1 Identification

· Product identifier
  · Trade name: M-BOND 610 CURING AGENT
  · Article number: 50410-30B
  · 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: sgkcek@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
  Flam. Liq. 2 H225 Highly flammable liquid and vapor.

  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.

  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 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
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Use explosion-proof electrical/ventilating/lighting/equipment.
Wear respiratory protection.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves / eye protection / face protection.
Wear protective gloves.
Wear eye protection / face protection.
Ground/bond container and receiving equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
IF ON SKIN (or hair): Remove/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).
If experiencing respiratory symptoms: Call a poison center/doctor.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Wash contaminated clothing before reuse.
IF exposed or concerned: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.
In case of fire: Use for extinction: CO2, powder or water spray.
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.
3 Composition/information on ingredients

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

<table>
<thead>
<tr>
<th>Dangerous components:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>109-99-9</td>
<td>tetrahydrofuran</td>
<td>50-100%</td>
</tr>
<tr>
<td>89-32-7</td>
<td>benzene-1,2:4,5-tetracarboxylic dianhydride</td>
<td>2.5-10%</td>
</tr>
</tbody>
</table>

4 First-aid measures

- Description of first aid measures
- 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: If symptoms persist consult 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.
- 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.
    Open and handle receptacle with care.
    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
    - PEL: Long-term value: 590 mg/m³, 200 ppm
    - REL: Short-term value: 735 mg/m³, 250 ppm
    - TLV: Short-term value: 295 mg/m³, 100 ppm
      Long-term value: 147 mg/m³, 50 ppm
    - Skin
Ingredients with biological limit values:

<table>
<thead>
<tr>
<th>109-99-9 tetrahydrofuran</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEI 2 mg/L</td>
</tr>
<tr>
<td>Medium: urine</td>
</tr>
<tr>
<td>Time: end of shift</td>
</tr>
<tr>
<td>Parameter: Tetrahydrofuran</td>
</tr>
</tbody>
</table>

Additional information: The lists that were valid during the creation were used as basis.

Exposure controls

Personal protective equipment:

General protective and hygienic measures:

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 vary 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
Odour threshold: Not determined.

pH-value: Not determined.
Trade name: M-BOND 610 CURING AGENT

- **Change in condition**
  - Melting point/Melting range: Undetermined.
  - Boiling point/Boiling range: 66 °C (151 °F)

- **Flash point**: -14 °C (7 °F)

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

- **Ignition temperature**: 230 °C (446 °F)

- **Decomposition temperature**: Not determined.

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

- **Danger of explosion**: May form explosive peroxides.

- **Explosion limits**:
  - Lower: 1.5 Vol %
  - Upper: 12.0 Vol %

- **Vapor pressure at 20 °C (68 °F)**: 200 hPa (150 mm Hg)

- **Density at 20 °C (68 °F)**: 0.98251 g/cm³ (8.199 lbs/gal)

- **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 content: 88.3 %
  - 867.1 g/l / 7.24 lb/gl

- **Solids content**: 11.8 %

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

### 10 Stability and reactivity

- **Reactivity**

- **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:

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>tetrahydrofuran</td>
<td>2500  mg/kg (rat)</td>
</tr>
<tr>
<td>benzene-1,2:4,5-tetracarboxylic dianhydride</td>
<td>2250 mg/kg (rat)</td>
</tr>
</tbody>
</table>

· 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)
    None of the ingredients is listed.
  · 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.
  · 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, ADR, IMDG, IATA: UN1993

- UN proper shipping name
  - DOT: Flammable liquids, n.o.s. mixture
  - ADR: 1993 Flammable liquids, n.o.s. mixture
  - IMDG, IATA: FLAMMABLE LIQUID, N.O.S. mixture

- Transport hazard class(es)
  - DOT:
    - Class: 3 Flammable liquids
    - Label: 3

  - ADR, IMDG, IATA:
    - Class: 3 Flammable liquids
    - Label: 3

- Packing group
  - DOT, ADR, IMDG, IATA: II

- Environmental hazards:
  - Marine pollutant: No

- Special precautions for user
  - Warning: Flammable liquids
  - Danger code (Kemler): 33
  - EMS Number: F-E,S-D

- 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
### Trade name: M-BOND 610 CURING AGENT

<table>
<thead>
<tr>
<th>ADR</th>
<th>Code: E2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excepted quantities (EQ)</td>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td></td>
<td>Maximum net quantity per outer packaging: 500 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMDG</th>
<th>Code: E2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited quantities (LQ)</td>
<td>1L</td>
</tr>
<tr>
<td>Excepted quantities (EQ)</td>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td></td>
<td>Maximum net quantity per outer packaging: 500 ml</td>
</tr>
</tbody>
</table>

| UN "Model Regulation": | UN1993, Flammable liquids, n.o.s. mixture, 3, II  |

### 15 Regulatory information

<table>
<thead>
<tr>
<th>Safety, health and environmental regulations/legislation specific for the substance or mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sara</strong></td>
</tr>
<tr>
<td>Section 355 (extremely hazardous substances): None of the ingredients is listed.</td>
</tr>
<tr>
<td>Section 313 (Specific toxic chemical listings): None of the ingredients is listed.</td>
</tr>
<tr>
<td>TSCA (Toxic Substances Control Act): All ingredients are listed.</td>
</tr>
<tr>
<td>Proposition 65</td>
</tr>
<tr>
<td>Chemicals known to cause cancer: None of the ingredients is listed.</td>
</tr>
<tr>
<td>Chemicals known to cause reproductive toxicity for females: None of the ingredients is listed.</td>
</tr>
<tr>
<td>Chemicals known to cause reproductive toxicity for males: None of the ingredients is listed.</td>
</tr>
<tr>
<td>Chemicals known to cause developmental toxicity: None of the ingredients is listed.</td>
</tr>
<tr>
<td>Carcinogenic categories</td>
</tr>
<tr>
<td><strong>EPA (Environmental Protection Agency)</strong></td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran SC</td>
</tr>
<tr>
<td><strong>TLV (Threshold Limit Value established by ACGIH)</strong></td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran A3</td>
</tr>
<tr>
<td><strong>NIOSH-Ca (National Institute for Occupational Safety and Health)</strong></td>
</tr>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
<tr>
<td>GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).</td>
</tr>
<tr>
<td>Hazard pictograms</td>
</tr>
<tr>
<td><img src="image" alt="GHS02" /> <img src="image" alt="GHS05" /> <img src="image" alt="GHS07" /> <img src="image" alt="GHS08" /></td>
</tr>
</tbody>
</table>
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
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Use explosion-proof electrical/ventilating/lighting/equipment.
Wear respiratory protection.
Avoid breathing dust/fume/gas/mist/vapors/spray
Wear protective gloves / eye protection / face protection.
Wear protective gloves.
Wear eye protection / face protection.
Ground/bond container and receiving equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
IF ON SKIN (or hair): Remove/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).
If experiencing respiratory symptoms: Call a poison center/doctor.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Wash contaminated clothing before reuse.
IF exposed or concerned: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.
In case of fire: Use for extinction: CO2, powder or water spray.
Store locked up.
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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

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

Date of preparation / last revision 08/24/2015 / -

Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
Trade name: M-BOND 610 CURING AGENT

ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Liq. 2: Flammable liquids, Hazard Category 2
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Carc. 2: Carcinogenicity, Hazard Category 2
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name:** M-BOND 610 CURING AGENT

· **Article number:** 50410-30B

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

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

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

· **Manufacturer/Supplier:**
  Electron Microscopy Sciences
  1560 Industry Road
  USA-Hatfield, PA 19440
  Tel: 215-412-8400  Fax: 215-412-8450
  email: sgkck@aol.com
  www.emsdiasum.com

  ProSciTech Pty Ltd
  11 Carlton Street, Kirwan QLD 4817 Australia
  Telephone Number: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)
  Emergency Contact: (07) 4773 9444 - 8:30am - 5:00pm, Monday to Friday (excluding Public Holidays)

  Emgrid Australia Pty. Ltd.
  P.O. Box 118
  The Patch VIC 3792
  Australia
  Tel: 03 9752 1785
  Fax: 03 9752 1784
  Website: www.emgrid.com.au

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

· **Emergency telephone number:**
  ChemTrec 1-800-424-9300 Contract  CCN7661
  1-703-527-3887

2 Hazards identification

· **Classification of the substance or mixture**

  ![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.

  ![GHS05 corrosion]

  **Carc. 2 H351** Suspected of causing cancer.

  ![Eye Dam. 1 H318]

  **Eye Dam. 1 H318** Causes serious eye damage.
Trade name: M-BOND 610 CURING AGENT

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
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Use explosion-proof electrical/ventilating/lighting/equipment.
[In case of inadequate ventilation] wear respiratory protection.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wear protective gloves / eye protection / face protection.
Wear protective gloves.
Wear eye protection / face protection.
Ground/bond container and receiving equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing should not be allowed out of the workplace.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
IF 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).
If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Wash contaminated clothing before reuse.
IF exposed or concerned: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.
In case of fire: Use for extinction: CO2, powder or water spray.
Store locked up.

(Contd. of page 3)
Trade name: M-BOND 610 CURING AGENT

Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Dispose of contents/container in accordance with local/regional/national/international regulations.

- Additional information:
  - May form explosive peroxides.
- 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 risk phrases refer to section 16.

4 First aid measures

- Description of first aid measures
  - 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: If symptoms persist consult 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 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.
Open and handle receptacle with care.
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/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:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Long-term value</th>
<th>Workplace value</th>
</tr>
</thead>
<tbody>
<tr>
<td>109-99-9 tetrahydrofuran</td>
<td>295 mg/m³</td>
<td>100 ppm</td>
</tr>
</tbody>
</table>

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.

(Contd. on page 5)
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/Melting range: Undetermined.
Boiling point/Boiling range: 66 °C

Flash point: -14 °C

Flammability (solid, gaseous): Not applicable.

Ignition temperature: 230 °C

Decomposition temperature: Not determined.

Self-igniting: Product is not selfigniting.

Danger of explosion: May form explosive peroxides.

Explosion limits:

Lower: 1.5 Vol %
Upper: 12.0 Vol %

Vapour pressure at 20 °C: 200 hPa

Density at 20 °C: 0.98251 g/cm³

(Contd. on page 6)
### 10 Stability and reactivity

- **Reactivity**
- **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 2500 mg/kg (rat)
      - **89-32-7 benzene-1,2:4,5-tetracarboxylic dianhydride**
        - Oral LD50 2250 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**
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name: M-BOND 610 CURING AGENT

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

- **UN-Number**
  - **ADG, IMDG, IATA** UN1993
- **UN proper shipping name**
  - **ADG**
    - **IMDG, IATA** 1993 FLAMMABLE LIQUID, N.O.S. mixture
  - **Transport hazard class(es)**
    - **ADG, IMDG, IATA**
      - **Class** 3 Flammable liquids.
      - **Label** 3
      - **Packing group**
        - **ADG, IMDG, IATA** II
Trade name: M-BOND 610 CURING AGENT

- Environmental hazards: No
- Marine pollutant: No
- Special precautions for user: Warning: Flammable liquids.
- Danger code (Kemler): 33
- EMS Number: F-E,S-D
- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

Transport/Additional information:
- ADG
  - Limited quantities (LQ): 1L
  - 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): 1L
  - Excepted quantities (EQ): Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml

- UN "Model Regulation": UN1993, FLAMMABLE LIQUID, N.O.S. mixture, 3, II

15 Regulatory information
- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Australian Inventory of Chemical Substances
  All ingredients are listed.
- Standard for the Uniform Scheduling of Medicines and Poisons
  None of the ingredients is listed.
- 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.
  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.

(Contd. of page 7)
Trade name: M-BOND 610 CURING AGENT

May cause respiratory irritation.

- **Precautionary statements**
  - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - Use explosion-proof electrical/ventilating/lighting/equipment.
  - In case of inadequate ventilation, wear respiratory protection.
  - Avoid breathing dust/fume/gas/mist/vapours/spray.
  - Wear protective gloves / eye protection / face protection.
  - Wear protective gloves.
  - Wear eye protection / face protection.
  - Ground/bond container and receiving equipment.
  - Take precautionary measures against static discharge.
  - Use only non-sparking tools.
  - Contaminated work clothing should not be allowed out of the workplace.
  - Obtain special instructions before use.
  - Do not handle until all safety precautions have been read and understood.
  - IF 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).
  - If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
  - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  - Wash contaminated clothing before reuse.
  - IF exposed or concerned: Get medical advice/attention.
  - In case of fire: Use for extinction: CO2, powder or water spray.
  - Store locked up.
  - Store in a well-ventilated place. Keep container tightly closed.
  - Store in a well-ventilated place. Keep cool.
  - 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.
  - **Chemical safety assessment**: A Chemical Safety Assessment has not been carried out.

### 16 Other information

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

- **Abbreviations and acronyms**:
  - ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - Flam. Liq. 2: Flammable liquids, Hazard Category 2
  - Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  - Resp. Sens. 1: SENSITISATION - Respirat., Hazard Category 1
  - Skin Sens. 1: SENSITISATION - Skin, Hazard Category 1
  - Carc. 2: Carcinogenicity, Hazard Category 2
  - STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
1 Identification

· Product identifier

· Trade name: M-BOND 610 CURING AGENT

· Article number: 50410-30B

· 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: sgkcek@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

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

  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.

  GHS07

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

· Classification according to Directive 67/548/EEC or Directive 1999/45/EC
  Not applicable.

  Harmful

  Limited evidence of a carcinogenic effect.

  Irritant

(Contd. on page 2)
Irritating to respiratory system. Risk of serious damage to eyes. May cause sensitisation by inhalation and skin contact.

Highly flammable

Highly flammable.

May form explosive peroxides.

Information concerning particular hazards for human and environment:
The product has to be labeled due to the calculation procedure of international guidelines.

Classification system:
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

Label elements

Labelling according to EU guidelines:
The product has been classified and marked in accordance with directives on hazardous materials.

Code letter and hazard designation of product:

Harmful

Highly flammable

Hazard-determining components of labeling:
tetrahydrofuran
benzene-1,2:4,5-tetraacryloxyl dianhydride

Risk phrases:
Highly flammable.
May form explosive peroxides.
Irritating to respiratory system.
Limited evidence of a carcinogenic effect.
Risk of serious damage to eyes.
May cause sensitisation by inhalation and skin contact.

Safety phrases:
Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable protective clothing, gloves and eye/face protection.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
This material and its container must be disposed of as hazardous waste.

Hazard description:

WHMIS-symbols:
B2 - Flammable liquid
D2A - Very toxic material causing other toxic effects

Classification system:

NFPA ratings (scale 0 - 4)

Health = 2
Fire = 3
Reactivity = 0

(Contd. of page 1)
Trade name: M-BOND 610 CURING AGENT

- HMIS-ratings (scale 0 - 4)
  - Health = *2
  - Fire = 3
  - 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 60-100%
  - 89-32-7 benzene-1,2:4,5-tetracarboxylic dianhydride 5-10%

4 First-aid measures

- Description of first aid measures
- After inhalation:
  - Supply fresh air and be sure to call 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:
  - If symptoms persist consult 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.
7 Handling and storage

· Handling:
  · Precautions for safe handling
    Ensure good ventilation/exhaustion at the workplace.
    Open and handle receptacle with care.
    Prevent formation of aerosols.
  · Information about protection against explosions and fires:
    Keep 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:

<table>
<thead>
<tr>
<th>Substance</th>
<th>EL Short-term value</th>
<th>Long-term value</th>
<th>Skin Long-term value</th>
<th>EV Short-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>109-99-9 tetrahydrofuran</td>
<td>100 ppm</td>
<td>50 ppm</td>
<td></td>
<td>100 ppm</td>
</tr>
</tbody>
</table>

· 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.

· 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
  Odour 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): Not flammable.

· Ignition temperature: 230 °C

· Decomposition temperature: Not determined.

· Auto igniting: Product is not selfigniting.

· Danger of explosion: May form explosive peroxides.

· Explosion limits:
  Lower: 1.5 Vol %
Trade name: M-BOND 610 CURING AGENT

41.0

Upper: 12.0 Vol %

- Vapor pressure at 20 °C: 200 hPa
- Density at 20 °C: 0.98251 g/cm³
- 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 %
  - Solids content: 11.8 %
- Other information No further relevant information available.

10 Stability and reactivity

- Reactivity
- 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 2500 mg/kg (rat)
    89-32-7 benzene-1,2:4,5-tetracarboxylic dianhydride
    Oral LD50 2250 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

(Contd. on page 7)
Carcinogenic categories

- IARC (International Agency for Research on Cancer)
  None of the ingredients is listed.

