorie SEVESO P5c LIQUIDES INFLAMMABLES

· Quantité seuil (tonnes) pour l'application des exigences relatives au seuil bas 5.000 t

· Quantité seuil (tonnes) pour l'application des exigences relatives au seuil haut 50.000 t

· RÈGLEMENT (CE) N° 1907/2006 ANNEXE XVII Conditions de limitation: 3

· Directive 2011/65/UE relative à la limitation de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques – Annexe II

Aucun des composants n'est compris.

· RÈGLEMENT (UE) 2019/1148

· Annexe I - PRÉCURSEURS D'EXPLOSIFS FAISANT L'OBJET DE RESTRICTIONS (Valeur limite maximale aux fins de l'octroi d'une licence en vertu de l'article 5, paragraphe 3)

Aucun des composants n'est compris.

· Annexe II - PRÉCURSEURS D'EXPLOSIFS DEVANT FAIRE L'OBJET D'UN SIGNALEMENT

Aucun des composants n'est compris.

· Règlement (CE) n° 273/2004 relatif aux précurseurs de drogues

Aucun des composants n'est compris.

· Règlement (CE) n° 111/2005 fixant des règles pour la surveillance du commerce des précurseurs des drogues entre la Communauté et les pays tiers

Aucun des composants n'est compris.

· **15.2 Évaluation de la sécurité chimique:** Une évaluation de la sécurité chimique n'a pas été réalisée.

RUBRIQUE 16: Autres informations

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

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· Phrases importantes*H225 Liquide et vapeurs très inflammables.**H317 Peut provoquer une allergie cutanée.**H318 Provoque de graves lésions des yeux.**H319 Provoque une sévère irritation des yeux.**H334 Peut provoquer des symptômes allergiques ou d'asthme ou des difficultés respiratoires par inhalation.**H335 Peut irriter les voies respiratoires.**H351 Susceptible de provoquer le cancer.***· Acronymes et abréviations:***ADR: Accord relatif au transport international des marchandises dangereuses par route**IMDG: International Maritime Code for Dangerous Goods**IATA: International Air Transport Association**GHS: Globally Harmonised System of Classification and Labelling of Chemicals**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**VOC: Volatile Organic Compounds (USA, EU)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**Flam. Liq. 2: Liquides inflammables – Catégorie 2**Eye Dam. 1: Lésions oculaires graves/irritation oculaire – Catégorie 1**Eye Irrit. 2: Lésions oculaires graves/irritation oculaire – Catégorie 2**Resp. Sens. 1: Sensibilisation respiratoire – Catégorie 1**Skin Sens. 1: Sensibilisation cutanée – Catégorie 1**Carc. 2: Cancérogénicité – Catégorie 2**STOT SE 3: Toxicité spécifique pour certains organes cibles (exposition unique) – Catégorie 3*

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

- **1.1 Produktidentifikator**
- **Handelsname:** M-BOND CURING AGENT 600
- **Artikelnummer:** 50410-20B
- **UFI:** 4EC3-N02S-G00C-656U
- **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**
Keine weiteren relevanten Informationen verfügbar.
- **Verwendung des Stoffes / des Gemisches** Laborchemikalien
- **1.3 Einzelheiten zum Lieferanten, der das Sicherheitsdatenblatt bereitstellt**
- **Hersteller/Lieferant:**
Electron Microscopy Sciences
1560 Industry Road
USA-Hatfield, PA 19440
Tel: 215-412-8400 Fax: 215-412-8450
email: sgkcck@aol.com
www.emsdiasum.com

Science Services GmbH
Unterhachinger Str. 75
81737 München Germany

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

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

ABSCHNITT 2: Mögliche Gefahren

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



GHS02 Flamme

Flam. Liq. 2 H225 Flüssigkeit und Dampf leicht entzündbar.



GHS08 Gesundheitsgefahr

Resp. Sens. 1 H334 Kann bei Einatmen Allergie, asthmaartige Symptome oder Atembeschwerden verursachen.

Carc. 2 H351 Kann vermutlich Krebs erzeugen.



GHS05 Ätzwirkung

Eye Dam. 1 H318 Verursacht schwere Augenschäden.

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GHS07

Skin Sens. 1 H317 Kann allergische Hautreaktionen verursachen.

STOT SE 3 H335 Kann die Atemwege reizen.

· 2.2 Kennzeichnungselemente

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

Das Produkt ist gemäß CLP-Verordnung eingestuft und gekennzeichnet.

· Gefahrenpiktogramme



GHS02

GHS05

GHS07

GHS08

· Signalwort Gefahr

· Gefahrbestimmende Komponenten zur Etikettierung:

Tetrahydrofuran

Benzol-1,2:4,5-tetracarbonsäuredianhydrid

· Gefahrenhinweise

H225 Flüssigkeit und Dampf leicht entzündbar.

H318 Verursacht schwere Augenschäden.

H334 Kann bei Einatmen Allergie, asthmaartige Symptome oder Atembeschwerden verursachen.

H317 Kann allergische Hautreaktionen verursachen.

H351 Kann vermutlich Krebs erzeugen.

H335 Kann die Atemwege reizen.

· Sicherheitshinweise

P303+P361+P353 BEI BERÜHRUNG MIT DER HAUT (oder dem Haar): Alle kontaminierten Kleidungsstücke sofort ausziehen. Haut mit Wasser abwaschen [oder duschen].

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

P310 Sofort GIFTINFORMATIONSZENTRUM/Arzt anrufen.

P321 Besondere Behandlung (siehe auf diesem Kennzeichnungsetikett).

P362+P364 Kontaminierte Kleidung ausziehen und vor erneutem Tragen waschen.

P405 Unter Verschluss aufbewahren.

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

· 2.3 Sonstige Gefahren

· Ergebnisse der PBT- und vPvB-Beurteilung

· **PBT:** Nicht anwendbar.· **vPvB:** Nicht anwendbar.

ABSCHNITT 3: Zusammensetzung/Angaben zu Bestandteilen

· 3.2 Chemische Charakterisierung: Gemische

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

· Gefährliche Inhaltsstoffe:

CAS: 109-99-9	Tetrahydrofuran	>50-≤100%
EINECS: 203-726-8		

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CAS: 89-32-7	Benzol-1,2:4,5-tetracarbonsäuredianhydrid	>2,5-≤10%
EINECS: 201-898-9	⚠ Resp. Sens. 1, H334; ⚠ Eye Dam. 1, H318; ⚠ Skin Sens. 1, H317	

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

ABSCHNITT 4: Erste-Hilfe-Maßnahmen

· 4.1 Beschreibung der Erste-Hilfe-Maßnahmen

· **Allgemeine Hinweise:**

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

· **Nach Einatmen:**

Reichlich Frischluftzufuhr und sicherheitshalber Arzt aufsuchen.

Bei Bewusstlosigkeit Lagerung und Transport in stabiler Seitenlage.

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

· **Nach Augenkontakt:**

Augen 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

Schutzausrüstung tragen. Ungeschützte Personen fernhalten.

· 6.2 Umweltschutzmaßnahmen:

Mit viel Wasser verdünnen.

Nicht in die Kanalisation/Oberflächenwasser/Grundwasser gelangen lassen.

· 6.3 Methoden und Material für Rückhaltung und Reinigung:

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

Kontaminiertes Material als Abfall nach Abschnitt 13 entsorgen.