- 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.
  - 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, IMDG, IATA UN1993

- UN proper shipping name
  DOT Flammable liquids, n.o.s. mixture
  TDG 1993 Flammable liquids, n.o.s. mixture
  IMDG, IATA FLAMMABLE LIQUID, N.O.S. mixture
Trade name: M-BOND 610 CURING AGENT

- **Transport hazard class(es)**
  - **DOT**
    - **Class**: 3 Flammable liquids
    - **Label**: 3
  - **TDG, IMDG, IATA**
    - **Class**: 3 Flammable liquids
    - **Label**: 3

- **Packing group**
  - **DOT, TDG, IMDG, IATA**: II

- **Environmental hazards:**
  - **Marine pollutant:** No

- **Special precautions for user**
  - **Warning**: Flammable liquids
  - **Danger code (Kemler)**: 33
  - **EMS Number**: F-E,S-D

- **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
  - **TDG**
    - **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)**
      - 1L
    - **Excepted quantities (EQ)**
      - Code: E2
      - Maximum net quantity per inner packaging: 30 ml
      - Maximum net quantity per outer packaging: 500 ml
  - **UN "Model Regulation"**:
    - UN1993, Flammable liquids, n.o.s. mixture, 3, II

---

15 Regulatory information

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

- **Section 355 (extremely hazardous substances):**
  - None of the ingredients is listed.
### Trade name: M-BOND 610 CURING AGENT

<table>
<thead>
<tr>
<th>Section 313 (Specific toxic chemical listings):</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients is listed.</td>
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</table>

<table>
<thead>
<tr>
<th>TSCA (Toxic Substances Control Act):</th>
</tr>
</thead>
<tbody>
<tr>
<td>All ingredients are listed.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposition 65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals known to cause cancer:</td>
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<tr>
<td>None of the ingredients is listed.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemicals known to cause reproductive toxicity for females:</th>
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</thead>
<tbody>
<tr>
<td>None of the ingredients is listed.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemicals known to cause reproductive toxicity for males:</th>
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<tbody>
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<td>None of the ingredients is listed.</td>
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<table>
<thead>
<tr>
<th>Chemicals known to cause developmental toxicity:</th>
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<tbody>
<tr>
<td>None of the ingredients is listed.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Carcinogenic categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA (Environmental Protection Agency)</td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran SC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TLV (Threshold Limit Value established by ACGIH)</th>
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</thead>
<tbody>
<tr>
<td>109-99-9 tetrahydrofuran A3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NIOSH-Ca (National Institute for Occupational Safety and Health)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Canadian substance listings:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian Domestic Substances List (DSL)</td>
</tr>
<tr>
<td>109-99-9 tetrahydrofuran</td>
</tr>
<tr>
<td>89-32-7 benzene-1,2:4,5-tetracarboxylic dianhydride</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Canadian Ingredient Disclosure list (limit 0.1%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of the ingredients is listed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Canadian Ingredient Disclosure list (limit 1%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>109-99-9 tetrahydrofuran</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product related hazard informations:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The product has been classified and marked in accordance with directives on hazardous materials.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazard symbols:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harmful</td>
</tr>
<tr>
<td>Highly flammable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hazard-determining components of labeling:</th>
</tr>
</thead>
<tbody>
<tr>
<td>tetrahydrofuran</td>
</tr>
<tr>
<td>benzene-1,2:4,5-tetracarboxylic dianhydride</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Risk phrases:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly flammable.</td>
</tr>
<tr>
<td>May form explosive peroxides.</td>
</tr>
<tr>
<td>Irritating to respiratory system.</td>
</tr>
<tr>
<td>Limited evidence of a carcinogenic effect.</td>
</tr>
<tr>
<td>Risk of serious damage to eyes.</td>
</tr>
</tbody>
</table>

(Contd. on page 10)
May cause sensitisation by inhalation and skin contact.

- **Safety phrases:**

  - Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
  - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
  - Wear suitable protective clothing, gloves and eye/face protection.
  - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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

### 16 Other information

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

- **Date of preparation / last revision** 08/24/2015 / -
- **Abbreviations and acronyms:**
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - ACGIH: American Conference of Governmental Industrial Hygienists
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - WHMIS: Workplace Hazardous Materials Information System (Canada)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - Flam. Liq. 2: Flammable liquids, Hazard Category 2
  - Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  - Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
  - Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
  - Carc. 2: Carcinogenicity, Hazard Category 2
  - STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

- **1.1 Product identifier**
  - Trade name: M-BOND 610 CURING AGENT
  - Article number: 50410-30B

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

- **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: sgkck@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

  - 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.

  - GHS07
    Skin Sens. 1  H317  May cause an allergic skin reaction.
    STOT SE 3  H335  May cause respiratory irritation.

- **2.2 Label elements**
  - Labelling according to Regulation (EC) No 1272/2008
  - The product is classified and labelled according to the CLP regulation.
Safety data sheet
according to 1907/2006/EC, Article 31

Trade name: M-BOND 610 CURING AGENT

- **Hazard pictograms**

  ![GHS02](image1) ![GHS05](image2) ![GHS07](image3) ![GHS08](image4)

- **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.
  - H34 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/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).
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Additional information:**
  - EUH019 May form explosive peroxides.

- **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 | benzene-1,2:4,5-tetracarboxylic dianhydride |
  | CAS: 89-32-7 | tetrahydrofuran |
  | EINECS: 203-726-8 | Flam. Liq. 2; H225; Carc. 2; H351; Eye Irrit. 2; H319; STOT SE 3; H335 |
  | EINECS: 201-898-9 | Resp. Sens. 1; H334; Eye Dam. 1; H318; Skin Sens. 1; H317 |

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

(Contd. of page 1)
SECTION 4: First aid measures

4.1 Description of first aid measures

After inhalation:
Supply fresh air and be sure to call 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:
If symptoms persist consult doctor.

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.
Open and handle receptacle with care.
Prevent formation of aerosols.

Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities

Storage:
Requirements to be met by storerooms and receptacles: Store in a cool location.
Trade name: M-BOND 610 CURING AGENT

· 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

· Additional information about design of technical facilities: No further data; see item 7.
· 8.1 Control parameters
  · Ingredients with limit values that require monitoring at the workplace:
    109-99-9 tetrahydrofuran
    WEL Short-term value: 300 mg/m³, 100 ppm
    Long-term value: 150 mg/m³, 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 breakthrough time has to be found out by the manufacturer of the protective gloves and has to be observed.


**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/Melting range: Undetermined.
    - Boiling point/Boiling range: 66 °C
  - Flash point: -14 °C
  - Flammability (solid, gaseous): Not applicable.
  - Ignition temperature: 230 °C
  - Decomposition temperature: Not determined.
  - Self-igniting: Product is not selfigniting.
  - Danger of explosion: May form explosive peroxides.
  - Explosion limits:
    - Lower: 1.5 Vol %
    - Upper: 12.0 Vol %
  - Vapour pressure at 20 °C: 200 hPa
  - Density at 20 °C: 0.98251 g/cm³
  - 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 %

(Contd. on page 5)
SECTION 10: Stability and reactivity

- 10.1 Reactivity
- 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
    - LD/LC50 values relevant for classification:
      - 109-99-9 tetrahydrofuran
        - Oral LD50 2500 mg/kg (rat)
      - 89-32-7 benzene-1,2:4,5-tetracarboxylic dianhydride
        - Oral LD50 2250 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

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
    - 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.
SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Uncleaned packaging:
Recommendation: Disposal must be made according to official regulations.
Recommended cleansing agents: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

14.1 UN-Number
ADR, IMDG, IATA
UN1993

14.2 UN proper shipping name
ADR
1993 FLAMMABLE LIQUID, N.O.S. mixture
IMDG, IATA
FLAMMABLE LIQUID, N.O.S. mixture

14.3 Transport hazard class(es)
ADR, IMDG, IATA

- Class 3 Flammable liquids.
- Label 3

14.4 Packing group
ADR, IMDG, IATA
II

14.5 Environmental hazards:
Marine pollutant: No

14.6 Special precautions for user
Danger code (Kemler): 33
EMS Number: F-E,S-D

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

Transport/Additional information:

ADR
- Limited quantities (LQ) 1L
- Exceopted 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
Trade name: M-BOND 610 CURING AGENT

- IMDG
  - Limited quantities (LQ) 1L
  - Excepted quantities (EQ) Code: E2
    Maximum net quantity per inner packaging: 30 ml
    Maximum net quantity per outer packaging: 500 ml
- UN "Model Regulation": UN1993, FLAMMABLE LIQUID, N.O.S. mixture, 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.
- 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 européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  Flum. Liq. 2: Flammable liquids, Hazard Category 2
  Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
  Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
  Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
  Carc. 2: Carcinogenicity, Hazard Category 2
  STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
ODDÍL 1: Identifikace látky/směsi a společnosti/podniku

1.1 Identifikátor výrobku

- Obchodní označení: M-BOND 610 CURING AGENT
- Číslo výrobku: 50410-30B

1.2 Příslušná určitá látky nebo směsi a nedoporučená použití

Další relevantní informace nejsou k dispozici.

1.3 Podrobné údaje o dodavateli bezpečnostního listu

- Identifikace výrobce/dovozce: Electron Microscopy Sciences
  1560 Industry Road
  USA-Hatfield, PA 19440
  Tel: 215-412-8400  Fax: 215-412-8450
  email: sgkck@aol.com
  www.emsdiasum.com

- Obor poskytující informace: Product safety department

1.4 Telefonní číslo pro naléhavé situace:

ChemTrec 1-800-424-9300 Contract CCN7661
1-703-527-3887

ODDÍL 2: Identifikace nebezpečnosti

2.1 Klasifikace látky nebo směsi

- Klasifikace v souladu s nařízením (ES) č. 1272/2008

GHS02 plamen

Flam. Liq. 2 H225 Vysoce hořlavá kapalina a páry.

GHS08 nebezpečnost pro zdraví

Resp. Sens. 1 H334 Při vdechování může vyvolat příznaky alergie nebo astmatu nebo dýchací potíže.
Carc. 2 H351 Podezření na vyvolání rakoviny.

GHS05 korozivita

Eye Dam. 1 H318 Způsobuje vážné poškození očí.

GHS07

Skin Sens. 1 H317 Může vyvolat alergickou kožní reakci.
STOT SE 3 H335 Může způsobit podráždění dýchacích cest.

2.2 Prvky označení

- Označování v souladu s nařízením (ES) č. 1272/2008 Produkt je klasifikován a označen podle nařízení CLP.

(pokračování na straně 2)
**Obchodní označení:** M-BOND 610 CURING AGENT

- **Výstražné symboly nebezpečnosti**

  - GHS02
  - GHS05
  - GHS07
  - GHS08

- **Signální slovo Nebezpečí**

- **Nebezpečné komponenty k etiketování:**
  - tetrahydrofuran
  - benzen-1,2:4,5-tetrakarboxdianhydrid

- **Standardní věty o nebezpečnosti**
  - H225 Vysoce hořlavá kapalina a páry.
  - H318 Způsobuje vážné poškození očí.
  - H334 Při vdechování může vytvářet příznaky alergie nebo astmatu a/nebo dýchací potíže.
  - H317 Může vytvářet alergickou kožní reakci.
  - H351 Podezření na ryzy rakoviny.
  - H335 Může způsobit podráždění dýchacích cest.

- **Pokyny pro bezpečné zacházení**

  - P303+P361+P353 PŘI STYKU S KŮŽÍ (nebo s vlasy): Veškeré kontaminované části odstraněte.
  - Opláchněte kůži vodou/osprchujte.
  - P310 Okamžitě volejte TOXIKOLOGICKÉ INFORMAČNÍ STŘEDISKO/lékaře.
  - P321 Odborné ošetření (viz na tomat štítku).
  - P405 Skladujte uzamčené.
  - P501 Obsah/nádoby likvidujte v souladu s místními/regionálními/národními/mezinárodními předpisy.

- **Další údaje:**
  - EUH019 Může vytvářet výbušné peroxidy.

3.2 Další nebezpečnost

- Výsledky posouzení PBT a vPvB
  - PBT: Nedá se použít.
  - vPvB: Nedá se použít.

**ODDÍL 3: Složení/informace o složkách**

- **Výrobní složení:**
  - CAS: 109-99-9
    - EINECS: 203-726-8
    - tetrahydrofuran
      - Flam. Liq. 2, H225;
      - Carc. 2, H351;
      - Eye Irr. 2, H319; STOT SE 3, H335
    - 50-100%
  - CAS: 89-32-7
    - EINECS: 201-898-9
    - benzen-1,2:4,5-tetrakarboxdianhydrid
      - Resp. Sens. 1, H334; Eye Dam. 1, H318; Skin Sens. 1, H317
    - 2,5-10%

- **Dodatečná upozornění:** Znění uvedených údajů o nebezpečnostních látkách je uvedeno v kapitole 16.
**ODDÍL 4: Pokyny pro první pomoc**

- **4.1 Popis první pomoci**
- **Při nadýchaní:**
  Bohatý přívod čerstvého vzduchu a pro jistotu vyhledat lékaře.
- **Při bezvědomí:**
  Uložit a přepravit do stabilní poloze na boku.
- **Při styku s kůží:**
  Otevřené oči po více minut oplachovat pod tekoucí vodou a poradit se s lékařem.
- **Při požití:**
  Při přetrvávajících potížích konzultovat s lékařem.

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

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

---

**ODDÍL 5: Opatření pro hašení požáru**

- **5.1 Hasiva**
- **Vhodná hasiva:**
  CO2, hasící prášek nebo rozestříkané vodní paprsky. Větší ohně zdolat rozestříkanými vodními paprsky nebo pěnou odolnou vůči alkoholu.
- **5.2 Zvláštní nebezpečnost vypálení z látky nebo směsi**
  Další relevantní informace nejsou k dispozici.
- **5.3 Pokyny pro hasiče**
  Zvláštní ochranné prostředky pro hasiče: Nejsou nutná žádná zvláštní opatření.

---

**ODDÍL 6: Opatření v případě náhodného úniku**

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

---

**ODDÍL 7: Zacházení a skladování**

- **7.1 Opatření pro bezpečné zacházení**
  Na pracovišti zabezpečit dobré větrání a odsávání.
  Nádrž opatrně otevřít a zacházet s ní opatrně.
  Zamezit vytváření aerosolů.
- **Upozornění k ochraně před ohnem a explozi**
  Nepřibližovat se ze zápalnými zdroji - nekouřit.
  Chránit před horkem.
  Zajistit proti elektrostatickému náboji.
7.2 Podmínky pro bezpečné skladování látek a směsí včetně neslučitelných látek a směsí

Pokyny pro skladování:
- Požadavky na skladovací prostory a nádoby: Skladovat na chladném místě.
- Úpory v k hromadném skladování: Není nutné.
- Další údaje k podmínkám skladování:
  Nádrž držet neprodyšně uzavřenou.
  Skladovat v době uzavřených nádobách v chladu a suchu.
  Chránit před horkem a průmyslním sluníčním světlem.

7.3 Specifické konečné / specifická konečná použití Další relevantní informace nejsou k dispozici.

ODDÍL 8: Omezování expozice / osobní ochranné prostředky

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

8.1 Kontrolní parametry

- Kontrolní parametry:

<table>
<thead>
<tr>
<th>109-99-9 tetrahydrofuran</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPK</td>
</tr>
<tr>
<td>Krátkodobá hodnota: 300 mg/m³</td>
</tr>
<tr>
<td>Dlouhodobá hodnota: 150 mg/m³</td>
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<td>D, I</td>
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- Další upozornění: Jako podklad sloužily při zhotovení platné listiny.

8.2 Omezování expozice

- Osobní ochranné prostředky:
  - Všeobecná ochranná a hygienická opatření:
    - Zdržovat od potravin, nápojů a krmiv.
    - Zašpiněné, nasáknuté šaty ihned vysvléci.
    - Před přestávkami a po práci umýt ruce.
    - Zamezit styku se zrakem.
  - Ochrana dýchacích orgánů:
    - Při kratkodobém nebo nízkém zatížení použít dýchací přístroj s filtrem, při intenzivním nebo delším zatížení se musí použít dýchací přístroj nezávislý na okolním vzduchu.
  - Ochrana rukou:

    Ochranné rukavice

Materiál rukavic musí být nepropustný a odolný proti produktu / látky / směsi.
Vzhledem k tomu, že chybí testy, není možné doporučit materiál rukavic pro produkt / přípravek / chemickou směs.
Výběr materiálu rukavic provede podle času průniku, permeability a degradace.