Für ausreichende Lüftung sorgen.

· 6.4 Verweis auf andere Abschnitte

Informationen zur sicheren Handhabung siehe Abschnitt 7.

Informationen zur persönlichen Schutzausrüstung siehe Abschnitt 8.

Informationen zur Entsorgung siehe Abschnitt 13.

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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:**
Zündquellen fernhalten - nicht rauchen.
Vor Hitze schützen.
Maßnahmen gegen elektrostatische Aufladung treffen.
- **7.2 Bedingungen zur sicheren Lagerung unter Berücksichtigung von Unverträglichkeiten**
- **Lagerung:**
- **Anforderung an Lagerräume und Behälter:** An einem kühlen Ort lagern.
- **Zusammenlagerungshinweise:** Nicht erforderlich.
- **Weitere Angaben zu den Lagerbedingungen:**
Behälter dicht geschlossen halten.
In gut verschlossenen Gebinden kühl und trocken lagern.
Vor Hitze und direkter Sonnenbestrahlung schützen.
- **Lagerklasse:**
- **Klassifizierung nach Betriebssicherheitsverordnung (BetrSichV):** Entzündbare Flüssigkeiten
- **7.3 Spezifische Endanwendungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

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

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

109-99-9 Tetrahydrofuran

AGW	Langzeitwert: 150 mg/m ³ , 50 ml/m ³ 2(I);DFG, EU, H, Y
-----	--

- **Bestandteile mit biologischen Grenzwerten:**

109-99-9 Tetrahydrofuran

BGW	2 mg/l Untersuchungsmaterial: Urin Probennahmezeitpunkt: Expositionsende bzw. Schichtende Parameter: Tetrahydrofuran
-----	---

- **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 den Augen vermeiden.

- **Atemschutz:**

Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. längerer Exposition umluftunabhängiges Atemschutzgerät verwenden.

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· Handschutz:


Schutzhandschuhe

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

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

· Handschuhmaterial

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

· Durchdringungszeit des Handschuhmaterials

Die genaue Durchbruchzeit ist beim Schutzhandschuhhersteller zu erfahren und einzuhalten.

· Augenschutz:


Dichtschließende Schutzbrille

ABSCHNITT 9: Physikalische und chemische Eigenschaften

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

Form:	Flüssigkeit
Farbe:	Bernsteinfarben
Geruch:	Etherartig
Geruchsschwelle:	Nicht bestimmt.

· pH-Wert: Nicht bestimmt.

· Zustandsänderung

Schmelzpunkt/Gefrierpunkt:	Nicht bestimmt.
Siedebeginn und Siedebereich:	66 °C

· Flammpunkt: -14 °C

· Entzündbarkeit (fest, gasförmig): Leichtentzündlich.

· Zündtemperatur: 230 °C

· Zersetzungstemperatur: Nicht bestimmt.

· Selbstentzündungstemperatur: Das Produkt ist nicht selbstentzündlich.

· Explosive Eigenschaften: Das Produkt ist nicht explosionsgefährlich, jedoch ist die Bildung explosionsgefährlicher Dampf-/Luftgemische möglich.

· Explosionsgrenzen:

Untere:	1,8 Vol %
Obere:	11,8 Vol %

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· Dampfdruck bei 15 °C:	193,3 hPa
· Dichte bei 20 °C:	0,9 g/cm ³
· Relative Dichte	Nicht bestimmt.
· Dampfdichte	Nicht bestimmt.
· Verdampfungsgeschwindigkeit	Nicht bestimmt.
· Löslichkeit in / Mischbarkeit mit Wasser:	Vollständig mischbar.
· Verteilungskoeffizient: n-Octanol/Wasser:	Nicht bestimmt.
· Viskosität:	
Dynamisch:	Nicht bestimmt.
Kinematisch:	Nicht bestimmt.
· Lösemittelgehalt:	
Organische Lösemittel:	88,3 %
VOC (EU)	88,25 %
· Festkörpergehalt:	11,8 %
· 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 Mögliche gefährliche Reaktionen** Keine gefährlichen Reaktionen bekannt.
- **10.4 Zu vermeidende Bedingungen** Keine weiteren relevanten Informationen verfügbar.
- **10.5 Unverträgliche Materialien:** Keine weiteren relevanten Informationen verfügbar.
- **10.6 Gefährliche Zersetzungsprodukte:** Keine gefährlichen Zersetzungsprodukte bekannt.

ABSCHNITT 11: Toxikologische Angaben

- **11.1 Angaben zu toxikologischen Wirkungen**
- **Akute Toxizität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

· Einstufungsrelevante LD/LC50-Werte:		
109-99-9 Tetrahydrofuran		
Oral	LD50	2.500 mg/kg (rat)

- **Primäre Reizwirkung:**
- **Ätz-/Reizwirkung auf die Haut** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.
- **Schwere Augenschädigung/-reizung**
Verursacht schwere Augenschäden.
- **Sensibilisierung der Atemwege/Haut**
Kann bei Einatmen Allergie, asthmaartige Symptome oder Atembeschwerden verursachen.
Kann allergische Hautreaktionen verursachen.
- **Zusätzliche toxikologische Hinweise:**
- **CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)**
- **Keimzell-Mutagenität** Aufgrund der verfügbaren Daten sind die Einstufungskriterien nicht erfüllt.

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- **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.
- **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.
- **12.5 Ergebnisse der PBT- und vPvB-Beurteilung**
- **PBT:** Nicht anwendbar.
- **vPvB:** Nicht anwendbar.
- **12.6 Andere schädliche Wirkungen** Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 13: Hinweise zur Entsorgung

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

ABSCHNITT 14: Angaben zum Transport

- | | |
|--|--------------------------------------|
| <ul style="list-style-type: none"> · 14.1 UN-Nummer · ADR, IMDG, IATA | <p>UNI133</p> |
| <ul style="list-style-type: none"> · 14.2 Ordnungsgemäße UN-Versandbezeichnung · ADR · IMDG, IATA | <p>1133 KLEBSTOFFE
ADHESIVES</p> |
| <ul style="list-style-type: none"> · 14.3 Transportgefahrenklassen · ADR, IMDG, IATA | |
| <div style="text-align: center;">  </div> <ul style="list-style-type: none"> · Klasse | <p>3 Entzündbare flüssige Stoffe</p> |

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· Gefahrzettel	3
· 14.4 Verpackungsgruppe · ADR, IMDG, IATA	II
· 14.5 Umweltgefahren:	Nicht anwendbar.
· 14.6 Besondere Vorsichtsmaßnahmen für den Verwender · Nummer zur Kennzeichnung der Gefahr (Kemler-Zahl): · EMS-Nummer: · Stowage Category	Achtung: Entzündbare flüssige Stoffe 33 F-E,S-D B
· 14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens und gemäß IBC-Code	Nicht anwendbar.
· Transport/weitere Angaben:	
· ADR · Begrenzte Menge (LQ) · Freigestellte Mengen (EQ)	5L Code: E2 Höchste Nettomenge je Innenverpackung: 30 ml Höchste Nettomenge je Außenverpackung: 500 ml
· Beförderungskategorie · Tunnelbeschränkungscode	2 D/E
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1133 KLEBSTOFFE, 3, II

ABSCHNITT 15: Rechtsvorschriften

- **15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Stoff oder das Gemisch**
- **Richtlinie 2012/18/EU**
- **Namentlich aufgeführte gefährliche Stoffe - ANHANG I** Keiner der Inhaltsstoffe ist enthalten.
- **Seveso-Kategorie P5c ENTZÜNDBARE FLÜSSIGKEITEN**
- **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der unteren Klasse** 5.000 t
- **Mengenschwelle (in Tonnen) für die Anwendung in Betrieben der oberen Klasse** 50.000 t
- **VERORDNUNG (EG) Nr. 1907/2006 ANHANG XVII** Beschränkungsbedingungen: 3

· **Richtlinie 2011/65/EU zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten – Anhang II**

Keiner der Inhaltsstoffe ist enthalten.