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

- Doba průniku materiálem rukavic
Je nutno u výrobce rukavic zjistit a dodržovat přesné časy průniku materiálem ochranných rukavic.
**Bezpečnostní list**
**podle 1907/2006/ES, Článek 31**

Datum vydání: 24.08.2015  
Revize: 24.08.2015

Obchodní označení: M-BOND 610 CURING AGENT

(pokračování strany 4)

---

**OCHRANA OČÍ:**
Uzavřené ochranné brýle

---

### ODDÍL 9: Fyzikální a chemické vlastnosti

<table>
<thead>
<tr>
<th>9.1 Informace o základních fyzikálních a chemických vlastnostech</th>
</tr>
</thead>
<tbody>
<tr>
<td>Všeobecné údaje</td>
</tr>
<tr>
<td>Vzhled:</td>
</tr>
<tr>
<td>Skupenství: Tekutina</td>
</tr>
<tr>
<td>Barva: Jantarová</td>
</tr>
<tr>
<td>Zápach (vůně): Etherovitý</td>
</tr>
<tr>
<td>Prahová hodnota zápachu:</td>
</tr>
<tr>
<td>Hodnota pH:         Není určeno.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Změna stavu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teplota (rozmezí teplot) tání: Není určeno.</td>
</tr>
<tr>
<td>Teplota (rozmezí teplot) varu: 66 °C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bod vzplanutí: -14 °C</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Zápalnost (tuhé, plynné skupenství): Nedá se použít.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Zápalná teplota: 230 °C</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Teplota rozkladu: Není určeno.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Samozápalnost: Produkt není samozápalný.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Nebezpečí exploze: Může vytvářet výbušné peroxidy.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Meze výbušnosti:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dolní mez: 1,5 Vol %</td>
</tr>
<tr>
<td>Horní mez: 12,0 Vol %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tenze par při 20 °C: 200 hPa</th>
</tr>
</thead>
</table>

| Hustota při 20 °C: 0,98251 g/cm³ |
| Relativní hustota: Není určeno. |
| Hustota par: Není určeno. |
| Rychlost odpařování: Není určeno. |

<table>
<thead>
<tr>
<th>Rozpustnost ve / směsitelnost s vodě: Úplně mísitelná.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Rozdělovací koeficient n-oktanol/ voda: Není určeno.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Viskozita:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamicky: Není určeno.</td>
</tr>
<tr>
<td>Kinematicky: Není určeno.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Obsah ředidel:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organická ředidla: 88,3 %</td>
</tr>
<tr>
<td>VOC (EC): 88,25 %</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Obsah netěkavých složek: 11,8 %</th>
</tr>
</thead>
</table>

(pokračování na straně 6)
ODDÍL 10: Stálost a reaktivita

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

ODDÍL 11: Toxikologické informace

· 11.1 Informace o toxikologických účincích
· Akutní toxicita

· Zařazení relevantní hodnoty LD/LC 50:
  109-99-9 tetrahydrofuran
  Orálně LD50 2500 mg/kg (rat)
  89-32-7 benzen-1,2:4,5-tetrakarboxdianhydrid
  Orálně LD50 2250 mg/kg (rat)

· Primární dráždivé účinky:
  Žádné dráždivé účinky

· Vážné poškození očí / podráždění očí: Silné dráždivé účinky s nebezpečím vzniku vážných poškození zraku

· Senzibilizace dýchacích cest / senzibilizace kůže: Vdechnutím je možná senzibilizace.
  Stykem s pokožkou je možné přecitlivělost.

· Doplňující toxikologická upozornění:
  Produkt poukazuje, na základě výpočtů všeobecných zařaďovacích směrnic ES pro přípravky v posledním platném znění následující nebezpečí:
  zdraví škodlivý
  dráždivý

· Účinky CMR (karcinogenita, mutagenita a toxicita pro reprodukci)
  Carc. 2

ODDÍL 12: Ekologické informace

· 12.1 Toxicita
· Aquatická toxicita: Další relevantní informace nejsou k dispozici.
· 12.2 Perzistence a rozložitelnost: Další relevantní informace nejsou k dispozici.
· 12.3 Bioakumulační potenciál: Další relevantní informace nejsou k dispozici.
· 12.4 Mobilita v půdě: Další relevantní informace nejsou k dispozici.

· Další ekologické údaje:
  Všeobecná upozornění:
  Třída ohrožení vody 1 (Samozářazení): slabá ohrožení vody
  Nesmí se dostat nezředěný nebo ve větším množství do spodní vody, povodí nebo kanalizace.
· 12.5 Výsledky posouzení PBT a vPvB
· PBT: Nedá se použít.
**Bezpečnostní list**

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---

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- vPvB: Nedá se použít.
- 12.6 Jiné nepříznivé účinky: Další relevantní informace nejsou k dispozici.

---

## ODDÍL 13: Pokyny pro odstraňování

- 13.1 Metody nakládání s odpady
  - Doporučení: Nesmí se odstraňovat společně s odpady z domácnosti. Nepřipustit únik do kanalizace.
  - Kontaminované obaly:
  - Doporučení: Odstranění podle příslušných předpisů.
  - Doporučený čisticí prostředek: Voda, případně s přísadami čistících prostředků.

---

## ODDÍL 14: Informace pro přepravu

- 14.1 Číslo OSN
  - ADR, IMDG, IATA: UN1993

- 14.2 Náležitý název OSN pro zásilku
  - ADR
  - IMDG, IATA: 1993 LÁTKA HOŘLAVÁ, KAPALNÁ, J.N., Směs FLAMMABLE LIQUID, N.O.S. mixture

- 14.3 Třída/třídy nebezpečnosti pro přepravu
  - ADR, IMDG, IATA
  - Třída: 3
  - Etiketa: Hořlavé kapaliny

- 14.4 Obalová skupina
  - ADR, IMDG, IATA: II

- 14.5 Nebezpečnost pro životní prostředí:
  - Látka znečišťuje moře: Ne

- 14.6 Zvláštní bezpečnostní opatření pro uživatele
  - Varování: Hořlavé kapaliny
  - Kemlerovo číslo: 33
  - EMS-skupina: F-E,S-D

- 14.7 Hromadná přeprava podle přílohy II MARPOL73/78 a předpisu IBC
  - Nedá se použít.

- Přeprava/další údaje:
  - ADR
    - Omezené množství (LQ): 1L
    - Vyňatá množství (EQ): Kód: E2
    - Nejvyšší čisté množství na vnitřní obal: 30 ml
    - Nejvyšší čisté množství na vnější obal: 500 ml
  - Přepravní kategorie: 2
  - Kód omezení pro tunely: D/E
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| · IMDG |  
| Limited quantities (LQ) | 1L  
| Excepted quantities (EQ) | Code: E2  
| Maximum net quantity per inner packaging: | 30 ml  
| Maximum net quantity per outer packaging: | 500 ml  
| · UN "Model Regulation": | UN1993, LÁTKA HOŘLAVÁ, KAPALNÁ, J.N., Směs, 3, II |

**ODDÍL 15: Informace o předpisech**

- **15.1** Nařízení týkající se bezpečnosti, zdraví a životního prostředí/specifické právní předpisy týkající se látky nebo směsi
- **Rady 2012/18/EU**
- **Nebezpečné látky jmenovitě uvedené - PŘÍLOHA I** Žádná z obsažených látek není na seznamu.
- **15.2 Posouzení chemické bezpečnosti:** Posouzení chemické bezpečnosti nebylo provedeno.

**ODDÍL 16: Další informace**

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

**Relevantní věty**
- H225 Vysoko hořlavá kapalina a páry.
- H317 Může vyvolat alergickou kožní reakci.
- H318 Způsobuje vážné poškození očí.
- H319 Způsobuje vážné podráždění očí.
- H334 Při vdechování může vyvolat příznaky alergie nebo astmatu nebo dýchací potíže.
- H335 Může způsobit podráždění dýchacích cest.
- H351 Podezření na vyvolání rakoviny.

**Zkratky a akronymy:**
- ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
- IMDG: International Maritime Code for Dangerous Goods
- IATA: International Air Transport Association
- GHS: Globally Harmonised System of Classification and Labelling of Chemicals
- EINECS: European Inventory of Existing Commercial Chemical Substances
- ELINCS: European List of Notified Chemical Substances
- CAS: Chemical Abstracts Service (division of the American Chemical Society)
- VOC: Volatile Organic Compounds (USA, EU)
- LC50: Lethal concentration, 50 percent
- LD50: Lethal dose, 50 percent
- Flm. Liq. 2: Flammable liquids, Hazard Category 2
- Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
- Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
- Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
- Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
- Carc. 2: Carcinogenicity, Hazard Category 2
- STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
RUBRIEK 1: Identificatie van de stof of het mengsel en van de vennootschap/onderneming

- 1.1 Productidentificatie

  - Handelsnaam: M-BOND 610 CURING AGENT
  - Artikelnummer: 50410-30B

- 1.2 Relevant geïdentificeerd gebruik van de stof of het mengsel en ontraden gebruik

  Geen verdere relevante informatie verkrijgbaar.

- 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: sgkck@aol.com
    www.emsdiasum.com

  - Fabrikant/leverancier:
    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
    Skin Sens. 1 H317 Kan een allergische huidreactie veroorzaken.

(Vervolg op blz. 2)
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STOT SE 3 H335 Kan irritatie van de luchtwegen veroorzaken.

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

• Signaalwoord Gevaar
  • Gevaaraanduidende componenten voor de etikettering:
    tetrahydrofuraan  
    benzeen-1,2:4,5-tetracarbonzuurdianhydride
  • Gevarenaanduidingen
    H225 Licht ontvlambare vloeistof en damp.
    H318 Veroorzaakt ernstig oogletsel.
    H319 Veroorzaakt een allergische huidreactie.
    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
  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).
  P405 Achter slot bewaren.
  P501 De inhoud en de verpakking verwerken volgens de plaatselijke/regionale/nationale/internationale voorschriften.

- Aanvullende gegevens:
  EUH019 Kan ontplofbare peroxiden vormen.

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-tetracarbonzuurdianhydride | 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
- 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: Als de klachten niet minderen, een arts raadplegen

RUBRIEK 5: Brandbestrijdingsmaatregelen

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

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

- 6.1 Persoonlijke voorzorgsmaatregelen, beschermde uitrusting en noodprocedures
  Beschermende kleding aantrekken. Niet beschermde personen op afstand houden.
- 6.2 Milieuvoorzorgsmaatregelen:
  Met veel water verdunnen.
  Niet in de riolering/oppervlaktewater/groundwater 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.
  Tanks voorzichtig openen en behandelen.
  Aërosolvorming vermijden.
  Informatie m.b.t. brand- en ontploffingsgevaar:
  Onstekingsbronnen 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:
  - Eizen ten opzichte van opslagruimte en tanks: Op een koelte plaats bewaren.
  - Informatie m.b.t. gezamenlijke opslag: Niet noodzakelijk.
  - Verdere inlichtingen over eisen m.b.t. de opslag:
    Tanks ondoorzichtig 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

<table>
<thead>
<tr>
<th>Bestanddeel</th>
<th>Grenswaarde korter termijn</th>
<th>Grenswaarde lange termijn</th>
</tr>
</thead>
<tbody>
<tr>
<td>109-99-9 tetrahydrofuraan</td>
<td>600 mg/m³, 200 ppm</td>
<td>300 mg/m³, 100 ppm</td>
</tr>
</tbody>
</table>

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

- 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 ademhalingsstoestel gebruiken.
    - Handbescherming:
      Veiligheidshandschoenen

Het handschoenmateriaal moet ondoorlatend en bestand zijn tegen het product/ de stof/ de bereiding.
Op grond van falende testen kan geen aanbeveling voor handschoenmateriaal voor het product/ de bereiding/ het chemicaliënmengsel gegeven worden.
Kies handschoenmateriaal rekening houdend met de penetratietijden, de permeatiegraden en de degradatie.

- Handschoenmateriaal
  De keuze van een geschikt 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 derhalte vóór het gebruik worden getest.

**Doordringingsduur van het handschoenmateriaal**
De precieze penetratietijd kunt u te weten komen bij de handschoenfabrikant; houd er rekening mee.
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<table>
<thead>
<tr>
<th>RUBRIEK 9: Fysische en chemische eigenschappen</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.1 Informatie over fysische en chemische basiseigenschappen</td>
</tr>
<tr>
<td>· Voorkomen:</td>
</tr>
<tr>
<td>Vorm: Vloeistof</td>
</tr>
<tr>
<td>Kleur: Barnsteenkleurig</td>
</tr>
<tr>
<td>Reuk: Etherachtig</td>
</tr>
<tr>
<td>Geurdrempelwaarde: Niet bepaald.</td>
</tr>
<tr>
<td>· pH-waarde: Niet bepaald.</td>
</tr>
<tr>
<td>· Toestandsverandering</td>
</tr>
<tr>
<td>Smeltpunt/smeltbereik: Niet bepaald.</td>
</tr>
<tr>
<td>Kookpunt/kookpuntbereik: 66 °C</td>
</tr>
<tr>
<td>· Vlampunt: -14 °C</td>
</tr>
<tr>
<td>· Ontvlambaarheid (vast, gasvormig): Niet bruikbaar.</td>
</tr>
<tr>
<td>· Ontstekingstemperatuur: 230 °C</td>
</tr>
<tr>
<td>· Ontbindingstemperatuur: Niet bepaald.</td>
</tr>
<tr>
<td>· Zelfonsteking: Het produkt ontbrandt niet uit zichzelf.</td>
</tr>
<tr>
<td>· Ontploffingsgevaar: Kan ontplofbare peroxiden vormen.</td>
</tr>
<tr>
<td>· Ontploffingsgrenzen:</td>
</tr>
<tr>
<td>Onderste: 1,5 Vol %</td>
</tr>
<tr>
<td>Bovenste: 12,0 Vol %</td>
</tr>
<tr>
<td>· Dampspanning bij 20 °C: 200 hPa</td>
</tr>
<tr>
<td>· Dichtheid bij 20 °C: 0,98251 g/cm³</td>
</tr>
<tr>
<td>Relatieve dichtheid: Niet bepaald.</td>
</tr>
<tr>
<td>Dampdichtheid: Niet bepaald.</td>
</tr>
<tr>
<td>Verdampingsnelheid: Niet bepaald.</td>
</tr>
<tr>
<td>· Oplosbaarheid in/mengbaarheid met Water: Volledig mengbaar.</td>
</tr>
<tr>
<td>· Verdelingscoëfficiënt (n-octanol/water): Niet bepaald.</td>
</tr>
<tr>
<td>· Viscositeit</td>
</tr>
<tr>
<td>Dynamisch: Niet bepaald.</td>
</tr>
<tr>
<td>Kinematisch: Niet bepaald.</td>
</tr>
<tr>
<td>· Oplosmiddelgehalte:</td>
</tr>
<tr>
<td>Organisch oplosmiddel: 88,3 %</td>
</tr>
<tr>
<td>VOC (EG): 88,25 %</td>
</tr>
<tr>
<td>· Gehalte aan vaste bestanddelen: 11,8 %</td>
</tr>
</tbody>
</table>
RUBRIEK 10: Stabiliteit en reactiviteit

- 10.1 Reactiviteit
- 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 ontbindingsprodukten bekend.

RUBRIEK 11: Toxicologische informatie

- 11.1 Informatie over toxicologische effecten
- Acute toxiciteit

<table>
<thead>
<tr>
<th>Indelingsrelevant LD/LC50-waarden:</th>
</tr>
</thead>
<tbody>
<tr>
<td>109-99-9 tetrahydrofuraan</td>
</tr>
<tr>
<td>Oraal LD50 2500 mg/kg (rat)</td>
</tr>
<tr>
<td>89-32-7 benzeen-1,2:4,5-tetracarbonzuurdianhydride</td>
</tr>
<tr>
<td>Oraal LD50 2250 mg/kg (rat)</td>
</tr>
</tbody>
</table>

- Primaire aandoening:
- Huidcorrosie/-irritatie: Geen prikkelend effect.
- Ernstig oogletsel/oogirritatie: Sterk prikkelend effect met gevaar voor ernstige oogbeschadiging.
- Sensibilisatie van de luchtwegen/de huid
  Kan overgevoeligheid veroorzaken bij inademing.
  Kan overgevoeligheid veroorzaken bij contact met de huid.
- Aanvullende toxicologische informatie:
  Het produkt vertoont op grond van het berekeningsprocedé van de algemene classificatie-richtlijnen van de EG voor toebereidingen in de laatste geldige redactie de volgende gevaren:
  Schadelijk
  Irritend
- CMR-effecten (kankerverwekkendheid, mutageniteit en giftigheid voor de voortplanting)
  Carc. 2

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 Mobilité in de bodem: Geen verdere relevante informatie verkrijgbaar.
- Verdere ecologische informatie:
- Algemene informatie:
  Waterbezwaarlijkheid (NL) 10: Kan in het aquatisch milieu op lange termijn schadelijke effecten veroorzaken.
  Gevaar voor water klasse 1 (D) (Zelfclassificatie): gevaar voor water klein
  Niet onverdund of in grote hoevelheden losen in grondwater, in oppervlaktewater of in de riolering.
- 12.5 Resultaten van PBT- en zPzB-beoordeling
- PBT: Niet bruikbaar.
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- 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**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1 VN-nummer</td>
<td>UN1993</td>
</tr>
<tr>
<td>14.2 Juiste ladingnaam overeenkomstig de modelreglementen van de VN</td>
<td>ADR 1993 BRANDBARE VLOEISTOF, N.E.G., Mengsel IMDG, IATA FLAMMABLE LIQUID, N.O.S. mixture</td>
</tr>
<tr>
<td>14.3 Transportgevarenklasse(n)</td>
<td>ADR, IMDG, IATA</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>klasse</td>
<td>3 Brandbare vloeistoffen</td>
</tr>
<tr>
<td>Etiket</td>
<td>3</td>
</tr>
<tr>
<td>14.4 Verpakkingsgroep:</td>
<td>ADR, IMDG, IATA II</td>
</tr>
<tr>
<td>14.5 Milieugevaren:</td>
<td>Marine pollutant: Neen</td>
</tr>
<tr>
<td>14.6 Bijzondere voorzorgen voor de gebruiker</td>
<td>Waarschuwing: Brandbare vloeistoffen Kemi-getal: 33 EMS-nummer: F-E,S-D</td>
</tr>
<tr>
<td>14.7 Vervoer in bulk overeenkomstig bijlage II bij MARPOL 73/78 en de IBC-code</td>
<td>Niet bruikbaar.</td>
</tr>
<tr>
<td>Transport/verdere gegevens:</td>
<td></td>
</tr>
<tr>
<td>ADR</td>
<td></td>
</tr>
<tr>
<td>Beperkte hoeveelheden (LQ)</td>
<td>1L Code: E2 Grootsste netto hoeveelheid per binnenverpakking: 30 ml Grootsste netto hoeveelheid per buitenverpakking: 500 ml</td>
</tr>
<tr>
<td>Uitgezonderde hoeveelheden (EQ)</td>
<td></td>
</tr>
<tr>
<td>Vervoerscategorie</td>
<td>2</td>
</tr>
<tr>
<td>Tunnelbeperkingscode</td>
<td>D/E</td>
</tr>
</tbody>
</table>
Veiligheidsinformatieblad
volgens 1907/2006/EG, Artikel 31

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(Vervolg van blz. 7)

IMDG
· Limited quantities (LQ) 1L
· Excepted quantities (EQ) Code: E2
  Maximum net quantity per inner packaging: 30 ml
  Maximum net quantity per outer packaging: 500 ml

VN "Model Regulation": UN1993, BRANDBARE VLOEISTOF, N.E.G., Mengsel, 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
gen geen der bestanddelen staat op de lijst.