· **VERORDNUNG (EU) 2019/1148**

· **Anhang I - BESCHRÄNKTE AUSGANGSSTOFFE FÜR EXPLOSIVSTOFFE (Oberer Konzentrationsgrenzwert für eine Genehmigung nach Artikel 5 Absatz 3)**

Keiner der Inhaltsstoffe ist enthalten.

· **Anhang II - MELDEPFLICHTIGE AUSGANGSSTOFFE FÜR EXPLOSIVSTOFFE**

Keiner der Inhaltsstoffe ist enthalten.

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· **Verordnung (EG) Nr. 273/2004 betreffend Drogenausgangsstoffe**

Keiner der Inhaltsstoffe ist enthalten.

· **Verordnung (EG) Nr. 111/2005 zur Festlegung von Vorschriften für die Überwachung des Handels mit Drogenaustauschstoffen zwischen der Gemeinschaft und Drittländern**

Keiner der Inhaltsstoffe ist enthalten.

· **Nationale Vorschriften:**

· **Technische Anleitung Luft:**

Klasse	Anteil in %
I	8,8
NK	88,3

· **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.

· **Relevante Sätze**

H225 Flüssigkeit und Dampf leicht entzündbar.

H317 Kann allergische Hautreaktionen verursachen.

H318 Verursacht schwere Augenschäden.

H319 Verursacht schwere Augenreizung.

H334 Kann bei Einatmen Allergie, asthmaartige Symptome oder Atembeschwerden verursachen.

H335 Kann die Atemwege reizen.

H351 Kann vermutlich Krebs erzeugen.

· **Abkürzungen und Akronyme:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Entzündbare Flüssigkeiten – Kategorie 2

Eye Dam. 1: Schwere Augenschädigung/Augenreizung – Kategorie 1

Eye Irrit. 2: Schwere Augenschädigung/Augenreizung – Kategorie 2

Resp. Sens. 1: Sensibilisierung der Atemwege – Kategorie 1

Skin Sens. 1: Sensibilisierung der Haut – Kategorie 1

Carc. 2: Karzinogenität – Kategorie 2

STOT SE 3: Spezifische Zielorgan-Toxizität (einmalige Exposition) – Kategorie 3

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

· **1.1 Identificatore del prodotto**

· **Denominazione commerciale:** M-BOND CURING AGENT 600

· **Articolo numero:** 50410-20B

· **UFI:** 4EC3-N02S-G00C-656U

· **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**



GHS02 fiamma

Flam. Liq. 2 H225 Liquido e vapori facilmente infiammabili.



GHS08 pericolo per la salute

Resp. Sens. 1 H334 Può provocare sintomi allergici o asmatici o difficoltà respiratorie se inalato.

Carc. 2 H351 Sospettato di provocare il cancro.



GHS05 corrosione

Eye Dam. 1 H318 Provoca gravi lesioni oculari.



GHS07

Skin Sens. 1 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**

Il prodotto è classificato ed etichettato conformemente al regolamento CLP.

Pittogrammi di pericolo

GHS02 GHS05 GHS07 GHS08

Avvertenza Pericolo**Componenti pericolosi che ne determinano l'etichettatura:**

tetraidrofurano

dianidride benzen-1,2:4,5-tetracarbossilica

Indicazioni di pericolo

H225 Liquido e vapori facilmente infiammabili.

H318 Provoca gravi lesioni oculari.

H334 Può provocare sintomi allergici o asmatici o difficoltà respiratorie se inalato.

H317 Può provocare una reazione allergica cutanea.

H351 Sospettato di provocare il cancro.

H335 Può irritare le vie respiratorie.

Consigli di prudenzaP303+P361+P353 **IN CASO DI CONTATTO CON LA PELLE (o con i capelli):** togliersi di dosso immediatamente tutti gli indumenti contaminati. Sciacquare la pelle [o fare una doccia].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.

P310 Contattare immediatamente un CENTRO ANTIVELENI/un medico.

P321 Trattamento specifico (vedere su questa etichetta).

P362+P364 Togliere tutti gli indumenti contaminati e lavarli prima di indossarli nuovamente.

P405 Conservare sotto chiave.

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

2.3 Altri pericoli**Risultati della valutazione PBT e vPvB****PBT:** Non applicabile.**vPvB:** Non applicabile.**SEZIONE 3: Composizione/informazioni sugli ingredienti****3.2 Caratteristiche chimiche: Miscela****Descrizione:** Miscela delle seguenti sostanze con additivi non pericolosi.**Sostanze pericolose:**

CAS: 109-99-9 EINECS: 203-726-8	tetraidrofurano Flam. Liq. 2, H225; Carc. 2, H351; Eye Irrit. 2, H319; STOT SE 3, H335	>50-≤100%
CAS: 89-32-7 EINECS: 201-898-9	dianidride benzen-1,2:4,5-tetracarbossilica Resp. Sens. 1, H334; Eye Dam. 1, H318; Skin Sens. 1, H317	>2,5-≤10%

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

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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.*

· **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**

Indossare equipaggiamento protettivo. Allontanare le persone non equipaggiate.

· **6.2 Precauzioni ambientali:**

Diluire abbondantemente con acqua.

Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.

· **6.3 Metodi e materiali per il contenimento e per la bonifica:**

Raccogliere il liquido con materiale assorbente (sabbia, tripoli, legante di acidi, legante universale, segatura).

Smaltimento del materiale contaminato conformemente al punto 13.

Provvedere ad una sufficiente areazione.

· **6.4 Riferimento ad altre sezioni**

Per informazioni relative ad un manipolazione sicura, vedere capitolo 7.

Per informazioni relative all'equipaggiamento protettivo ad uso personale vedere Capitolo 8.

Per informazioni relative allo smaltimento vedere Capitolo 13.

SEZIONE 7: Manipolazione e immagazzinamento

· **7.1 Precauzioni per la manipolazione sicura**

Accurata ventilazione/aspirazione nei luoghi di lavoro.

Evitare la formazione di aerosol.

· **Indicazioni in caso di incendio ed esplosione:**

Tenere lontano da fonti di calore, non fumare.

Proteggere dal calore.

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Adottare provvedimenti contro cariche elettrostatiche.

· **7.2 Condizioni per lo stoccaggio sicuro, comprese eventuali incompatibilità**

· **Stoccaggio:**

· **Requisiti dei magazzini e dei recipienti:** Conservare in ambiente fresco.

· **Indicazioni sullo stoccaggio misto:** Non necessario.

· **Ulteriori indicazioni relative alle condizioni di immagazzinamento:**

Mantenere i recipienti ermeticamente chiusi.

Conservare in luogo fresco e asciutto in fusti ben chiusi.

Proteggere dal calore e dai raggi diretti del sole.