- SZW-lijst van mutagene stoffen
gen geen der bestanddelen staat op de lijst.

- NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Vruchtbaarheid
gen geen der bestanddelen staat op de lijst.

- NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Ontwikkeling
gen geen der bestanddelen staat op de lijst.

- NIET-limitatieve lijst van voor de voortplanting giftige stoffen - Borstvoeding
gen geen der bestanddelen staat op de lijst.

- Richtlijn 2012/18/EU
  Gevaarlijke stoffen die met naam genoemd worden - BIJLAGE I
gen geen der bestanddelen staat op de lijst.

- Nationale voorschriften:
  - Gevaarklasse v. water: Waterbezwaarlijkheid (NL) 10: Saneringsinspanning A
  - 15.2 Chemischeveiligheidsbeoordeling: Een chemische veiligheidsbeoordeling is niet uitgevoerd.

RUBRIEK 16: Overige informatie

Deze gegevens zijn gebaseerd op de huidige stand van onze kennis. Zij beschrijven echter geen garantie van 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 européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  VOC: Volatile Organic Compounds (USA, EU)

(Vervolg op blz. 9)
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LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Liq. 2: Flammable liquids, Hazard Category 2
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Carc. 2: Carcinogenicity, Hazard Category 2
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
SECTION 1: Identification de la substance/du mélange et de la société/l'entreprise

1.1 Identificateur de produit
- Nom du produit: M-BOND 610 CURING AGENT
- Code du produit: 50410-30B

1.2 Utilisations identifiées pertinentes de la substance ou du mélange et utilisations déconseillées
- 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: sgkck@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

SECTION 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 des lésions oculaires graves.

- GHS07
  Skin Sens. 1 H317 Peut provoquer une allergie cutanée.
  STOT SE 3 H335 Peut irriter les voies respiratoires.

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

FR
Nom du produit: M-BOND 610 CURING AGENT

- 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 des lésions oculaires graves.
  - H334 Peut provoquer des symptômes allergiques ou d'asthme ou des difficultés respiratoires par inhalation.
  - H317 Peut provoquer une allergie cutanée.
  - H351Susceptible 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/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).
  - P405 Garder sous clef.
  - P501 Éliminer le contenu/récipient conformément à la réglementation locale/régionale/nationale/internationale.

- indications complémentaires:
  - EUH019 Peut former des peroxydes explosifs.

- 2.3 Autres dangers

- Résultats des évaluations PBT et vPvB
  - PBT: Non applicable.
  - vPvB: Non applicable.

SECTION 3: Composition/informations sur les composants

- 3.2 Caractérisation chimique: Mélange

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

- Composants dangereux:

<table>
<thead>
<tr>
<th>CAS</th>
<th>EINECS</th>
<th>Description</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>109-99-9</td>
<td>203-726-8</td>
<td>tétrahydrofurane</td>
<td>50-100%</td>
</tr>
<tr>
<td>89-32-7</td>
<td>201-898-9</td>
<td>anhydride benzène-1,2;4,5-tétracarboxylique</td>
<td>2,5-10%</td>
</tr>
</tbody>
</table>

- Indications complémentaires: Pour le libellé des phrases de risque citées, se référer au chapitre 16.
SECTION 4: Premiers secours
· 4.1 Description des premiers secours
· 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: Si les troubles persistent, consulter 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.

SECTION 5: Mesures de lutte contre l'incendie
· 5.1 Moyens d'extinction
· Moyens d'extinction:
  CO2, poudre d'extinction ou eau pulvérisée. Combattre les foyers importants avec de l'eau pulvérisée ou de la mousse résistant à l'alcool.
· 5.2 Dangers particuliers résultant de la substance ou du mélange
  Pas d'autres informations importantes disponibles.
· 5.3 Conseils aux pompiers
  · Équipement spécial de sécurité: Aucune mesure particulière n'est requise.

SECTION 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. Éloigner 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).
  Évacuer les matériaux contaminés en tant que déchets conformément au point 13.
  Assurer une aération suffisante.
· 6.4 Référence à d'autres sections
  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.

SECTION 7: Manipulation et stockage
· 7.1 Précautions à prendre pour une manipulation sans danger
  Veiller à une bonne ventilation/aspiration du poste de travail.
  Ouvrir et manipuler les récipients avec précaution.
  Éviter la formation d'aérosols.
· Préventions des incendies et des explosions:
  Tenir à l'abri des sources d'inflammation - ne pas fumer.

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Nom du produit: M-BOND 610 CURING AGENT

- 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.

SECTION 8: Contrôles de l'exposition/protection individuelle

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

8.1 Paramètres de contrôle
- Composants présentant des valeurs-seuil à surveiller par poste de travail:
  109-99-9 tétrahydrofuran

<table>
<thead>
<tr>
<th>VME</th>
<th>Valeur momentanée: 300 mg/m³, 100 ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Valeur à long terme: 150 mg/m³, 50 ppm</td>
</tr>
<tr>
<td></td>
<td>risque de pénétration percutanée</td>
</tr>
</tbody>
</table>

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

8.2 Contrôles de l'exposition
- Equipement de protection individuel:
  - Mesures générales de protection et d'hygiène:
    - Tenir à l'écart des produits alimentaires, des boissons et de la nourriture pour animaux.
    - Retirer immédiatement les vêtements souillés ou humectés.
    - Se laver les mains avant les pauses et en fin de travail.
    - 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.
A cause du manque de tests, aucune recommandation pour un matériau de gants pour le produit / la préparation / le mélange de produits chimiques ne peut être donnée.
Choix du matériau des gants en fonction des temps de pénétration, du taux de perméabilité et de la dégradation.

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

- Temps de pénétration du matériau des gants
  Le temps de pénétration exact est à déterminer par le fabricant des gants de protection et à respecter.
**Nom du produit: M-BOND 610 CURING AGENT**

- Protection des yeux:
  
  Lunettes de protection hermétiques

**SECTION 9: Propriétés physiques et chimiques**

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Valeur</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forme:</td>
<td>Liquide</td>
</tr>
<tr>
<td>Couleur:</td>
<td>Ambré</td>
</tr>
<tr>
<td>Odeur:</td>
<td>Genre éther</td>
</tr>
<tr>
<td>Seuil olfactif:</td>
<td>Non déterminé.</td>
</tr>
<tr>
<td>Changement d'état</td>
<td></td>
</tr>
<tr>
<td>Point de fusion:</td>
<td>Non déterminé.</td>
</tr>
<tr>
<td>Point d'ébullition:</td>
<td>66 °C</td>
</tr>
<tr>
<td>Point d'éclair</td>
<td>-14 °C</td>
</tr>
<tr>
<td>Inflammabilité (solide, gazeux):</td>
<td>Non applicable.</td>
</tr>
<tr>
<td>Température d'inflammation:</td>
<td>230 °C</td>
</tr>
<tr>
<td>Température de décomposition:</td>
<td>Non déterminé.</td>
</tr>
<tr>
<td>Auto-inflammation:</td>
<td>Le produit ne s'enflamme pas spontanément.</td>
</tr>
<tr>
<td>Limites d'explosion:</td>
<td></td>
</tr>
<tr>
<td>Inférieure:</td>
<td>1,5 Vol %</td>
</tr>
<tr>
<td>Supérieure:</td>
<td>12,0 Vol %</td>
</tr>
<tr>
<td>Pression de vapeur à 20 °C:</td>
<td>200 hPa</td>
</tr>
<tr>
<td>Densité à 20 °C:</td>
<td>0,98251 g/cm³</td>
</tr>
<tr>
<td>Densité relative</td>
<td>Non déterminé.</td>
</tr>
<tr>
<td>Densité de vapeur.</td>
<td>Non déterminé.</td>
</tr>
<tr>
<td>Vitesse d'évaporation</td>
<td>Non déterminé.</td>
</tr>
<tr>
<td>Solubilité dans/miscibilité avec l'eau:</td>
<td>Entièrementmiscible</td>
</tr>
<tr>
<td>Coefficient de partage (n-octanol/eau):</td>
<td>Non déterminé.</td>
</tr>
<tr>
<td>Viscosité:</td>
<td></td>
</tr>
<tr>
<td>Dynamique:</td>
<td>Non déterminé.</td>
</tr>
<tr>
<td>Cinématique:</td>
<td>Non déterminé.</td>
</tr>
<tr>
<td>Teneur en solvants:</td>
<td></td>
</tr>
<tr>
<td>Solvants organiques:</td>
<td>88,3 %</td>
</tr>
<tr>
<td>VOC (CE)</td>
<td>88,25 %</td>
</tr>
<tr>
<td>Teneur en substances solides:</td>
<td>11,8 %</td>
</tr>
</tbody>
</table>
SECTION 10: Stabilité et réactivité

- 10.1 Réactivité
- 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.

SECTION 11: Informations toxicologiques

- 11.1 Informations sur les effets toxicologiques
- Toxicité aiguë
- Valeurs LD/LC50 déterminantes pour la classification:
  - 109-99-9 tétrahydrofurane
    Oral LD50 2500 mg/kg (rat)
  - 89-32-7 anhydride benzène-1,2:4,5-tétracarboxylique
    Oral LD50 2250 mg/kg (rat)
- Effet primaire d'irritation:
  - Corrosion cutanée/irritation cutanée: Pas d'effet d'irritation.
  - Lésions oculaires graves/irritation oculaire: Effet fortement irritant avec risque d'une affection grave des yeux.
  - Sensibilisation respiratoire ou cutanée: Sensibilisation possible par inhalation.
  - Sensibilisation possible par contact avec la peau.
  - Indications toxicologiques complémentaires:
    Selon le procédé de calcul de la dernière version en vigueur de la directive générale CEE sur la classification des préparations, le produit présente les dangers suivants:
    Nocif
    Irritant
  - Effets CMR (cancérogène, mutagène et toxique pour la reproduction)
    Carc. 2

SECTION 12: Informations écologiques

- 12.1 Toxicité
  - Toxicité aquatique: Pas d'autres informations importantes disponibles.
  - 12.2 Persistance et dégradabilité: Pas d'autres informations importantes disponibles.
  - 12.3 Potentiel de bioaccumulation: Pas d'autres informations importantes disponibles.
  - 12.4 Mobilité dans le sol: Pas d'autres informations importantes disponibles.
  - Autres indications écologiques:
    - Indications générales:
      Catégorie de pollution des eaux 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.
SECTION 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: Évacuation conformément aux prescriptions légales.

- Produit de nettoyage recommandé: Eau, éventuellement avec des produits de nettoyage

SECTION 14: Informations relatives au transport

- 14.1 No ONU
  ADR, IMDG, IATA UN1993

- 14.2 Nom d'expédition des Nations unies
  ADR, IMDG, IATA
  1993 LIQUIDE INFLAMMABLE, N.S.A. mélange
  FLAMMABLE LIQUID, N.O.S. mixture

- 14.3 Classe(s) de danger pour le transport
  ADR, IMDG, IATA
  Classe
  Étiquette
  3 Liquides inflammables. 3

- 14.4 Groupe d'emballage
  ADR, IMDG, IATA
  II

- 14.5 Dangers pour l'environnement:
  Marine Pollutant:
  Non

- 14.6 Précautions particulières à prendre par l'utilisateur
  Indice Kemler:
  33
  No EMS:
  F-E,S-D

- 14.7 Transport en vrac conformément à l'annexe II de la convention Marpol 73/78 et au recueil IBC
  Non applicable.

- Indications complémentaires de transport:
  ADR
  Quantités limitées (LQ): 1L
  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
Nom du produit: M-BOND 610 CURING AGENT

- IMDG
- Limited quantities (LQ) 1L
- Exempted 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: UN1993, LIQUIDE INFLAMMABLE, N.S.A. mélange, 3, II

SECTION 15: Informations réglementaires

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

SECTION 16: Autres informations

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

- Phrases importantes
  H225 Liquide et vapeurs très inflammables.
  H317 Peut provoquer une allergie cutanée.
  H318 Provoque des lésions oculaires graves.
  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 européen sur le transport des marchandises dangereuses par Route
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  Flam. Liq. 2: Flammable liquids, Hazard Category 2
  Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
  Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
  Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
  Carc. 2: Carcinogenicity, Hazard Category 2
  STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
**ABSCHNITT 1: Bezeichnung des Stoffs bzw. des Gemischs und des Unternehmens**

- **1.1 Produktidentifikator**
  - Handelsname: M-BOND 610 CURING AGENT
  - Artikelnummer: 50410-30B

- **1.2 Relevante identifizierte Verwendungen des Stoffs oder Gemischs und Verwendungen, von denen abgeraten wird**
  Keine weiteren relevanten Informationen verfügbar.

- **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: sgkck@aol.com
    www.emsdiasum.com

  Science Services GmbH
  Unterhachinger Str. 75
  81737 München Germany
  Tel: +49(0)89 18 93 668-0
  safety@scienceservices.de

  24h Giftnotruf München: +49 (0)89 19240
  Toxikologische Abteilung der II. Medizinischen Klinik
  rechts der Isar, München. - www.toxinfo.org

  - **Auskunftgebender Bereich:** Product safety department
  - **1.4 Notrufnummer:**
    ChemTrec 1-800-424-9300 Contract CCN7661
    1-703-527-3887

**ABSCHNITT 2: Mögliche Gefahren**

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

  ![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.

(Fortsetzung auf Seite 2)
**Handelsname: M-BOND 610 CURING AGENT**

### 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, asthamaartige Symptome oder Atembeschwerden verursachen.
- **H317** Kann allergische Hautreaktionen verursachen.
- **H351** Kann vermutlich Krebs erzeugen.
- **H335** Kann die Atemwege reizen.

### Sicherheitshinweise
- **P310** Sofort GIFTINFORMATIONSZENTRUM/Arzt anrufen.
- **P321** Besondere Behandlung (siehe auf diesem Kennzeichnungsetikett).
- **P405** Unter Verschluss aufbewahren.

### Zusätzliche Angaben:
- EUH019 Kann explosionsfähige Peroxide bilden.

### 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.
Handelsname: M-BOND 610 CURING AGENT

**Gefährliche Inhaltsstoffe:**

<table>
<thead>
<tr>
<th>CAS:</th>
<th>EINECS:</th>
<th>Tetratetrahydrofuran</th>
</tr>
</thead>
<tbody>
<tr>
<td>109-99-9</td>
<td>203-726-8</td>
<td>Flam. Liq. 2, H225; Carc. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H355</td>
</tr>
<tr>
<td>25-50%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAS:</th>
<th>EINECS:</th>
<th>Benzol-1,2:4,5-tetracarbonsäuredianhydrid</th>
</tr>
</thead>
<tbody>
<tr>
<td>89-32-7</td>
<td>201-898-9</td>
<td>Resp. Sens. 1, H334; Eye Dam. 1, H318; Skin Sens. 1, H317</td>
</tr>
<tr>
<td>2,5-10%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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

- **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:** Bei anhaltenden Beschwerden Arzt konsultieren.

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


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:


6.4 Verweis auf andere Abschnitte

Handelsname: M-BOND 610 CURING AGENT

Informationen zur Entsorgung siehe Abschnitt 13.

ABSCHNITT 7: Handhabung und Lagerung

· 7.1 Schutzmaßnahmen zur sicheren Handhabung
· 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): Leichtentzündlich
· 7.3 Spezifische Endanwendungen
  Keine weiteren relevanten Informationen verfügbar.

ABSCHNITT 8: Begrenzung und Überwachung der Exposition/Persönliche Schutzausrüstungen

· Zusätzliche Hinweise zur Gestaltung technischer Anlagen: Keine weiteren Angaben, siehe Abschnitt 7.
· 8.1 Zu überwachende Parameter
  · Bestandteile mit arbeitsplatzbezogenen, zu überwachenden Grenzwerten:
    109-99-9 Tetrahydrofuran
    AGW Langzeitwert: 150 mg/m³, 50 ml/m³ 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 dienten die bei der Erstellung gültigen Listen.
· 8.2 Begrenzung und Überwachung der Exposition
  · Persönliche Schutzausrüstung:
    · Allgemeine Schutz- und Hygienemaßnahmen:
Handelsname: M-BOND 610 CURING AGENT

· Atemschutz:
  Bei kurzzeitiger oder geringer Belastung Atemfiltergerät; bei intensiver bzw. langer Exposition umluftunabhängiges Atemschutzgerät verwenden.

· Handschutz:
  Schutzhandschuhe

· 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 aus mehreren Stoffen besteht, ist die Beständigkeit von Handschuhmaterialien nicht vorauszusagen 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/Schmelzbereich: Nicht bestimmt.
  Siedepunkt/Siedebereich: 66 °C

· Flammpunkt:
  -14 °C

· Entzündlichkeit (fest, gasförmig):
  Nicht anwendbar.