· **7.3 Usi finali particolari** Non sono disponibili altre informazioni.

SEZIONE 8: Controllo dell'esposizione/protezione individuale

· **8.1 Parametri di controllo**

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

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

109-99-9 tetraidrofurano

TWA Valore a breve termine: 295 mg/m³, 100 ppm
Valore a lungo termine: 147 mg/m³, 50 ppm
cute, A3

VL Valore a breve termine: 300 mg/m³, 100 ppm
Valore a lungo termine: 150 mg/m³, 50 ppm
Cute

· **Componenti con valori limite biologici:**

109-99-9 tetraidrofurano

IBE 2 mg/l
Campioni: urine
Momento del prelievo: a fine turno
Indicatore biologico: tetraidrofurano

· **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 gli occhi.

· **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.

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· Materiale dei guanti

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

· Tempo di permeazione del materiale dei guanti

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

· Occhiali protettivi:

Occhiali protettivi a tenuta

SEZIONE 9: Proprietà fisiche e chimiche**· 9.1 Informazioni sulle proprietà fisiche e chimiche fondamentali****· Indicazioni generali****· Aspetto:**

Forma:	Liquido
Colore:	Ambra
Odore:	Simile all'etere
Soglia olfattiva:	Non definito.

· valori di pH: Non definito.

· Cambiamento di stato

Punto di fusione/punto di congelamento:	Non definito.
Punto di ebollizione iniziale e intervallo di ebollizione:	66 °C

· Punto di infiammabilità: -14 °C

· Infiammabilità (solidi, gas): Facilmente infiammabile.

· Temperatura di accensione: 230 °C

· Temperatura di decomposizione: Non definito.

· Temperatura di autoaccensione: Prodotto non autoinfiammabile.

· Proprietà esplosive: Prodotto non è esplosivo, è tuttavia possibile la formazione di miscele di vapori/aria esplosive.

· Limiti di infiammabilità:

Inferiore:	1,8 Vol %
Superiore:	11,8 Vol %

· Tensione di vapore a 15 °C: 193,3 hPa

· Densità a 20 °C:	0,9 g/cm ³
· Densità relativa	Non definito.
· Densità di vapore:	Non definito.
· Velocità di evaporazione	Non definito.

· Solubilità in/Miscibilità con acqua: Completamente miscibile.

· Coefficiente di ripartizione: n-ottanolo/acqua: Non definito.

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· Viscosità:	
Dinamica:	Non definito.
Cinematica:	Non definito.
· Tenore del solvente:	
Solventi organici:	88,3 %
VOC (CE)	88,25 %
Contenuto solido:	11,8 %
· 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** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.

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

109-99-9 tetraidrofurano

Orale | LD50 | 2.500 mg/kg (rat)

- **Irritabilità primaria:**
- **Corrosione/irritazione cutanea** Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **Lesioni oculari gravi/irritazioni oculari gravi**
Provoca gravi lesioni oculari.
- **Sensibilizzazione respiratoria o cutanea**
Può provocare sintomi allergici o asmatici o difficoltà respiratorie se inalato.
Può provocare una reazione allergica cutanea.
- **Ulteriori dati tossicologici:**
- **Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)**
- **Mutagenicità delle cellule germinali**
Basandosi sui dati disponibili i criteri di classificazione non sono soddisfatti.
- **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.

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SEZIONE 12: Informazioni ecologiche

- **12.1 Tossicità**
- **Tossicità acquatica:** Non sono disponibili altre informazioni.
- **12.2 Persistenza e degradabilità** Non sono disponibili altre informazioni.
- **12.3 Potenziale di bioaccumulo** Non sono disponibili altre informazioni.
- **12.4 Mobilità nel suolo** Non sono disponibili altre informazioni.
- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**
Pericolosità per le acque classe 1 (D) (Autoclassificazione): poco pericoloso
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature non diluito o in grandi quantità.
- **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.
- **Detergente consigliato:** Acqua eventualmente con l'aggiunta di detersivi.

SEZIONE 14: Informazioni sul trasporto

- | | |
|--|---|
| · 14.1 Numero ONU
· ADR, IMDG, IATA | UN1133 |
| · 14.2 Nome di spedizione dell'ONU
· ADR
· IMDG, IATA | 1133 ADESIVI
ADHESIVES |
| · 14.3 Classi di pericolo connesso al trasporto
· ADR, IMDG, IATA | |
|  | |
| · Classe
· Etichetta | 3 Liquidi infiammabili
3 |
| · 14.4 Gruppo di imballaggio
· ADR, IMDG, IATA | II |
| · 14.5 Pericoli per l'ambiente: | Non applicabile. |
| · 14.6 Precauzioni speciali per gli utilizzatori
· N° identificazione pericolo (Numero Kemler):
· Numero EMS: | Attenzione: Liquidi infiammabili
33
F-E,S-D |

(continua a pagina 8)

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

Stampato il: 12.08.2022

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Denominazione commerciale: M-BOND CURING AGENT 600

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· Stowage Category	B
· 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: E2 Quantità massima netta per imballaggio interno: 30 ml Quantità massima netta per imballaggio esterno: 500 ml
· Categoria di trasporto	2
· Codice di restrizione in galleria	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "Model Regulation":	UN 1133 ADESIVI, 3, II

SEZIONE 15: Informazioni sulla regolamentazione

- **15.1 Disposizioni legislative e regolamentari su salute, sicurezza e ambiente specifiche per la sostanza o la miscela**
- **Direttiva 2012/18/UE**
- **Sostanze pericolose specificate - ALLEGATO I** Nessuno dei componenti è contenuto.
- **Categoria Seveso P5c LIQUIDI INFIAMMABILI**
- **Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia inferiore 5.000 t**
- **Quantità limite (tonnellate) ai fini dell'applicazione dei requisiti di soglia superiore 50.000 t**
- **REGOLAMENTO (CE) n. 1907/2006 ALLEGATO XVII** Restrizioni: 3

· **Direttiva 2011/65/UE sulla restrizione dell'uso di determinate sostanze pericolose nelle apparecchiature elettriche ed elettroniche - Allegato II**

Nessuno dei componenti è contenuto.

· **REGOLAMENTO (UE) 2019/1148**

· **Allegato I - PRECURSORI DI ESPLOSIVI SOGGETTI A RESTRIZIONI (Valore limite superiore ai fini della concessione di licenze a norma dell'articolo 5, paragrafo 3)**

Nessuno dei componenti è contenuto.

· **Allegato II - PRECURSORI DI ESPLOSIVI SOGGETTI A SEGNALAZIONE**

Nessuno dei componenti è contenuto.

· **Regolamento (CE) n. 273/2004 relativo ai precursori di droghe**

Nessuno dei componenti è contenuto.

· **Regolamento (CE) N. 111/2005 recante norme per il controllo del commercio dei precursori di droghe tra la Comunità e i paesi terzi**

Nessuno dei componenti è contenuto.

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Scheda di dati di sicurezza
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· **Disposizioni nazionali:**

· **Istruzione tecnica aria:**

Classe	quota in %
NC	88,3

· **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.

· **Frasi rilevanti**

H225 Liquido e vapori facilmente infiammabili.

H317 Può provocare una reazione allergica cutanea.

H318 Provoca gravi lesioni oculari.

H319 Provoca grave irritazione oculare.

H334 Può provocare sintomi allergici o asmatici o difficoltà respiratorie se inalato.

H335 Può irritare le vie respiratorie.

H351 Sospettato di provocare il cancro.

· **Abbreviazioni e acronimi:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Liquidi infiammabili – Categoria 2

Eye Dam. 1: Gravi lesioni oculari/irritazione oculare – Categoria 1

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

Resp. Sens. 1: Sensibilizzazione delle vie respiratorie – Categoria 1

Skin Sens. 1: Sensibilizzazione della pelle – Categoria 1

Carc. 2: Cancerogenicità – Categoria 2

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

물질안전보건자료 GHS에 따라

인쇄일자: 2022.08.12

개정: 2022.08.12

1 화학제품과 회사에 관한 정보

- 제품 식별자
- 제품명: **M-BOND CURING AGENT 600**
- 상품번호: 50410-20B
- 해당 순물질이나 혼합물의 관련 하위용도 및 사용금지용도
- 제품의 권고 용도와 사용상의 제한: M-BOND CURING AGENT 600
- 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: sgkcck@aol.com
www.emsdiasum.com
- Samchang Commercial Co., Ltd.
Yeo Eui Do
PO Box 1110
Seoul, Korea
Tel: 82 2 703 3040
Fax: 82 2 717 3298

- Daedok Science, Co. Ltd.
34141 E10 Korea Advanced Institute of Science
Guseong-Dong, Yuseong-gu, Daejeon,
Korea
Phone: 82 42 710 2091
Fax: 82 42 367 0005
Website: www.labsmro.com
- 추가적인 정보 획득 가능: Product safety department
- 비상연락 전화번호:
ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

2 유해성·위험성

- 순물질 또는 혼합물의 분류



화염

인화성 액체 – 구분2

H225 고인화성 액체 및 증기



건강에 위험

호흡기 과민성 – 구분1

H334 흡입시 알레르기성 반응, 천식 또는 호흡 곤란 등을 일으킬 수 있음

발암성 – 구분2

H351 암을 일으킬 것으로 의심됨



부식

심한 눈 손상성/눈 자극성 – 구분1

H318 눈에 심한 손상을 일으킴

(2 쪽에 계속)

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(1 쪽부터 계속)



피부 과민성은 - 구분1 H317 알레르기성 피부 반응을 일으킬 수 있음
 특정표적장기 독성 - 1회 노출- 구분3 H335 호흡기 자극을 일으킬 수 있음

- 라벨표기 요소
- GHS 라벨 요소 본 제품은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
- GHS 그림문자



- 신호어 위험
- 상표상에 명확히 위험성이 표시된 성분: tetrahydrofuran, benzene-1,2:4,5-tetracarboxylic dianhydride
- 유해·위험문구
 - 고인화성 액체 및 증기
 - 눈에 심한 손상을 일으킴
 - 흡입시 알레르기성 반응, 천식 또는 호흡 곤란 등을 일으킬 수 있음
 - 알레르기성 피부 반응을 일으킬 수 있음
 - 암을 일으킬 것으로 의심됨
 - 호흡기 자극을 일으킬 수 있음
- 예방조치문구
 - 피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗거나 제거하십시오. 피부를 물로 씻으시오/샤워하십시오. 눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면 콘택트렌즈를 제거하십시오. 계속 씻으시오.
 - 즉시 독성물질센터/병원 연락 필요.
 - (라벨 참조) 처치를 하시오.
 - 오염된 의복은 벗고 다시 사용 전 세척하십시오.
 - 밀봉하여 저장하십시오.
 - (지방/지역/국가/국제 규정에 따라) 에 내용물/용기를 폐기하십시오.
- 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: 혼합물
- 설명: 무해한 첨가물이 함유된 아래에 열거된 물질로 만들어진 혼합물.

· 위험 요소:		
109-99-9	tetrahydrofuran ⚠ 인화성 액체 - 구분2, H225; ⚠ 발암성 - 구분2, H351; ⚠ 심한 눈 손상성/눈 자극성 - 구분2, H319; 특정표적장기 독성 - 1회 노출- 구분3, H335	>50-≤100%
89-32-7	benzene-1,2:4,5-tetracarboxylic dianhydride ⚠ 호흡기 과민성 - 구분1, H334; ⚠ 심한 눈 손상성/눈 자극성 - 구분1, H318; ⚠ 피부 과민성은 - 구분1, H317	>2.5-≤10%

KR

(3 쪽에 계속)

물질안전보건자료

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4 응급조치 요령

- 응급조치요령 내용
- 일반적 정보:
 - 중독 증상은 몇 시간이 지난 뒤에 발생할 수 있다. 따라서 사고가 발생한 후에 적어도 48 시간 동안은 의료진의 관찰을 받아야 한다.
- 흡입했을 때:
 - 신선한 공기를 쐬고 나서 반드시 의료진의 도움을 구한다.
 - 환자가 의식을 잃었을 경우에는 안전한 자세에서 환자를 운반한다.
- 피부에 접촉했을 때: 즉시 물과 비누로 씻고 잘 헹군다.
- 눈에 들어갔을 때: 흐르는 물에 눈을 몇 분 동안 씻어내고 나서, 의사와 상담한다.
- 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 석회가루 또는 물방사를 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 안전장비 착용하고, 무방비의 사람은 격리시킨다.
- 환경 관련 예방조치:
 - 많은 물로 희석시킨다.
 - 하수도망/해수면 위층/지하수로 도달하지 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 제7장을 참고하십시오.
 - 개인 보호 장비에 대한 정보는 제8장을 참고하십시오.
 - 쓰레기 처리에 대한 정보는 제13장을 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:
 - 발화 요소는 멀리 둔다-금연.
 - 열로부터 보호한다.

(4 쪽에 계속)

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정 전 기 의 충 전 으로부터 보호한다.

- 혼합위험성 등 안전 저장 조건
- 보관:
- 안전한 저장 방법: 차 가 운 장 소 에 보 관한다.
- 하나의 공동 보관 시설에 대한 보관 관련 정보: 필 요없음
- 보 관 조 건 에 관 한 추가적인 정보:
용기를새지않게밀폐한채보관한다.
밀폐된 용기속에서늘하고건조하게보관한다.
열이나직사광선으로부터보호한다.
- 구체적 최종 사용자 추가적인 정보가 존재하지 않습니다.

8 노출방지 및 개인보호구

- 첨단시설 디자인에 대한 추가정보: 더 이 상 의 자료는 없음. 항 목 7 을 참고하시 오.
- 통제 변수

· 화학물질의 노출기준, 생물학적 노출기준 등:

109-99-9 tetrahydrofuran

OELV (KR)	단기간의값: 100 ppm 장기간의값: 50 ppm 발암성 2, Skin
IOELV (EU)	단기간의값: 300 mg/m ³ , 100 ppm 장기간의값: 150 mg/m ³ , 50 ppm Skin
PEL (US)	장기간의값: 590 mg/m ³ , 200 ppm
REL (US)	단기간의값: 735 mg/m ³ , 250 ppm 장기간의값: 590 mg/m ³ , 200 ppm
TLV (US)	단기간의값: 100 ppm 장기간의값: 50 ppm Skin, A3, BEI

· 생물학적 허용값을 갖는 원료:

109-99-9 tetrahydrofuran

BEI (US)	2 mg/L Medium: urine Time: end of shift Parameter: Tetrahydrofuran
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· 추 가 정 보: 제 조 할 당시에 유 효 한 목 록을 기초로 사용했다.