· Zündtemperatur:
  230 °C

· Zersetzungstemperatur:
  Nicht bestimmt.

· Selbstentzündlichkeit:
  Das Produkt ist nicht selbstentzündlich.

· Explosionsgefahren:
  Kann explosionsfähige Peroxide bilden.

· Explosionsgrenzen:
  Untere: 1,5 Vol %
Handelsname: M-BOND 610 CURING AGENT

<table>
<thead>
<tr>
<th>Obere:</th>
<th>12,0 Vol %</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Dampfdruk bei 20 °C:</td>
<td>200 hPa</td>
</tr>
<tr>
<td>· Dichte bei 20 °C:</td>
<td>0,98251 g/cm³</td>
</tr>
<tr>
<td>· Relative Dichte</td>
<td>Nicht bestimmt.</td>
</tr>
<tr>
<td>· Dampfdichte</td>
<td>Nicht bestimmt.</td>
</tr>
<tr>
<td>· Verdampfungsgeschwindigkeit</td>
<td>Nicht bestimmt.</td>
</tr>
<tr>
<td>· Löslichkeit in / Mischbarkeit mit Wasser:</td>
<td>Vollständig mischbar.</td>
</tr>
<tr>
<td>· Verteilungskoeffizient (n-Octanol/Wasser):</td>
<td>Nicht bestimmt.</td>
</tr>
<tr>
<td>· Viskosität:</td>
<td></td>
</tr>
<tr>
<td>Dynamisch:</td>
<td>Nicht bestimmt.</td>
</tr>
<tr>
<td>Kinematisch:</td>
<td>Nicht bestimmt.</td>
</tr>
<tr>
<td>· Lösemittelgehalt:</td>
<td></td>
</tr>
<tr>
<td>Organische Lösemittel:</td>
<td>88,3 %</td>
</tr>
<tr>
<td>VOC (EU)</td>
<td>88,25 %</td>
</tr>
<tr>
<td>· Festkörpergehalt:</td>
<td>11,8 %</td>
</tr>
<tr>
<td>· 9.2 Sonstige Angaben</td>
<td>Keine weiteren relevanten Informationen verfügbar.</td>
</tr>
</tbody>
</table>

ABSCHNITT 10: Stabilität und Reaktivität

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

ABSCHNITT 11: Toxikologische Angaben

- 11.1 Angaben zu toxikologischen Wirkungen
- Akute Toxizität
- Einstufungsrelevante LD/LC50-Werte:
  109-99-9 Tetrahydrofuran
  Oral LD50 2500 mg/kg (rat)
  89-32-7 Benzol-1,2:4,5-tetracarbonsäuredianhydrid
  Oral LD50 2250 mg/kg (rat)
- Primäre Reizwirkung:
- Ätz-/Reizwirkung auf die Haut: Keine Reizwirkung.
- Schwere Augenschädigung/-reizung: Starke Reizwirkung mit Gefahr ernster Augenschäden.
- Sensibilisierung der Atemwege/Haut
  Durch Einatmen Sensibilisierung möglich.
  Durch Hautkontakt Sensibilisierung möglich.
Zusätzliche toxikologische Hinweise:
Das Produkt weist aufgrund des Berechnungsverfahrens der Allgemeinen Einstufungsrichtlinie der EG für Zubereitungen in der letztgültigen Fassung folgende Gefahren auf:
Gesundheitsschädlich
Reizend
CMR-Wirkungen (krebserzeugende, erbgutverändernde und fortpflanzungsgefährdende Wirkung)
Carc. 2

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.
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: Dorf nicht zusammen mit Hausmüll entsorgt werden. Nicht in die Kanalisation gelangen lassen.
Ungereinigte Verpackungen:
Empfehlung: Entsorgung gemäß den behördlichen Vorschriften.

Abschnitt 14: Angaben zum Transport

14.1 UN-Nummer
ADR, IMDG, IATA UN1993
14.2 Ordnungsgemäße UN-Versandbezeichnung
ADR 1993 ENTZÜNDBARER FLÜSSIGER STOFF, N.A.G., Gemisch
IMDG, IATA FLAMMABLE LIQUID, N.O.S. mixture
14.3 Transportgefahrenklassen
ADR, IMDG, IATA
Klasse 3 Entzündbare flüssige Stoffe
**Handelsname:** M-BOND 610 CURING AGENT

| · Gefahrzettel | 3 |
| · 14.4 Verpackungsgruppe | II |
| · ADR, IMDG, IATA |  |
| · 14.5 Umweltgefahren: |  |
| · Marine pollutant: | Nein |
| · 14.6 Besondere Vorsichtsmaßnahmen für den Verwender | Achtung: Entzündbare flüssige Stoffe |
| · Kemler-Zahl: | 33 |
| · EMS-Nummer: | F-E,S-D |
| · 14.7 Massengutbeförderung gemäß Anhang II des MARPOL-Übereinkommens 73/78 und gemäß IBC-Code | Nicht anwendbar. |

**Transport/weitere Angaben:**

| · ADR |  |
| · Begrenzte Menge (LQ) | 1L |
| · Freigestellte Mengen (EQ) | Code: E2 |
| Höchste Nettomenge je Innenverpackung: 30 ml |
| Höchste Nettomenge je Außenverpackung: 500 ml |
| · Beförderungskategorie | 2 |
| · Tunnelbeschränkungscode | D/E |
| · IMDG |  |
| · Limited quantities (LQ) | 1L |
| · Excepted quantities (EQ) | Code: E2 |
| Maximum net quantity per inner packaging: 30 ml |
| Maximum net quantity per outer packaging: 500 ml |
| · UN "Model Regulation": | UN1993, ENTZÜNDBARER FLÜSSIGER STOFF, N.A.G., Gemisch, 3, II |

**ABSCHNITT 15: Rechtsvorschriften**

| · 15.1 Vorschriften zu Sicherheit, Gesundheits- und Umweltschutz/spezifische Rechtsvorschriften für den Staff oder das Gemisch |
| · Richtlinie 2012/18/EU |
| · Namentlich aufgeführte gefährliche Stoffe - ANHANG I Keiner der Inhaltsstoffe ist enthalten. |
| · Nationale Vorschriften: |
| · Technische Anleitung Luft: |

<table>
<thead>
<tr>
<th>Klasse</th>
<th>Anteil in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>8,8</td>
</tr>
<tr>
<td>NK</td>
<td>88,3</td>
</tr>
<tr>
<td>· Wassergefährdungsklasse: WGK 1 (Selbsteinstufung): schwach wassergefährdend.</td>
<td></td>
</tr>
<tr>
<td>· 15.2 Stoffsicherheitsbeurteilung: Eine Stoffsicherheitsbeurteilung wurde nicht durchgeführt.</td>
<td></td>
</tr>
</tbody>
</table>
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 européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Liq. 2: Flammable liquids, Hazard Category 2
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Carc. 2: Carcinogenicity, Hazard Category 2
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3
Scheda di dati di sicurezza
da sensi del regolamento 1907/2006/CE, Articolo 31

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

- 1.1 Identificatore del prodotto
- Denominazione commerciale: M-BOND 610 CURING AGENT
- Articolo numero: 50410-30B
- 1.2 Usi pertinenti identificati della sostanza o 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: sgkck@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.
  STOT SE 3  H335 Può irritare le vie respiratorie.

(continua a pagina 2)
Denominazione commerciale: M-BOND 610 CURING AGENT

- 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
    ![Pittogrammi di pericolo](image)
    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 prudenza
  - P303+P361+P353 IN CASO DI CONTATTO CON LA PELLE (o con i capelli): togliere immediatamente tutti gli indumenti contaminati. Sciacquare la pelle/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).
  - P405 Conservare sotto chiave.
  - P501 Smaltire il prodotto/recipiente in conformità con le disposizioni locali / regionali / nazionali / internazionali.

- Ulteriori dati:
  - EUH019 Può formare perossidi esplosivi.

- 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: Miscele
  - Descrizione: Miscela delle seguenti sostanze con additivi non pericolosi.

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS: 89-32-7</td>
<td>dianidride benzen-1,2:4,5-tetracarbossilica</td>
<td>EINECS: 201-898-9</td>
<td>Resp. Sens. 1, H334;</td>
<td>Eye Dam. 1, H318;</td>
<td>Skin Sens. 1, H317</td>
<td>2.5-10%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Ulteriori indicazioni: Il testo dell’avvertenza dei pericoli citati può essere appreso dal capitolo 16
SEZIONE 4: Misure di primo soccorso

4.1 Descrizione delle misure di primo soccorso
- 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:
  Se il dolore persiste consultare il medico.

4.2 Principali sintomi ed effetti, sia acuti che ritardati
Non sono disponibili altre informazioni.

4.3 Indicazione della 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.
- 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.
  Aprire e manipolare i recipienti con cautela.
  Evitare la formazione di aerosol.

  Indicazioni in caso di incendio ed esplosione:
  Tenere lontano da fonti di calore, non fumare.
  Proteggere dal calore.
  Adottare provvedimenti contro cariche elettrostatiche.
Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

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7.2 Condizioni per l'immagazzinamento 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:** Mantenerne 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 Uso finali specifici
Non sono disponibili altre informazioni.

SEZIONE 8: Controllo dell'esposizione/protezione individuale

8.1 Parametri di controllo

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

<table>
<thead>
<tr>
<th>109-99-9 tetraidrofurano</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TWA</strong></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>VL</strong></td>
</tr>
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<td></td>
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</tbody>
</table>

- **Componenti con valori limite biologici:**

<table>
<thead>
<tr>
<th>109-99-9 tetraidrofurano</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IBE</strong></td>
</tr>
<tr>
<td></td>
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<tr>
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<tr>
<td></td>
</tr>
</tbody>
</table>

- **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:**

    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.

(continua a pagina 5)
Denominazione commerciale: M-BOND 610 CURING AGENT

- Materiale dei guanti
  La scelta dei guanti adatti non dipende soltanto dal materiale bensí 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
  Temperatura di fusione/ambito di fusione: Non definito.
  Temperatura di ebollizione/ambito di ebollizione: 66 °C
- Punto di infiammabilità: -14 °C
- Infiammabilità (solido, gassoso): Non applicabile.
- Temperatura di accensione: 230 °C
- Temperatura di decomposizione: Non definito.
- Autoaccensione: Prodotto non autoinfiammabile.
- Pericolo di esplosione: Può formare perossidi esplosivi.
- Limiti di infiammabilità:
  Inferiore: 1,5 Vol %
  Superiore: 12,0 Vol %
- Tensione di vapore a 20 °C: 200 hPa
- Densità a 20 °C: 0,98251 g/cm³
- Densità relativa
- Densità del vapore
- Velocità di evaporazione
- Solubilità in/Miscibilità con acqua: Completamente miscible.
- Coefficiente di distribuzione (n-Octanol/acqua): Non definito.
- Viscosità:
  Dinamica: Non definito.
Denominazione commerciale: M-BOND 610 CURING AGENT

(SEgue da pagina 5)

<table>
<thead>
<tr>
<th>Cinematica:</th>
<th>Non definito.</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Tenore del solvente:</td>
<td></td>
</tr>
<tr>
<td>Solventi organici:</td>
<td>88,3 %</td>
</tr>
<tr>
<td>VOC (CE)</td>
<td>88,25 %</td>
</tr>
<tr>
<td>· Contenuto solido:</td>
<td>11,8 %</td>
</tr>
<tr>
<td>· 9.2 Altre informazioni</td>
<td>Non sono disponibili altre informazioni.</td>
</tr>
</tbody>
</table>

SEZIONE 10: Stabilità e reattività

· 10.1 Reattività
· 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
· Valori LD/LC50 rilevanti per la classificazione:
  109-99-9 tetraidrofurano
  Orale LD50 2500 mg/kg (rat)
  89-32-7 dianidride benzen-1,2:4,5-tetracarbossilica
  Orale LD50 2250 mg/kg (rat)
· Irritabilità primaria:
  · Corrosione/irritazione cutanea Non ha effetti irritanti.
  · Lesioni oculari gravi/irritazioni oculari gravi Forte iritazione con rischio di gravi lesioni oculari.
  · Sensibilizzazione respiratoria o cutanea
    Può provocare sensibilizzazione se inalato.
    Può provocare sensibilizzazione a contatto con la pelle.
· Ulteriori dati tossicologici:
  Il prodotto, in base al metodo di calcolo della direttiva generale della Comunità sulla classificazione dei preparati nella sua ultima versione valida, presenta i seguenti rischi:
  Nocivo
  Irritante
· Effetti CMR (cancerogenicità, mutagenicità e tossicità per la riproduzione)
  Carc. 2

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.
**Denominazione commerciale:** M-BOND 610 CURING AGENT

(Segue da pagina 6)

- **Ulteriori indicazioni in materia ambientale:**
- **Ulteriori indicazioni:**
  - Pericolosità per le acque classe 1 (D) (Auto-classificazione): 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 UN1993
- **14.2 Nome di spedizione dell’ONU**
  - ADR 1993 LIQUIDO INFIAMMABILE, N.A.S. miscela
  - IMDG, IATA FLAMMABLE LIQUID, N.O.S. mixture
- **14.3 Classi di pericolo connesso al trasporto**
  - ADR, IMDG, IATA
  - **Classe** 3 Liquidi infiammabili
  - **Etichetta** 3
- **14.4 Gruppo di imballaggio**
  - ADR, IMDG, IATA II
- **14.5 Pericoli per l'ambiente:**
  - **Marine pollutant:** No
- **14.6 Precauzioni speciali per gli utilizzatori**
  - Attenzione: Liquidi infiammabili
  - Numero Kemler: 33
  - Numero EMS: F-E,S-D
- **14.7 Trasporto di rinfuse secondo l'allegato II di MARPOL 73/78 ed il codice IBC**
  - Non applicabile.
- **Trasporto/ulteriori indicazioni:**
  - ADR
  - **Quantità limitate (LQ)** 1L
Denominazione commerciale: M-BOND 610 CURING AGENT

- Quantità esenti (EQ)
  - Codice: E2
  - Quantità massima netta per imballaggio interno: 30 ml
  - Quantità massima netta per imballaggio esterno: 500 ml

- Categoria di trasporto
  - Codice di restrizione in galleria: D/E

- IMDG
  - Limited quantities (LQ): 1L
  - Excepted quantities (EQ)
    - Code: E2
    - Maximum net quantity per inner packaging: 30 ml
    - Maximum net quantity per outer packaging: 500 ml

- UN "Model Regulation": UN1993, LIQUIDO INFIAMMABILE, N.A.S. miscela, 3, II

SEZIONE 15: Informazioni sulla regolamentazione

15.1 Norme e legislazione 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.

Disposizioni nazionali:

- Istruzione tecnica aria:
  
<table>
<thead>
<tr>
<th>Classe</th>
<th>quota in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC</td>
<td>88.3</td>
</tr>
</tbody>
</table>

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 européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - Flam. Liq. 2: Flammable liquids, Hazard Category 2
  - Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  - Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
  - Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
**Scheda di dati di sicurezza**  
ai sensi del regolamento 1907/2006/CE, Articolo 31

**Stampato il:** 24.08.2015  
**Revisione:** 24.08.2015

<table>
<thead>
<tr>
<th><strong>Denominazione commerciale:</strong></th>
<th>M-BOND 610 CURING AGENT</th>
</tr>
</thead>
</table>

- **Skin Sens. 1:** Sensitisation - Skin, Hazard Category 1  
- **Carc. 2:** Carcinogenicity, Hazard Category 2  
- **STOT SE 3:** Specific target organ toxicity - Single exposure, Hazard Category 3
1 화학제품과 회사에 관한 정보

- 제조 식별자
  - 제조명: M-BOND 610 CURING AGENT
  - 상품번호: 50410-30B
  - 해당 순물질이나 혼합물의 관련 화물용도 및 사용공지용도 추가적인 정보가 존재하지 않습니다.
  - 제조의 전고 용도와 사용상의 제한: 실험 실화 학품
- 안전데이터표(Safety Data Sheet)는 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: sgkck@aol.com
  www.emsdiasum.com
  Samchang Commercial Co., Ltd.
  Yeo Eui Do
  PO Box 1110
  Seoul, Korea
  Tel: 82 2 703 3040
  Fax: 82 2 717 3298
- 추가적인 정보 획득 가능: Product safety department
- 비상연락 전화번호: ChemTrec 1-800-424-9300 Contract CCN7661
  1-703-527-3887

2 유해성.위험성

- 순물질 또는 혼합물의 분류
  - 화염
    인화성 액체 구분2 H225 고인화성 액체 및 증기
  - 건강에 위험
    호흡기과민성 구분1 H334 흡입시 알레르기성 반응, 천식 또는 호흡 곤란을 일으킬 수 있음
    발암성 구분2 H351 암을 일으킬 것으로 의심됨
  - 피부
    심한 눈 손상/자극성 구분1 H318 눈에 심한 손상을 일으킴
  - 피부과민성 구분1 H317 알레르기성 피부 반응을 일으킬 수 있음
    표적장기-1회노출 구분3 H335 호흡기계 자극을 일으킬 수 있음

(2쪽에계속)
제품명: M-BOND 610 CURING AGENT

라벨표기 요소
- GHS 라벨 요소
  본 제품은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.
- 그림표어
  
  
GHS02 GHS05 GHS07 GHS08

신호어 위험
- 상표에명확히위험성이표시된성분 상표에명확히위험성이표시된성분 상표에명확히위험성이표시된성분 상표에명확히위험성이표시된성분:
  - tetrahydrofuran
  - benzene-1,2:4,5-tetracarboxylic dianhydride

유해 유해 유해 유해
- 위험 요소
  - 고인화성 액체
  - 눈에 심한 손상을 일으킴
  - 호흡기계 자극을 일으킬 수 있음

예방조치 예방조치 예방조치 예방조치
- 피부에 접촉 시: 모발에 밀착된 옷을 즉시 벗으시고 피부를 물/샤워로 행구시오.
- 눈에 묻은 상해는 빠르게 물로 세척 하시고, 가능하면 콘택트렌즈를 제거하시오. 계속 세척 하시오.
- 즉시 응급물을 섭취하시며 병원에 의뢰한 후 병원에서 치료를 받으시오.
- 저장장소는 잠금장치가 있는 저장장소에 저장하시오.
- 현지/지역/국가/국제 규정에 따라 내용물/용기로 노출

기타 유해성
- PBT(잔류성, 생물농축성, 독성 물질) 및 vPvB(고 잠류성, 고 생물농축성 물질) 평가 결과
  
  - PBT(잔류성, 생물농축성, 독성 물질): 해당사항 없음.
  - vPvB(고 잠류성, 고 생물농축성 물질): 해당사항 없음.

3 구성성분의 명칭 및 함유량
- 화학적 특성: 혼합물
- 설명: 무해한 첨가물이 함유된 아래에 열거된 물질로 만들어진 혼합물.
- 위험 요소:

<table>
<thead>
<tr>
<th>성분명</th>
<th>함유량</th>
<th>위험성</th>
</tr>
</thead>
<tbody>
<tr>
<td>tetrahydrofuran</td>
<td>50-100%</td>
<td>109-99-9</td>
</tr>
<tr>
<td>benzene-1,2:4,5-tetracarboxylic dianhydride</td>
<td>2.5-10%</td>
<td>89-32-7</td>
</tr>
</tbody>
</table>

4 응급조치 요령
- 응급조치요령 내용
  - 화학적 특성: 혼합물
  - 설명: 무해한 첨가물이 함유된 아래에 열거된 물질로 만들 어진 혼합물.
  - 위험 요소:

<table>
<thead>
<tr>
<th>성분명</th>
<th>함유량</th>
<th>위험성</th>
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<td>benzene-1,2:4,5-tetracarboxylic dianhydride</td>
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</tr>
</tbody>
</table>

(3쪽에계속)
제품명: M-BOND 610 CURING AGENT

(2 복사부계속)

5 폭발. 화재시 대처방법

· 소화제
  적절한 소화제:
  이산화 탄소, 진화용 석회 가루 또는 물 방사사를 사용하고, 다른 화재는 물을 분사하거나 알코올
  이 함유된 거품으로 한다.
  화학물질이나 억제용액에서 발생하는 특별 유해성 추가적인 정보가 존재하지 않습니다.
· 소방관에 대한 경고사항
  화재 전망 시 합성해의 보호구 및 예방조치: 특별한 조치가 필요없음.

6 누출 사고 시 대처방법

· 개인적 예방조치, 보호장비 및 음급처치 절차
  안전 장비 비착용하고, 무방비 의사 함은 격리 시킨다.
· 환경 관련 예방조치:
  안전 장비 비착용하고, 무방비 의사 함은 격리 시킨다.
  하수도관/해수면위의물/지하수로 도달하지 않게 한다.
· 밀폐 및 정화 방법과 소재:
  액체가 혼합된 물질(모래규조, 석회결합물, 일반 결합물, 톡반)에 흡입되도록 한다.
  항목 13에 따라 오염된 물질을 쓰레기로 처분한다.
  증분한 환기가 되도록 한다.
· 타 섹션 참조
  안전 관리에 대한 정보는 제7 장을 참고하시오.
  개인 보호 장비에 대한 정보는 제8 장을 참고하시오.
  쓰레기 처리에 대한 정보는 제13 장을 참고하시오.

7 취급 및 저장방법

· 취급:
  안전 취급을 위한 예방조치
  작업장에서는 통풍이 되고/습기 제거가 잘될수록 취급한다.
  조심스럽게 취급을 개봉하거나 취급한다.
  연무질이 형성되는 것을 피한다.
  화재: 화재 위험성 이 중 하나의 하나의 하나의 화재 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험성 위험세
안전지침서
제31조의 1907/2006/EC에 따라

제품명: M-BOND 610 CURING AGENT

· 엽니나 직사광선으로부터 보호한다.
· 구체적 최종 사용자 추가적인 정보가 존재하지 않습니다.

8 노출방지 및 개인보호구

· 협단시설 디자인에 대한 추가정보: 더 이상 의 자료는 없음. 항목 7 을 참고하시오.
· 통제 변수
· 화학물질의 노출기준, 생물학적 노출기준 등:

<table>
<thead>
<tr>
<th>109-99-9 tetrahydrofuran</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLV (ROK)</td>
</tr>
<tr>
<td>단기간의값: 280 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>장기간의값: 140 mg/m³, 50 ppm</td>
</tr>
<tr>
<td>Skin</td>
</tr>
<tr>
<td>IOELV (EU)</td>
</tr>
<tr>
<td>단기간의값: 300 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>장기간의값: 150 mg/m³, 50 ppm</td>
</tr>
<tr>
<td>Skin</td>
</tr>
<tr>
<td>PEL (USA)</td>
</tr>
<tr>
<td>장기간의값: 590 mg/m³, 200 ppm</td>
</tr>
<tr>
<td>REL (USA)</td>
</tr>
<tr>
<td>단기간의값: 735 mg/m³, 250 ppm</td>
</tr>
<tr>
<td>장기간의값: 590 mg/m³, 200 ppm</td>
</tr>
<tr>
<td>TLV (USA)</td>
</tr>
<tr>
<td>단기간의값: 295 mg/m³, 100 ppm</td>
</tr>
<tr>
<td>장기간의값: 147 mg/m³, 50 ppm</td>
</tr>
</tbody>
</table>

· 추가 정보: 제조할 당사에 유 효한 목록을 기초로 사용했다.
· 노출 통제
· 개인 보호구
· 일반적보호조치 및 위생조치:
  식료품, 음료수와 사료로부터 멀리떨어뜨려 놓는다.
  더러워지거나 오염된 물을 사용한다.
  휴식이 필요할 때마다 제로를 씻는다.
  눈과의 접촉을 피한다.
· 호흡기 보호:
  단시간 또는 경미한 오염의 경우에는 호흡 보호 장비를 사용한다. 심각한 또는 장기간 노출시에는 호흡보호 장비를 사용한다.
· 손 보호:
  보호용 장갑

장갑재질은 제품/원료/조제물투과시 퇴보시할 수 없어, 내구성이 있어야한다.
테스트를 하지 않은 경우 제품과 조제물에 적합한 장갑재질에 대한 추천이 없으며,
투과시간, 투과율의 저하를 고려해서 장갑 재료를 선택한다.

장갑의재료
적합한장갑의선정은제작업체가인정한품질의재료에 의하여야하고제조업체에따라서도다
료 선정되어야한다. 제품은 다양한 재료로부터 조제물이 이루어지는 것이라고만 안전성은에
제제에어져있을수있는것이고, 반드시 사료전에 (그안전성이) 확인되어야한다.
장갑재료의투과시간: 정확한관통시간은 두 개장갑제조자에 의하여 인지하고, 준수되어야한다.
## 9 물리화학적 특성

<table>
<thead>
<tr>
<th>특성</th>
<th>설명</th>
</tr>
</thead>
<tbody>
<tr>
<td>물리적 상태</td>
<td>액체</td>
</tr>
<tr>
<td>색</td>
<td>초록색</td>
</tr>
<tr>
<td>녹는점/이동점</td>
<td>초기 녹는점과 이동점 범위: 66 °C</td>
</tr>
<tr>
<td>인화성(고체, 기체)</td>
<td>해당사항 없음.</td>
</tr>
<tr>
<td>분해온도</td>
<td>230 °C</td>
</tr>
<tr>
<td>자기점화</td>
<td>이제품은 자연발화성이 없다.</td>
</tr>
<tr>
<td>특발위험</td>
<td>폭발가능성이 있는 가스화물이 형성될 수 있는가</td>
</tr>
<tr>
<td>인화 또는 폭발 범위의 상한/하한</td>
<td>아래로: 1.5 Vol %, 위로: 12.0 Vol %</td>
</tr>
<tr>
<td>증기압 의의점 20 ℃</td>
<td>200 hPa</td>
</tr>
<tr>
<td>밀도 의의점 20 ℃</td>
<td>0.98251 g/cm³</td>
</tr>
<tr>
<td>비중</td>
<td>알맞지 않다.</td>
</tr>
<tr>
<td>증기밀도의상한/하한</td>
<td>알맞지 않다.</td>
</tr>
<tr>
<td>용해도:</td>
<td>완전히 흡착할 수 있는</td>
</tr>
<tr>
<td>n 용한음/비 분배계수</td>
<td>알맞지 않다.</td>
</tr>
<tr>
<td>절도</td>
<td>알맞지 않다.</td>
</tr>
<tr>
<td>유기용매 유기용매</td>
<td>88.3 %</td>
</tr>
<tr>
<td>VOC (EU)</td>
<td>88.25 %</td>
</tr>
<tr>
<td>고체의 함량</td>
<td>11.8 %</td>
</tr>
</tbody>
</table>

(4쪽부터 계속)
제품명: M-BOND 610 CURING AGENT

10 안전성 및 반응성

반응성
화학적 안전성
화학적 안전성 및 유해 반응의 가능성 / 피해에 알 조건: 규정에따라사용할경우해체는없다.
유해반응 가능성 위험한반응으로는알려지지없다.

11 특성에 관한 정보

- LD/LC50-수치에 따른 분류:
  109-99-9 tetrahydrofuran
  구강의 LD50 2500 mg/kg (rat)
  89-32-7 benzene-1,2:4,5-tetracarboxylic dianhydride
  구강의 LD50 2250 mg/kg (rat)

- 임차적 자극 효과:
  피부 부식성 또는 자극성: 무자극
  심한 눈 손상 또는 자극성: 심각한안구상처의위험이있는강한자극

- 갑작화:
  호흡을통한갑각화가능성이있다.
  피부접촉을통하여갑각화가능성이있다.

- 추가 적인 특성에 관한 정보:
  이제품은유럽 공동체의 공동분류원칙의합법적인결과에근거하여최근에발효된원고에서아래위험들의사전 준비에대하여제시하고있다.
  건강에해로운 자극적인
  다음과 같은의 잠재적인 효과에 대한 정보
  CMR-효과 (암유발, 돌연변이성 그리고 생식 독성):
  발암성 구분2

12 환경에 미치는 영향

- 특히특성: 추가적인 정보가 존재하지 않습니다.
- 수생특성: 추가적인 정보가 존재하지 않습니다.
- 지속성 및 분해성 추가적인 정보가 존재하지 않습니다.

- 환경시스템에서의 행동:
- 생물철도 잠재성 추가적인 정보가 존재하지 않습니다.
- 토양내 이동성 추가적인 정보가 존재하지 않습니다.
- 추가적인 생태학 정보:
- 일반 특징:
  수질오염등급 1 (자체등급분류): 약하게수질오염이된
  홍식시키지 않은재생으로지하수나, 하천으로그리고수도망에도탈하지않을것이다.
제품명: M-BOND 610 CURING AGENT

- PBT(전투성, 생물농축성, 독성 물질) 및 vPvB(고 전투성, 고 생물농축성 물질) 평가 결과
  - PBT(전투성, 생물농축성, 독성 물질): 해당사항 없음.
  - vPvB(고 전투성, 고 생물농축성 물질): 해당사항 없음.
- 기타 부작용 추가적인 정보가 존재하지 않습니다.

13 폐기시 주의사항

- 폐기물 처리 방법
  - 권고: 생활쓰레기와 함께 처리되어서는 안된다. 하수도망으로 유입되어서는 안된다.
  - 비위생적 포장:
    - 권고: 당국의 지침에 따라 서서히 처리
    - 추천 세정제: 경우에는 따라서 세제가 점점 가늘어진다
  - 개질
    - 경고: 발화성용액

14 운송에 필요한 정보

<table>
<thead>
<tr>
<th>유엔 번호</th>
<th>ADR, IMDG, IATA</th>
<th>UN1993</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 적정 선적명</td>
<td>ADR, IMDG, IATA</td>
<td>FLAMMABLE LIQUID, N.O.S. mixture</td>
</tr>
<tr>
<td>교통 위험 클래스</td>
<td>ADR, IMDG, IATA</td>
<td></td>
</tr>
<tr>
<td>등급</td>
<td>위험물 라벨</td>
<td>3 발화성용액 3</td>
</tr>
<tr>
<td>응기등급</td>
<td>ADR, IMDG, IATA</td>
<td>II</td>
</tr>
<tr>
<td>환경적 유해물질</td>
<td>해양오염물질</td>
<td>아니오</td>
</tr>
<tr>
<td>이용자 특별 예방조치</td>
<td>경고: 발화성용액</td>
<td></td>
</tr>
<tr>
<td>위험 코드</td>
<td>EMS-번호</td>
<td>33 F-E.S-D</td>
</tr>
<tr>
<td>MARPOL73/78(선박으로부터의 해양오염방지협약) 부속서2 및 IBC Code(국제선적화물코드)에 따른 범위(bulk) 운송</td>
<td>해당사항 없음</td>
<td></td>
</tr>
</tbody>
</table>

운송/추가 정보:

<table>
<thead>
<tr>
<th>ADR</th>
<th>환경 수량 (LQ)</th>
<th>1L Code: E2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excepted quantities (EQ)</td>
<td>Maximum net quantity per inner packaging: 30 ml</td>
<td>Maximum net quantity per outer packaging: 500 ml 2</td>
</tr>
</tbody>
</table>
제품명: M-BOND 610 CURING AGENT

- **터널 제한 코드**: D/E
- **IMDG**
  - Limited quantities (LQ)
  - Exempted quantities (EQ)
  - 1L
  - Code: E2
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 500 ml
- **UN "모범 규제"**: UN1993, FLAMMABLE LIQUID, N.O.S. mixture, 3, II

### 15 법적규제현황

- **해당 순물질 또는 혼합물에 대한 안전,보건 및 환경 규제/법률**
- **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
- **GHS 라벨 요소**
  - 본 제품은 화학물질의 분류 및 표기에 관한 국제조화시스템(GHS)에 따라 분류 및 표기되었습니다.

### 주의

- 피부(모발)에 접촉 시: 모든 오염된 옷을 즉시 벗으시고 피부를 물/사위로 씻으시십시오.
  - 눈에 묻으면 몇 분간 물로 조심해서 씻으시고 가능하면 콘택트렌즈를 제거하시고 계속 씻으시오.
  - 즉시 특성물질센터/병원 연락 필요.
- 피부에 자극을 일으킬 수 있음
- 피부에 자극을 일으킬 수 있음

### 화학물질 안전성 평가

- 화학물질 안전성 평가가 수행되지 않았음

### 16 그 밖의참고사항

이보고는 우리지식에대한 오늘날의상태에대하여평가하고있다. 하지만이보고서는생산특성에관한보증은
기술하지 않았으며계약적인법률관계에기반을두고있지도않다.
제품명: M-BOND 610 CURING AGENT

<table>
<thead>
<tr>
<th>약어와 두문자어</th>
<th>설명</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Code for Dangerous Goods</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (division of the American Chemical Society)</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compounds (USA, EU)</td>
</tr>
<tr>
<td>LC50</td>
<td>Lethal concentration, 50 percent</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal dose, 50 percent</td>
</tr>
<tr>
<td>안화성 액체 구분 2</td>
<td>Flammable liquids, Hazard Category 2</td>
</tr>
<tr>
<td>심한 눈 손상/자극성 구분 1</td>
<td>Serious eye damage/eye irritation, Hazard Category 1</td>
</tr>
<tr>
<td>심한 눈 손상/자극성 구분 2</td>
<td>Serious eye damage/eye irritation, Hazard Category 2</td>
</tr>
<tr>
<td>호흡기과민성 구분 1</td>
<td>Sensitisation - Respirat., Hazard Category 1</td>
</tr>
<tr>
<td>피부과민성 구분 1</td>
<td>Sensitisation - Skin, Hazard Category 1</td>
</tr>
<tr>
<td>발암성 구분 2</td>
<td>Carcinogenicity, Hazard Category 2</td>
</tr>
<tr>
<td>표적장기-1회노출 구분 3</td>
<td>Specific target organ toxicity - Single exposure, Hazard Category 3</td>
</tr>
</tbody>
</table>
1 Наименование вещества / препарата и фирмы / предприятия

- Идентификатор продукта
- Торговое наименование: M-BOND 610 CURING AGENT
- Артикульный номер: 50410-30B
- Соответствующие установленные применения вещества или смеси и не рекомендуемые области использования
  Отсутствует какая-либо соответствующая информация.
- Применение вещества / препарата Лабораторные химикаты

- Подробная информация поставщика паспорта безопасности
- Производитель / Поставщик:
  Electron Microscopy Sciences
  1560 Industry Road
  USA-Hatfield, PA 19440
  Tel: 215-412-8400  Fax: 215-412-8450
  email: sgkck@aol.com
  www.emsdiasum.com

- Отдел, предоставляющий информацию: Product safety department
- Номер телефона экстренной связи:
  ChemTrec 1-800-424-9300 Contract CCN7661
  1-703-527-3887

2 Возможные виды опасности

- Классификация вещества или смеси
  пламя
  Воспламеняющаяся жидкость 2 H225 Легко воспламеняющаяся жидкость и пар.