- 노출 통제
- 개인 보호구
- 일반적보호조치및위생조치:
식 료 품, 음 료 수와 사 료 로부 터 멀 리 멀 어 뜨 려 놓 는 다.
더 러 워 지 거 나 음 료 수 가 물 은 옷 은 즉 시 탈의한다.
휴 식 전 이 나 작 업 이 끝 날 때 마다 손 을 씻 는 다.
눈 과 의 접 촉 을 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.

(5 쪽에계속)

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(4 쪽부터계속)

· 손 보호:



보호용 장갑

장갑재질은제품 / 원료 / 조제를투과시키지않아야하고, 내구성이있어야한다.
테스트를하지 않았기 때문에 제품 / 조제 / 화학 혼합 물에 적합한 장갑재질에 대한 추천이 없다.
투과 시간, 침투율과저하를고려해서 장갑 재료를 선택한다.

· 장갑의재료

적합한장갑의선택은재질차이뿐아니라품질기준의차이도고려하여이루어져야하고제조업종에따라서도다르게선정되어야한다 .
제품은다양한재료로부터의조제로이루어지는것이기때문에 , 장갑재질의안정성은사전에예측되어질수있는것이아니고 ,
반드시사용전에 (그안전성이) 체크되어야한다.

· 장갑 재료의 투과 시간 정확한관통시간은보호장갑제조자에의하여인지되고, 준수되어야한다.

· 눈 보호:



꼭조이는보안경

9 물리화학적 특성

· 기본 물리 및 화학적 특성에 대한 정보

· 일반정보

· 외형

물리적 상태: 액체
색: 호박색
냄새: 에테르종류의
후각역치: 알맞지않다.

· pH: 알맞지않다.

· 상태변화

녹는점/어는점: 맞지않는
초기 끓는점과 끓는점 범위: 66 °C

· 인화점: -14 °C

· 인화성(고체, 기체): 쉽게발화하는

· 점화온도: 230 °C

· 분해 온도: 알맞지않다.

· 자기점화: 이제품은자연발화성이없다.

· 폭발위험: 이제품은폭발위험성이없지만 ,
폭발가능성이있는증기화합물/공기화합물의형성가능성이있다.

· 인화 또는 폭발 범위의 상한/하한

아래로: 1.8 Vol %
위로: 11.8 Vol %

· 증기압 의경우 15 °C: 193.3 hPa

· 밀도 의경우 20 °C: 0.9 g/cm³

· 비중: 알맞지않다.

· 증기밀도: 알맞지않다.

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· 증발 속도:	알맞지않다.
· 용해도:	
물:	완전히혼합할수있는
· n 옥탄올/물 분배계수:	알맞지않다.
· 점도:	
역학성:	알맞지않다.
동점성:	알맞지않다.
· 용매내용물	
유기용매:	88.3 %
VOC (EU)	88.25 %
· 고체의 함량:	11.8 %
· 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:

· LD/LC50-수치에 따른 분류:
109-99-9 tetrahydrofuran
구간의 LD50 2,500 mg/kg (rat)

- 일차적 자극 효과:
- 피부 부식성 또는 자극성: 무자극
- 심한 눈 손상 또는 자극성: 심각한안구상처의위험이있는강한자극
- 감각화:
 - 호흡을통한감각화가가능성이있다.
 - 피부접촉을통하여감각화가가능성이있다.
- 추 가 적 인 독성 에 관 한 정 보:
 - 이제품은유럽공동체의공동분류원칙의합법적인절차에근거하여최근에발효된원고에서아래위험들의사전준비에대하여제시하고있다.
 - 건강에해로운
 - 자극적인
- 다음 종류의 잠재적인 효과에 대한 정보
- CMR-효과 (암 유발, 돌연변이성 그리고 생식 독성)
 - 발암성 – 구분2

KR

(7 쪽에계속)

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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.
- 추가적인 생태학 정보:
- 일반 특징:
 - 수질오염등급 1 (자체등급분류): 약하게수질오염이된
 - 희석시키지않은채대량으로지하수나, 하천으로그리고하수도망에도달하지않게한다.
- 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.
- 추천 세정제: 경우에따라서세제가첨가된물

14 운송에 필요한 정보

· 유엔 번호 · ADR, IMDG, IATA	UN1133
· UN 적정 선적명 · ADR · IMDG, IATA	1133 ADHESIVES ADHESIVES
· 교통 위험 클래스 · ADR, IMDG, IATA <div style="text-align: center;">  </div>	3 발화성용액 3
· 용기등급 · ADR, IMDG, IATA	II
· 환경적 유해물질:	해당사항 없음.
· 이용자 특별 예방조치 · 위험 코드: · EMS-번호:	경고: 발화성용액 33 F-E,S-D

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· Stowage Category	B
· 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: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· 운송 구분	2
· 터널 제한 코드	D/E
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· UN "모범 규제":	UN 1133 ADHESIVES, 3, II

15 법적 규제현황

· 산업안전보건법에 의한 규제:

· 제조 등 금지물질:

어떠한내용물도목록화되어있지않다

· 허가대상물질:

어떠한내용물도목록화되어있지않다

· 관리대상유해물질:

109-99-9 tetrahydrofuran

· 작업환경측정 대상 유해인자

109-99-9 tetrahydrofuran

1A95

· 특수건강진단 대상 유해인자

109-99-9 tetrahydrofuran

1A87

· 해당 순물질 또는 혼합물에 대한 안전, 보건 및 환경 규제/법률 추가적인 정보가 존재하지 않습니다.

· Korean Existing Chemical Inventory

109-99-9 tetrahydrofuran

KE-33454

89-32-7 benzene-1,2:4,5-tetracarboxylic dianhydride

KE-02686

89-05-4 benzene-1,2,4,5-tetracarboxylic acid

KE-02640

· 화학물질관리법

· 사고대비물질

어떠한내용물도목록화되어있지않다

· 금지물질

어떠한내용물도목록화되어있지않다

· 제한물질

어떠한내용물도목록화되어있지않다

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· 유독물질

어떠한내용물도목록화되어있지않다

· 허가물질

어떠한내용물도목록화되어있지않다

· 위험물안전관리법 (위험물 및 지정수량) 제 4: 400 리터

· 등록 또는 신고 면제대상 화학물질

어떠한내용물도목록화되어있지않다

· ‘21년까지 등록하여야 할 암, 돌연변이, 생식능력 이상을 일으키거나 일으킬 우려가 있는 기존화학물질

어떠한내용물도목록화되어있지않다

· 중점관리물질(제2조 관련)

어떠한내용물도목록화되어있지않다

· **GHS 라벨 요소** 본 제품은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

· GHS 그림문자



GHS02

GHS05

GHS07

GHS08

· 신호어 위험

· 상표상에 명확히 위험성이 표시된 성분:

tetrahydrofuran
benzene-1,2:4,5-tetracarboxylic dianhydride

· 유해·위험문구

고인화성 액체 및 증기
눈에 심한 손상을 일으킴
흡입시 알레르기성 반응, 천식 또는 호흡 곤란 등을 일으킬 수 있음
알레르기성 피부 반응을 일으킬 수 있음
암을 일으킬 것으로 의심됨
호흡기 자극을 일으킬 수 있음

· 예방조치문구

피부(또는 머리카락)에 묻으면 오염된 모든 의복은 벗거나 제거하십시오. 피부를 물로 씻으시오/샤워하십시오.
눈에 묻으면 몇 분간 물로 조심해서 씻으시오. 가능하면 콘택트렌즈를 제거하십시오. 계속 씻으시오.
즉시 독성물질센터/병원 연락 필요.
(라벨 참조) 처치를 하시오.
오염된 의복은 벗고 다시 사용 전 세척하십시오.
밀봉하여 저장하십시오.
(지방/지역/국가/국제 규정에 따라) 에 내용물/용기를 폐기하십시오.