- опасность для здоровья
  Респираторная сенсибилизация 1 H334 При вдыхании может вызывать аллергические или астматические симптомы или затруднение дыхания.

- канцерогенность 2 H351 Предположительно вызывает рак.

- коррозия
  Повреждение глаз 1 H318 Вызывает серьезные повреждения глаз.

- Кожная сенсибилизация 1 H317 Может вызывать аллергическую кожную реакцию.
  CTOM - однократно 3 H335 Может вызывать раздражение дыхательных путей.
  Острая токсичность 5 H303 Может нанести вред при проглатывании.

(Продолжение на странице 2)
Паспорт безопасности.
в соответствии с 1907/2006/EC, Статья 31
Дата печати: 24.08.2015
Дата редактирования: 24.08.2015

Торговое наименование: M-BOND 610 CURING AGENT

· Элементы маркировки в соответствии с CPG
Данный продукт классифицируется и маркируется в соответствии с Согласованной на глобальном уровне системой классификации и маркировки химических веществ (GHS).

· Пиктограммы, обозначающие опасности

GHS02  GHS05  GHS07  GHS08

· Сигнальное слово Опасно

· Компоненты этикетки, указывающие на опасность:
tetrahydrofuran
benzene-1,2:4,5-tetracarboxylic dianhydride

· Предупреждения об опасности
Легко воспламеняющаяся жидкость и пар.
Может нанести вред при проглатывании.
Возможны серьезные повреждения глаз.
При использовании может вызывать аллергические или астматические симптомы или затруднение дыхания.
Может вызывать аллергическую кожную реакцию.
Предположительно вызывает рак.
Может вызывать раздражение дыхательных путей.

· Меры предосторожности
ПРИ ПОПАДАНИИ В ГЛАЗА: Осторожно промыть глаза водой в течение нескольких минут. Снять контактные линзы, если вы пользуетесь ими и если это легко сделать. Продолжить промывание глаз.
ПРИ ПРОГЛАТЫВАНИИ: Немедленно обратиться в ТОКСИКОЛОГИЧЕСКИЙ ЦЕНТР/к врачу.
Применение специальных мер (см. на этом маркировочном знаке).
Хранить под замком.
Утилизировать содержимое / тару в соответствии с местными / региональными / национальными / международными предписаниями.

· Другие опасные факторы
· Результаты оценки РВТ (устойчивое биоаккумулятивное токсическое вещество) и vРvB (очень устойчивое биоаккумулятивное вещество)
· РВТ: Неприменимо.
· vРvB: Неприменимо.

3 Состав / Данные по составляющим компонентам

· Химическая характеристика: Смеси
· Описание: Смесь из веществ, перечисленных ниже, с неопасными добавками.

<table>
<thead>
<tr>
<th>Содержащиеся опасные вещества:</th>
</tr>
</thead>
<tbody>
<tr>
<td>109-99-9 tetrahydrofuran</td>
</tr>
<tr>
<td>◆ воспламеняющаяся жидкость 2, H225; ◆ канцерогенность 2, H351;</td>
</tr>
<tr>
<td>◆ Раздражение кожи 2A, H319; СТОМ - однократно 3, H335</td>
</tr>
<tr>
<td>89-32-7 benzene-1,2:4,5-tetracarboxylic dianhydride</td>
</tr>
<tr>
<td>◆ Респираторная сенсибилизация 1, H334; ◆ Повреждение глаз 1, H318;</td>
</tr>
<tr>
<td>◆ Кожная сенсибилизация 1, H317</td>
</tr>
</tbody>
</table>

(Продолжение на странице 3)
4 Меры по оказанию первой помощи

- Описание мер первой медицинской помощи
- После вдыхания:
  Обеспечить доступ свежего воздуха и для надёжности вызвать врача.
  При потере сознания (обморочном состоянии) положить пациента на бок в стабильном положении для транспортировки.
- После контакта с кожей: Немедленно промыть с помощью воды и мыла, хорошо сполоснуть.
- После контакта с глазами:
  Промыть открытый глаз под проточной водой в течение нескольких минут, затем обратиться к врачу.
- После проливания: При сохранении симптомов обратиться к врачу за консультацией.
- Указания для врача:
  - Наиболее важные симптомы и эффекты, как немедленные, так и проявляющиеся впоследствии
  Отсутствует какая-либо соответствующая информация.
  - Указание на необходимость оперативной медицинской помощи и специального режима
  Отсутствует какая-либо соответствующая информация.

5 Меры по борьбе с пожаром

- Средства пожаротушения
- Надлежащие средства тушения:
  CO2, порошковое средство для тушения или водяная струя мелкого разбрызгивания. При борьбе с крупными пожарами следует применять водяную струю мелкого разбрызгивания или спиртоустойчивую пену.
- Особые опасности, создаваемые веществом или смесь
  Отсутствует какая-либо соответствующая информация.
- Рекомендации для пожарных
  - Защитное оснащение: Нет необходимости в каких-либо специальных мерах.

6 Меры при непреднамеренном выделении (утечке)

- Меры по обеспечению личной безопасности, защитное снаряжение и порядок действий в чрезвычайной ситуации
  Надеть защитное снаряжение. Держать на отдалении незащищённых людей.
- Меры по защите окружающей среды:
  Разбавить большим количеством воды.
  Не допускать попадания в канализационную систему / поверхностные или грунтовые воды.
- Методы и материалы для локализации и очистки:
  Собирать при помощи связывающего жидкость материала (песка, кизельгура, кислотно-вяжущего средства, универсальных вяжущих средств, опилок).
  Утилизировать заражённый материал как отходы в соответствии с Пунктом 13.
  Обеспечить достаточную вентиляцию.
- Ссылки на другие разделы
  Информация по безопасному обращению - в Главе 7.
  Информация по индивидуальному защитному снаряжению - в Главе 8.
  Информация по утилизации - в Главе 13.
7 Обращение с веществом и его хранение

· Обращение с веществом:
· Меры предосторожности по безопасному обращению
  Обеспечить хорошую вентиляцию / вытяжку на рабочем месте.
  Соблюдать осторожность при открывании ёмкостей и при обращении с ними.
  Не допускать образования аэрозолей.
· Указания по защите от пожаров и взрывов:
  Держать подальше от источников воспламенения - не курить.
  Защищать от жара.
  Принять меры против электростатического заряджения.
· Условия безопасного хранения, включая несовместимости
· Хранение:
  · Требования, предъявляемые к складским помещениям и таре: Хранить в прохладном месте.
  · Указания по совместимости с другими веществами при хранении: Не требуется.
· Дальнейшие данные по условиям хранения:
  Держать ёмкости плотно закрытыми.
  Хранить в хорошо закрытой таре в прохладном и сухом месте.
  Защищать от жары и от прямых солнечных лучей.
· Характерное конечное применение (или применения)
  Отсутствует какая-либо соответствующая информация.

8 Ограничение воздействия вещества и контроль / индивидуальные средства защиты

· Дополнительные указания по структуре технических устройств:
  Никаких дополнительных данных; см. Пункт 7.
· Параметры контроля
· Составляющие компоненты с предельными значениями, требующие мониторинга на рабочих местах:

tetrahydrofuran

<table>
<thead>
<tr>
<th>PDK</th>
<th>Краткосрочное значение: 100 мг/м³ пары и/или газы</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>PDK</th>
<th>Краткосрочное значение: 5 мг/м³ аэрозоль</th>
</tr>
</thead>
</table>

· Дополнительные указания:
  В качестве основы послужили списки, являвшиеся на момент составления актуальными.
· Требования по охране труда и меры по обеспечению безопасности персонала
· Средства индивидуальной защиты:
· Общие меры по защите от воздействия и гигиене:
  Держать подальше от продуктов питания, напитков и корма для животных.
  Немедленно снять всю загрязнённую и пропитанную вредными веществами одежду.
  Мыть руки перед перерывами и по окончании работы.
  Избегать контакта с глазами.
· Защита органов дыхания:
  При кратковременном контакте с веществом или при воздействии вещества низкой концентрации
  пользоваться фильтрующим устройством для защиты органов дыхания. При интенсивном или более
  продолжительном контакте следует воспользоваться автономным устройством защиты органов
  дыхания.
Торговое наименование: M-BOND 610 CURING AGENT

- Защита рук:

Защитные перчатки (рукавицы).

Материал перчаток / рукавиц должен быть устойчивым к воздействию продукта / вещества / препарата и не пропускать их.

Ни каких рекомендаций в отношении материала перчаток / рукавиц, пригодных для применения в ходе работы с продуктом / препаратом / смесью химикатов дать нельзя, так как никаких испытаний в этом отношении не проводилось.

Выбор материала перчаток / рукавиц производится с учётом времени прорыва, степени проницаемости и эрозии.

- Материал перчаток / рукавиц

Выбор подходящих перчаток / рукавиц определяется не только материалом, но также и другими качественными особенностями, причём между различными производителями существует большая разница. Так как продукт представляет собой смесь различных веществ, то не представляется никакой возможности для расчёта устойчивости материала, из которого изготовлены перчатки / рукавицы, что вызывает необходимость переверки на предмет пригодности перед использованием.

- Период проницаемости материала перчаток / рукавиц.

Необходимо осведомиться у производителя защитных перчаток / рукавиц о точном времени прорыва и придерживаться его.

- Защита глаз:

Плотно прилегающие защитные очки

9 Физические и химические свойства

- Информация по основным физическим и химическим свойствам

- Общая информация

- Внешний вид:

- Форма: Жидкость
- Цвет: Янтарного цвета
- Запах: Эфироподобно
- Порог запаха: Не определено.

- Значение рН: Не определено.

- Изменение состояния

- Точка плавления / интервал температур плавления: Не определено.
- Точка кипения / интервал температур кипения: 66 °C

- Температура воспламенения: -14 °C

- Воспламеняемость (твёрдое, газообразное вещество): Неприменимо.

- Температура воспламенения: 230 °C

- Температура распада: Не определено.

- Самовоспламеняемость: Продукт не является самовоспламеняемым.

(Продолжение на странице 6)
Торговое наименование: M-BOND 610 CURING AGENT

(Продолжение страницы 5)

<table>
<thead>
<tr>
<th>· Взрывоопасность:</th>
<th>Может образовывать взрывчатые перекиси.</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Границы взрываемости:</td>
<td></td>
</tr>
<tr>
<td>Нижняя:</td>
<td>1,5 пол. %</td>
</tr>
<tr>
<td>Верхняя:</td>
<td>12,0 пол. %</td>
</tr>
<tr>
<td>· Давление пара при 20 °C:</td>
<td>200 гаPa</td>
</tr>
<tr>
<td>· Плотность при 20 °C:</td>
<td>0,98251 г/см³</td>
</tr>
<tr>
<td>· Относительная плотность</td>
<td>Не определено.</td>
</tr>
<tr>
<td>· Плотность пара:</td>
<td>Не определено.</td>
</tr>
<tr>
<td>· Скорость испарения:</td>
<td>Не определено.</td>
</tr>
<tr>
<td>· Растворимость в / Смешиваемость с водой:</td>
<td>Полностью смешиваемо.</td>
</tr>
<tr>
<td>· Коэффициент распределения (n-октанол / вода):</td>
<td>Не определено.</td>
</tr>
<tr>
<td>· Вязкость:</td>
<td></td>
</tr>
<tr>
<td>Динамическая:</td>
<td>Не определено.</td>
</tr>
<tr>
<td>Кинематическая:</td>
<td>Не определено.</td>
</tr>
<tr>
<td>· Содержание растворителя:</td>
<td></td>
</tr>
<tr>
<td>Органические растворители:</td>
<td>88,3 %</td>
</tr>
<tr>
<td>VOC (EC)</td>
<td>88,25 %</td>
</tr>
<tr>
<td>· Содержание твёрдых тел:</td>
<td>11,8 %</td>
</tr>
<tr>
<td>· Другая информация</td>
<td>Отсутствует какая-либо соответствующая информация.</td>
</tr>
</tbody>
</table>

10 Стабильность и реакционная способность

· Реакционная способность
· Химическая стабильность
· Термический распад / условия, которых следует избегать:
  При использовании в соответствии с предписаниями не происходит никакого распада.
· Возможность опасных реакций Неизвестно ни о каких опасных реакциях.
· Условия, вызывающие опасные изменения Отсутствует какая-либо соответствующая информация.
· Несовместимые материалы: Отсутствует какая-либо соответствующая информация.
· Опасные продукты распада: Незвестно ни о каких опасных продуктах распада.

11 Данные по токсикологии

· Информация по токсикологическому воздействию
· Острая токсичность:
· Значения LD/LC50 (летальной дозы/концентрации), необходимые для классификации:

<table>
<thead>
<tr>
<th>109-99-9 tetrahydrofuran</th>
<th>190-77-4 benzene-1,2:4,5-tetracarboxylic dianhydride</th>
</tr>
</thead>
<tbody>
<tr>
<td>Орально (через рот)</td>
<td>LD50 2500 мг/кг (rat)</td>
</tr>
<tr>
<td>Орально (через рот)</td>
<td>LD50 2250 мг/кг (rat)</td>
</tr>
<tr>
<td>· Первичное раздражющее воздействие:</td>
<td></td>
</tr>
<tr>
<td>на кожу: Нет раздражющего воздействия.</td>
<td></td>
</tr>
<tr>
<td>на глаза: Сильный раздражитель с опасностью серьёзного повреждения глаз.</td>
<td></td>
</tr>
</tbody>
</table>

(Продолжение на странице 7)
Торговое наименование: M-BOND 610 CURING AGENT

- Сенсибилизация:
  Сенсибилизация возможна посредством вдыхания.
  Сенсибилизация возможна посредством кожного контакта.
- Дополнительные токсикологические указания:
  На основании расчётного метода Всеобщей Классификационной Директивы ЕС для Препаратов в её последней (актуальной) редакции продукт представляет следующие виды опасности:
  Вредно для здоровья
  Раздражающее
- Информация по следующим группам потенциальных воздействий:
  · Канцерогенное, изменяющее наследственность и вызывающее бесплодие действие
    Канцерогенность 2

12 Экологическая информация

- Токсичность
  · Акватоксичность: Отсутствует какая-либо соответствующая информация.
  - Стоякость к деградации: Отсутствует какая-либо соответствующая информация.
- Поведение в экологических системах:
  · Биоаккумулятивный потенциал: Отсутствует какая-либо соответствующая информация.
  - Подвижность в группе: Отсутствует какая-либо соответствующая информация.
- Дополнительные экологические указания:
  · Общие указания:
    Класс вредности для воды 1 (Само-классификация): немного вредно для воды
    Не допускать попадания продукта в групповые воды, водоёмы или в канализационную систему в неразбавленном виде или в больших количествах.
  · Результаты оценки PBT (устойчивое биоаккумулятивное токсическое вещество) и vPvB (очень устойчивое биоаккумулятивное вещество)
    - PBT: Неприменимо.
    - vPvB: Неприменимо.
  · Другие вредные эффекты: Отсутствует какая-либо соответствующая информация.

13 Указания по утилизации

- Методы обработки отходов
  - Рекомендация:
    Утилизация совместно с бытовыми отходами недопустима. Не допускать попадания в канализацию.
  - Неочищенные упаковки:
    - Рекомендация:
      Утилизация должна быть осуществлена в соответствии с предписаниями компетентных служб.
  - Рекомендуемые чистящие средства: Вода - если необходимо, с добавлением чистящих средств.