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

16 그 밖의 참고사항

이 보고서는 우리 지식에 대한 오늘날의 상태에 대하여 평가하고 있다
하지만 이 보고서는 생산 특성에 관한 보증은 기술하지 않았으며 계약적인 법률 관계에 기반을 두고 있지 않다

· 담당자:

· **최초 작성일자:** 2022.08.12
· **개정 횟수 및 최종 개정일자:** 1 / 2022.08.12
· **약어와 두문자어:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

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IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

KR

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 12.08.2022

Revisión: 12.08.2022

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

· 1.1 Identificador del producto

· **Nombre comercial:** M-BOND CURING AGENT 600

· **Número del artículo:** 50410-20B

· **UFI:** 4EC3-N02S-G00C-656U

· 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**



GHS02 llama

Flam. Liq. 2 H225 Líquido y vapores muy inflamables.



GHS08 peligro para la salud

Resp. Sens. 1 H334 Puede provocar síntomas de alergia o asma o dificultades respiratorias en caso de inhalación.

Carc. 2 H351 Se sospecha que provoca cáncer.



GHS05 corrosión

Eye Dam. 1 H318 Provoca lesiones oculares graves.

(se continua en página 2)

Ficha de datos de seguridad

según 1907/2006/CE, Artículo 31

fecha de impresión 12.08.2022

Revisión: 12.08.2022

Nombre comercial: **M-BOND CURING AGENT 600**

(se continua en página 1)



GHS07

Skin Sens. 1 H317 Puede provocar una reacción alérgica en la piel.

STOT SE 3 H335 Puede irritar las vías respiratorias.

· 2.2 Elementos de la etiqueta

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

El producto se ha clasificado y etiquetado de conformidad con el reglamento CLP.

· Pictogramas de peligro



GHS02

GHS05

GHS07

GHS08

· Palabra de advertencia Peligro

· Componentes peligrosos a indicar en el etiquetaje:

tetrahidrofurano

dianhidrido benceno-1,2:4,5-tetracarboxilico

· Indicaciones de peligro

H225 Líquido y vapores muy inflamables.

H318 Provoca lesiones oculares graves.

H334 Puede provocar síntomas de alergia o asma o dificultades respiratorias en caso de inhalación.

H317 Puede provocar una reacción alérgica en la piel.

H351 Se sospecha que provoca cáncer.

H335 Puede irritar las vías respiratorias.

· Consejos de prudencia

P303+P361+P353 EN CASO DE CONTACTO CON LA PIEL (o el pelo): Quitar inmediatamente toda la ropa contaminada. Enjuagar la piel con agua [o ducharse].

P305+P351+P338 EN CASO DE CONTACTO CON LOS OJOS: Enjuagar con agua cuidadosamente durante varios minutos. Quitar las lentes de contacto cuando estén presentes y pueda hacerse con facilidad. Proseguir con el lavado.

P310 Llamar inmediatamente a un CENTRO DE TOXICOLOGÍA/médico.

P321 Se necesita un tratamiento específico (ver en esta etiqueta).

P362+P364 Quitar las prendas contaminadas y lavarlas antes de volver a usarlas.

P405 Guardar bajo llave.

P501 Eliminar el contenido o el recipiente conforme a la reglamentación local/regional/nacional/internacional.

· 2.3 Otros peligros

· Resultados de la valoración PBT y mPmB

· **PBT:** No aplicable.· **mPmB:** No aplicable.

SECCIÓN 3: Composición/información sobre los componentes

· 3.2 Caracterización química: Mezclas

· **Descripción:** Mezcla formada por las sustancias especificadas a continuación con adiciones no peligrosas.

· Componentes peligrosos:

CAS: 109-99-9	tetrahidrofurano	>50-≤100%
EINECS: 203-726-8	Flam. Liq. 2, H225; Carc. 2, H351; Eye Irrit. 2, H319; STOT SE 3, H335	

(se continua en página 3)

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CAS: 89-32-7	dianhidrido benceno-1,2:4,5-tetracarboxilico	>2,5-≤10%
EINECS: 201-898-9	⚠ Resp. Sens. 1, H334; ⚠ Eye Dam. 1, H318; ⚠ Skin Sens. 1, H317	

· **Indicaciones adicionales:** El texto de los posibles riesgos aquí indicados se puede consultar en el capítulo 16.

SECCIÓN 4: Primeros auxilios

· 4.1 Descripción de los primeros auxilios

· Instrucciones generales:

Los síntomas de intoxicación pueden presentarse después de muchas horas, por lo que se requiere una supervisión médica durante un mínimo de 48 horas después del accidente.

· En caso de inhalación del producto:

Suministrar suficiente aire fresco y, para mayor seguridad, consultar el médico.

Las personas desmayadas deben tenderse y transportarse de lado con la suficiente estabilidad.

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

· En caso de con los ojos:

Limpia 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

Llevar puesto equipo de protección. Mantener alejadas las personas sin protección.

· 6.2 Precauciones relativas al medio ambiente:

Diluir con mucha agua.

Evitar que penetre en la canalización /aguas de superficie /agua subterráneas.

· 6.3 Métodos y material de contención y de limpieza:

Quitar con material absorbente (arena, kieselgur, aglutinante de ácidos, aglutinante universal, aserrín).

Desechar el material contaminado como vertido según ítem 13.

Asegurar suficiente ventilación.

· 6.4 Referencia a otras secciones

Ver capítulo 7 para mayor información sobre una manipulación segura.

Ver capítulo 8 para mayor información sobre el equipo personal de protección.

Para mayor información sobre cómo desechar el producto, ver capítulo 13.

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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:**
Mantener alejadas las fuentes de encendido. No fumar.
Proteger del calor.
Tomar medidas contra las cargas electrostáticas.
- **7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades**
- **Almacenamiento:**
- **Exigencias con respecto al almacén y los recipientes:** Almacenar en un lugar fresco.
- **Normas en caso de un almacenamiento conjunto:** No es necesario.
- **Indicaciones adicionales sobre las condiciones de almacenamiento:**
Mantener el recipiente cerrado herméticamente.
Almacenarlo en envases bien cerrados en un lugar fresco y seco.
Proteger del calor y de la luz directa del sol.
- **7.3 Usos específicos finales** No existen más datos relevantes disponibles.

SECCIÓN 8: Controles de exposición/protección individual

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

- **Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:**

109-99-9 tetrahidrofurano

LEP	Valor de corta duración: 300 mg/m ³ , 100 ppm Valor de larga duración: 150 mg/m ³ , 50 ppm vía dérmica, VLI, VLB
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- **Componentes con valores límite biológicos:**

109-99-9 tetrahidrofurano

VLB	2 mg/l Muestra: orina Momento de Muestero: Final de la jornada laboral Indicador Biológico: Tetrahidrofurano
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- **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 los ojos.

- **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.

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· Protección de manos:



Guantes de protección

El material del guante deberá ser impermeable y resistente al producto / sustancia / preparado.

Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de sustancias químicas.

Selección del material de los guantes en función de los tiempos de rotura, grado de permeabilidad y degradación.

· Material de los guantes

La elección del guante adecuado no depende únicamente del material, sino también de otras características de calidad, que pueden variar de un fabricante a otro. Teniendo en cuenta que el producto está fabricado a partir de diferentes materiales, su calidad no puede ser evaluada de antemano, de modo que los guantes deberán ser controlados antes de su utilización.

· Tiempo de penetración del material de los guantes

El tiempo de resistencia a la penetración exacto deberá ser pedido al fabricante de los guantes. Este tiempo debe ser respetado.

· Protección de ojos:



Gafas de protección herméticas

SECCIÓN 9: Propiedades físicas y químicas

· 9.1 Información sobre propiedades físicas y químicas básicas

· Datos generales

· Aspecto:

Forma:

Líquido

Color:

Ámbar coloreado

· Olor:

Etéreo

· Umbral olfativo:

No determinado.

· valor pH:

No determinado.

· Cambio de estado

Punto de fusión/punto de congelación:

Indeterminado.

Punto inicial de ebullición e intervalo de ebullición:

66 °C

· Punto de inflamación:

-14 °C

· Inflamabilidad (sólido, gas):

Fácilmente inflamable.

· Temperatura de ignición:

230 °C

· Temperatura de descomposición:

No determinado.

· Temperatura de auto-inflamación:

El producto no es autoinflamable.

· Propiedades explosivas:

El producto no es explosivo; sin embargo, pueden formarse mezclas explosivas de vapor / aire.

· Límites de explosión:

Inferior:

1,8 Vol %

Superior:

11,8 Vol %

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· Presión de vapor a 15 °C:	193,3 hPa
· Densidad a 20 °C:	0,9 g/cm ³
· Densidad relativa	No determinado.
· Densidad de vapor	No determinado.
· Tasa de evaporación:	No determinado.
· Solubilidad en / miscibilidad con agua:	Completamente mezclable.
· Coefficiente de reparto: n-octanol/agua:	No determinado.
· Viscosidad:	
· Dinámica:	No determinado.
· Cinématica:	No determinado.
· Concentración del disolvente:	
· Disolventes orgánicos:	88,3 %
· VOC (CE)	88,25 %
· Contenido de cuerpos sólidos:	11,8 %
· 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** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

· **Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:**

109-99-9 tetrahidrofurano

Oral	LD50	2.500 mg/kg (rat)
------	------	-------------------

- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas** A la vista de los datos disponibles, no se cumplen los criterios de clasificación.
- **Lesiones o irritación ocular graves**
Provoca lesiones oculares graves.
- **Sensibilización respiratoria o cutánea**
Puede provocar síntomas de alergia o asma o dificultades respiratorias en caso de inhalación.
Puede provocar una reacción alérgica en la piel.
- **Indicaciones toxicológicas adicionales:**
- **Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)**
- **Mutagenicidad en células germinales**
A la vista de los datos disponibles, no se cumplen los criterios de clasificación.

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- **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.
- **Indicaciones medioambientales adicionales:**
- **Indicaciones generales:**
Nivel de riesgo para el agua 1 (autoclasiificación): 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.
- **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.
- **Producto de limpieza recomendado:** Agua, eventualmente añadiendo productos de limpieza.

SECCIÓN 14: Información relativa al transporte

- | | |
|---|------------------------|
| · 14.1 Número ONU | UN1133 |
| · ADR, IMDG, IATA | |
| · 14.2 Designación oficial de transporte de las Naciones Unidas | |
| · ADR | 1133 ADHESIVOS |
| · IMDG, IATA | ADHESIVES |
| · 14.3 Clase(s) de peligro para el transporte | |
| · ADR, IMDG, IATA | |
|  | |
| · Clase | 3 Líquidos inflamables |

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· Etiqueta	3
· 14.4 Grupo de embalaje · ADR, IMDG, IATA	II
· 14.5 Peligros para el medio ambiente:	No aplicable.
· 14.6 Precauciones particulares para los usuarios · Número de identificación de peligro (Número Kemler): · Número EMS: · Stowage Category	Atención: Líquidos inflamables 33 F-E,S-D B
· 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) · Cantidades exceptuadas (EQ)	5L Código: E2 Cantidad neta máxima por envase interior: 30 ml Cantidad neta máxima por embalaje exterior: 500 ml
· Categoría de transporte · Código de restricción del túnel	2 D/E
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
· "Reglamentación Modelo" de la UNECE:	UN 1133 ADHESIVOS, 3, II

SECCIÓN 15: Información reglamentaria

- **15.1 Reglamentación y legislación en materia de seguridad, salud y medio ambiente específicas para la sustancia o la mezcla**
- **Directiva 2012/18/UE**
- **Sustancias peligrosas nominadas - ANEXO I** ninguno de los componentes está incluido en una lista
- **Categoría Seveso P5c LÍQUIDOS INFLAMABLES**
- **Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel inferior** 5.000 t
- **Cantidad umbral (toneladas) a efectos de aplicación de los requisitos de nivel superior** 50.000 t
- **REGLAMENTO (CE) n° 1907/2006 ANEXO XVII** Restricciones: 3

- **Directiva 2011/65/UE sobre restricciones a la utilización de determinadas sustancias peligrosas en aparatos eléctricos y electrónicos - Anexo II**

ninguno de los componentes está incluido en una lista

- **REGLAMENTO (UE) 2019/1148**

- **Anexo I - PRECURSORES DE EXPLOSIVOS RESTRINGIDOS (Valor límite superior a efectos de la concesión de licencias con arreglo al artículo 5, apartado 3)**

ninguno de los componentes está incluido en una lista

- **Anexo II - PRECURSORES DE EXPLOSIVOS NOTIFICABLES**

ninguno de los componentes está incluido en una lista

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· **Reglamento (CE) no 273/2004 sobre precursores de drogas**

ninguno de los componentes está incluido en una lista

· **Reglamento (CE) N o 111/2005 por el que establecen normas para la vigilancia del comercio de precursores de drogas entre la Comunidad y terceros países**

ninguno de los componentes está incluido en una lista

· **15.2 Evaluación de la seguridad química:** Una evaluación de la seguridad química no se ha llevado a cabo.

SECCIÓN 16: Otra información

Los datos se fundan en el estado actual de nuestros conocimientos, pero no constituyen garantía alguna de cualidades del producto y no generan ninguna relación jurídica contractual.

· **Frases relevantes**

H225 Líquido y vapores muy inflamables.

H317 Puede provocar una reacción alérgica en la piel.

H318 Provoca lesiones oculares graves.

H319 Provoca irritación ocular grave.

H334 Puede provocar síntomas de alergia o asma o dificultades respiratorias en caso de inhalación.

H335 Puede irritar las vías respiratorias.

H351 Se sospecha que provoca cáncer.

· **Abreviaturas y acrónimos:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

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

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Flam. Liq. 2: Líquidos inflamables – Categoría 2

Eye Dam. 1: Lesiones oculares graves o irritación ocular – Categoría 1

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

Resp. Sens. 1: Sensibilización respiratoria – Categoría 1

Skin Sens. 1: Sensibilización cutánea – Categoría 1

Carc. 2: Carcinogenicidad – Categoría 2

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