14 Информация по транспорту

- Номер UN
  ADR, IMDG, IATA
  UN1993
- Собственное транспортное наименование ООН
  ADR
  1993 ЛЕГКОВОСПЛАМЕНЯЮЩАЯСЯ ЖИДКОСТЬ,
  Н.У.К смесь
  IMDG, IATA
  FLAMMABLE LIQUID, N.O.S. mixture

(Продолжение на следующей странице)
Торговое наименование: M-BOND 610 CURING AGENT

<table>
<thead>
<tr>
<th>Класс опасности транспорта</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR, IMDG, IATA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Класс</th>
<th>3 Легковоспламеняющиеся жидкости</th>
</tr>
</thead>
<tbody>
<tr>
<td>Этiqueta для опасного содержимого</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Группа упаковки</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR, IMDG, IATA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Группа упаковки</th>
</tr>
</thead>
<tbody>
<tr>
<td>II</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Экологические риски:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Загрязнитель морской среды:</td>
</tr>
<tr>
<td>Нет</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Особые меры предосторожности для пользователей</th>
</tr>
</thead>
<tbody>
<tr>
<td>Код опасности (по Кемлеру):</td>
</tr>
<tr>
<td>33</td>
</tr>
<tr>
<td>Номер EMS:</td>
</tr>
<tr>
<td>F-E.S.D</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Транспортировка навалом в соответствии с Приложением II MARPOL73/78 (Международная конвенция по предотвращению загрязнения вод с судов) и IBC Code (Международный кодекс перевозок опасных химических грузов наливом)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Неприменимо.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Транспорт / дополнительная информация:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
</tr>
<tr>
<td>Ограниченные объёмы (LQ)</td>
</tr>
<tr>
<td>1L</td>
</tr>
<tr>
<td>Код: E2</td>
</tr>
<tr>
<td>Максимальное количество нетто на внутреннюю тару: 30 мл</td>
</tr>
<tr>
<td>Максимальное количество нетто на наружную тару: 500 мл</td>
</tr>
<tr>
<td>Освобождённые количества (EQ)</td>
</tr>
<tr>
<td>Code: E2</td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 500 ml</td>
</tr>
<tr>
<td>Транспортная категория</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>Код ограничения проезда через туннели</td>
</tr>
<tr>
<td>D/E</td>
</tr>
<tr>
<td>IMDG</td>
</tr>
<tr>
<td>Limited quantities (LQ)</td>
</tr>
<tr>
<td>1L</td>
</tr>
<tr>
<td>Code: E2</td>
</tr>
<tr>
<td>Excepted quantities (EQ)</td>
</tr>
<tr>
<td>Maximum net quantity per inner packaging: 30 ml</td>
</tr>
<tr>
<td>Maximum net quantity per outer packaging: 500 ml</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>UN &quot;Model Regulation&quot;:</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 1993, ЛЕГКОВОСПЛАМЕНАЮЩАЯСЯ ЖИДКОСТЬ, Н.У.К смесь, 3, II</td>
</tr>
</tbody>
</table>

15 Предписания

- Нормы безопасности, правила охраны труда и экологические нормативы или стандарты, действующие для вещества или смеси
- Элементы маркировки в соответствии с СГС

Данный продукт классифицируется и маркируется в соответствии с Согласованной на глобальном уровне системой классификации и маркировки химических веществ (GHS).
Торговое наименование: M-BOND 610 CURING AGENT

· Пиктограммы, обозначающие опасности

GHS02  GHS05  GHS07  GHS08

· Сигнальное слово Опасно

· Компоненты этикетки, указывающие на опасность:
  tetrahydrofuran
  benzene-1,2:4,5-tetracarboxylic dianhydride

· Предупреждения об опасности
  Легко воспламеняющаяся жидкость и пар.
  Может нанести вред при проглатывании.
  Вывязывает серьёзные повреждения глаз.
  При вдыхании может вызывать аллергические или астматические симптомы или затруднение дыхания.
  Может вызывать аллергическую кожную реакцию.
  Предположительно вызывает рак.
  Может вызывать раздражение дыхательных путей.

· Меры предосторожности
  ПРИ ПОПАДАНИИ В ГЛАЗА: Осторожно промыть глаза водой в течение нескольких минут. Снять контактные линзы, если вы пользуетесь ими и если это легко сделать. Продолжить промывание глаз.
  ПРИ ПРОГЛАТАТЬВАНИИ: Немедленно обратиться в ТОКСИКОЛОГИЧЕСКИЙ ЦЕНТР/врачу.
  Применение специальных мер (см. на этом маркировочном знаке).
  Хранить под замком.
  Утилизировать содержимое/тару в соответствии с местными/региональными/национальными/международными предписаниями.

· Оценка химической безопасности: Оценка химической безопасности не проведена.

16 Прочая информация:
Данные опираются на актуальные знания, однако они не являются гарантией каких-либо конкретных свойств продукта и не устанавливают никаких действующих с юридической точки зрения договорных отношений.

· Соответствующие данные
  H225 Легко воспламеняющаяся жидкость и пар.
  H317 Может вызывать аллергическую кожную реакцию.
  H318 Вывязывает серьёзные повреждения глаз.
  H319 Вывязывает серьёзное раздражение глаз.
  H334 При вдыхании может вызывать аллергические или астматические симптомы или затруднение дыхания.
  H335 Может вызывать раздражение дыхательных путей.
  H351 Предположительно вызывает рак.

· Аббревиатуры и акронимы:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  VOC: Volatile Organic Compounds (USA, EU)
  LC50: Lethal concentration, 50 percent
Торговое наименование: M-BOND 610 CURING AGENT

LD₅₀: Lethal dose, 50 percent
Воспламеняющаяся жидкость 2: Flammable liquids, Hazard Category 2
Острая токсичность 5: Acute toxicity, Hazard Category 5
Повреждение глаз 1: Serious eye damage/eye irritation, Hazard Category 1
Раздражение кожи 2А: Serious eye damage/eye irritation, Hazard Category 2А
Респираторная сенсибилизация 1: Sensitisation - Respirat., Hazard Category 1
Кожная сенсибилизация 1: Sensitisation - Skin, Hazard Category 1
Канцерогенность 2: Carcinogenicity, Hazard Category 2
СТОМ - однократно 3: Specific target organ toxicity - Single exposure, Hazard Category 3
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 610 CURING AGENT

Número del artículo: 50410-30B

1.2 Usos pertinentes identificados de la sustancia o de la mezcla y usos desaconsejados

No existen más datos relevantes disponibles.

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
e-mail: sgkcko@aol.com
www.emsdiasum.com

Anyme
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) nº 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 )
Nombre comercial: M-BOND 610 CURING AGENT

Ficha de datos de seguridad según 1907/2006/CE, Artículo 31

date of printing 24.08.2015 Revisión: 24.08.2015

SECCIÓN 3: Composición/información sobre los componentes

· 3.2 Caracterización química: Mezclas
· Descripción: Mezcla formada por las substancias especificadas a continuación con adiciones no peligrosas.
· Componentes peligrosos:

<table>
<thead>
<tr>
<th>CAS: 109-99-9</th>
<th>CAS: 89-32-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS: 203-726-8</td>
<td>EINECS: 201-898-9</td>
</tr>
<tr>
<td>tetrahidrofurano</td>
<td>dianhídrido benceno-1,2:4,5-tetracarboxilico</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Componentes peligrosos:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flamm. Liq. 2, H225; Carc. 2, H351; Eye Irrit. 2, H319; STOT SE 3, H335</td>
</tr>
</tbody>
</table>

( se continua en página 3 )
Nombre comercial: M-BOND 610 CURING AGENT

- 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
- En caso de inhalación del producto:
  Suministrar suficiente aire fresco y, para mayor seguridad, consultar al 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:
  Limpiar los ojos abiertos durante varios minutos con agua corriente y consultar un médico.
- En caso de ingestión:
  Consultar un médico si los trastornos persisten.

- 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.

SECCIÓN 7: Manipulación y almacenamiento

- 7.1 Precauciones para una manipulación segura:
  Asegurar suficiente ventilación /aspiración en el puesto de trabajo.
  Abrir y manejar el recipiente con cuidado.
  Evitar la formación de aerosoles.
- Prevención de incendios y explosiones:
  Mantener alejadas las fuentes de encendido. No fumar.
  Proteger del calor.
Nombre comercial: M-BOND 610 CURING AGENT

Tomar medidas contra las cargas electrostáticas.

- 7.2 Condiciones de almacenamiento seguro, incluidas posibles incompatibilidades
  - Almacenamiento:
    - Exigencias con respecto al almácén 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

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

- 8.1 Parámetros de control
  - Componentes con valores límite admisibles que deben controlarse en el puesto de trabajo:
    109-99-9 tetrahidrofurano
    - LEP
      Valor de corta duración: 300 mg/m³, 100 ppm
      Valor de larga duración: 150 mg/m³, 50 ppm
      vía dérmica, VLI, VLB

- Componentes con valores límite biológicos:
  109-99-9 tetrahidrofurano
  - VLB
    2 mg/l
    Muestra: orina
    Momento de Muestreo: Final de la jornada laboral
    Indicador Biológico: Tetrahidrofurano

- 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.
    - Protección de manos:
      Guantes de protección

El material del guante deberá ser impermeable y resistente al producto / substancia / preparado.
Ante la ausencia de tests específicos, no se puede recomendar ningún material específico para guantes de protección contra el producto / preparado / mezcla de substancias 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 avaluada 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 / campo de fusión: Indeterminado.
    Punto de ebullición / campo de ebullición: 66 °C
  · Punto de inflamación:
    -14 °C
  · Inflamabilidad (sólido, gaseiforme):
    No aplicable.
  · Temperatura de ignición:
    230 °C
  · Temperatura de descomposición:
    No determinado.
  · Autoinflamabilidad:
    El producto no es autoinflamable.
  · Peligro de explosión:
    Puede formar peróxidos explosivos.
  · Límites de explosión:
    Inferior: 1,5 Vol %
    Superior: 12,0 Vol %
  · Presión de vapor a 20 °C:
    200 hPa
  · Densidad a 20 °C:
    0,98251 g/cm³
  · Densidad relativa
  · Densidad de vapor
  · Velocidad de evaporación
  · Solubilidad en / miscibilidad con agua:
    Completamente mezclable.
  · Coeficiente de reparto (n-octanol/agua):
    No determinado.
  · Viscosidad:
    Dinámica:
    Cinemática:
    No determinado.

( se continua en página 6 )
**SECCIÓN 10: Estabilidad y reactividad**

- **10.1 Reactividad**
- **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**

<table>
<thead>
<tr>
<th>Valores LD/LC50 (dosis letal /dosis letal = 50%) relevantes para la clasificación:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>109-99-9 tetrahidrofurano</strong></td>
</tr>
<tr>
<td>Oral LD50 2500 mg/kg (rat)</td>
</tr>
<tr>
<td><strong>89-32-7 dianhidrido benceno-1,2:4,5-tetracarboxilico</strong></td>
</tr>
<tr>
<td>Oral LD50 2250 mg/kg (rat)</td>
</tr>
</tbody>
</table>

- **Efecto estimulante primario:**
- **Corrosión o irritación cutáneas:** No produce irritaciones.
- **Lesiones o irritación ocular graves:** Produce irritaciones fuertes con el riesgo de perjudicar seriamente los ojos.

- **Sensibilización respiratoria o cutánea**

  Posible sensibilización al aspirarse.
  Posible sensibilización al entrar en contacto con la piel.

- **Indicaciones toxicológicas adicionales:**

  En conformidad con el procedimiento de cálculo contenido en la última versión de la Normativa General de Clasificación de la CE para Preparados, el producto tiene los siguientes riesgos:

  - **Nocivo**
  - **Irritante**
  - **Efectos CMR (carcinogenicidad, mutagenicidad y toxicidad para la reproducción)**

  Carc. 2

**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.
**Ficha de datos de seguridad**

**según 1907/2006/CE, Artículo 31**

**Fecha de impresión:** 24.08.2015  
**Revisión:** 24.08.2015

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**Nombre comercial:** M-BOND 610 CURING AGENT  
( se continua en página 6 )

**Indicaciones medioambientales adicionales:**

- **Indicaciones generales:**
  - Nivel de riesgo para el agua 1 (autoclasificación): escasamente peligroso para el agua
  - En estado no diluido o no neutralizado, no dejar que se infiltren 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 UN**
  - **ADR, IMDG, IATA**
    - UN1993

- **14.2 Designación oficial de transporte de las Naciones Unidas**
  - **ADR**
    - 1993 LÍQUIDO INFLAMABLE, N.E.P. Mezcla
  - **IMDG, IATA**
    - FLAMMABLE LIQUID, N.O.S. mixture

- **14.3 Clase(s) de peligro para el transporte**
  - **ADR, IMDG, IATA**

  - **Clase**
    - 3 Líquidos inflamables
  - **Etiqueta**
    - 3

- **14.4 Grupo de embalaje**
  - **ADR, IMDG, IATA**
    - II

- **14.5 Peligros para el medio ambiente:**
  - **Contaminante marino:**
    - No

- **14.6 Precauciones particulares para los usuarios**
  - **Número Kemler:**
    - 33
  - **Número EMS:**
    - F-E,S-D

- **14.7 Transporte a granel con arreglo al anexo II del Convenio Marpol 73/78 y del Código IBC**
  - **No aplicable.**

( se continua en página 8 )
Ficha de datos de seguridad
según 1907/2006/CE, Artículo 31

Nombre comercial: M-BOND 610 CURING AGENT

Transporte/datos adicionales:
- ADR
- Cantidades limitadas (LQ)
  - Cantidad neta máxima por envase interior: 30 ml
  - Cantidad neta máxima por embalaje exterior: 500 ml
- Cantidades exceptuadas (EQ)
  - Código: E2

Categoría de transporte: 2
Código de restricción del túnel: D/E

IMDG
- Limited quantities (LQ)
  - Código: E2
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 500 ml
- Excepted quantities (EQ)

"Reglamentación Modelo" de la UNECE:
- UN1993, LÍQUIDO INFLAMABLE, N.E.P. Mezcla, 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
- 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 contratual.

- 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 européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  - IMDG: International Maritime Code for Dangerous Goods
  - IATA: International Air Transport Association
  - GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - ELINCS: European List of Notified Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - VOC: Volatile Organic Compounds (USA, EU)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - Flam. Liq. 2: Flammable liquids, Hazard Category 2
  - Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
  - Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
  - Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
  - Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
<table>
<thead>
<tr>
<th>Nombre comercial: M-BOND 610 CURING AGENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carc. 2: Carcinogenicity, Hazard Category 2</td>
</tr>
<tr>
<td>STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3</td>
</tr>
</tbody>
</table>

( se continua en página 8 )
1: การระบุสาร/ การทำ/ และของบริษัท/ บริษัทที่เข้าเกี่ยวข้อง

- 1.1 สัญญาณทางของผิดกัน
- ชื่อทางการค้า M-BOND 610 CURING AGENT
- เลขที่บรรจุภัณฑ์ 50410-30B
- 1.2 สารหรือสารผสมที่เกี่ยวข้องที่ระบุไว้และต้องระวังไม่มีข้อมูลที่เกี่ยวข้องนอกเหนือจากนี้
- การประยุกต์ใช้สาร/ การทำ เค็มเงินรักษ์ท้องถิ่น
- 1.3 รายละเอียดของผู้จัดหาข้อมูลด้านความปลอดภัย
  - ผู้ผลิต/ผู้จัดหา
    Electron Microscopy Sciences
    1560 Industry Road
    USA-Hatfield, PA 19440
    Tel: 215-412-8400  Fax: 215-412-8450
    email: sgkcek@aol.com
    www.emsdiasum.com
  - ข้อมูลรายละเอียดเพิ่มเติมได้จาก  Product safety department
- 1.4 หมายเลขโทรศัพท์ฉุกเฉิน:
  - ChemTrec 1-800-424-9300 Contract CCN7661
  - 1-703-527-3887

2: การระบุสิ่งที่เป็นอันตราย

- 2.1 การจำแนกประเภทของสารหรือสารผสม
  - การแบ่งประเภทตามข้อบังคับ (ยีซี)
    เลขที่ 1272/2008
  - เสริมไฟ
    Flam. Liq. 2 H225 ของเหลวและไอที่ไวไฟสูง
  - สิ่งอันตรายต่อสุขภาพ
    Resp. Sens. 1 H334 อาจเป็นสาเหตุให้เกิดอาการท้องหรืออาการโรคติดเชื้อหรือนอนิจจ์สับบาทกสุทธิ์หายใจเข้า
    Carc. 2 H351 สงสัยว่าจะเป็นสาเหตุการเกิดมะเร็ง
  - การกัดกร่อน
    Eye Dam. 1 H318 เป็นสาเหตุให้เกิดอันตรายต่อดวงตาอย่างสาหัส
  - ผิวอักเสบ
    Skin Sens. 1 H317 อาจเป็นสาเหตุให้ผิวหนังแสดงอาการเจ็บ
    STOT SE 3 H335 อาจเป็นสาเหตุให้เกิดการระคายเคืองต่อระบบหายใจ

- 2.2 องค์ประกอบของฉลาก
  - ฉลากตามระเบียบ (ยีซี)
    เลขที่ 1272/2008 ผลิตภัณฑ์ได้รับการจัดประเภทและติดฉลากตามข้อบังคับของ CLP (ต่อหน้า 2)
แผ่นข้อมูลความปลอดภัย ตาม 1907/2006/EC, มาตรา 31

ชื่อทางการค้า: M-BOND 610 CURING AGENT

- ภาพสัญลักษณ์เสี่ยงที่เป็นอันตราย
  GHS02  GHS05  GHS07  GHS08

- สัญญาณสิ่งที่เป็นอันตราย
  GHS02
  GHS05
  GHS07
  GHS08

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

- ประกาศที่เป็นอันตราย
  H225: ของเหลวและไอที่ไวไฟสูง
  H318: เป็นสาเหตุให้เกิดการปวดหัวหรืออาการโรคหัดหรือหายใจลำบากหากสูดหายใจเข้า
  H334: อาจเป็นสาเหตุให้ผิวหนังแสดงอาการแพ้
  H335: สงสัยว่าจะเป็นสาเหตุการเกิดมะเร็ง
  H351: อาจเป็นสาเหตุให้เกิดการระคายเคืองต่อระบบหายใจ
  H353: อาจเกิดสารระเบิดเพอรอกไซด์
  H319: ป้องกันการสูดดม
  H317: อาจเป็นสาเหตุให้ผิวหนังแสดงอาการแพ้

- ข้อความรายละเอียดเสริม
  EUH019: อาจเกิดสารระเบิดเพอรอกไซด์
  PBT: ไม่สามารถใช้ได้
  vPvB: ไม่สามารถใช้ได้

- 3: ส่วนประกอบ/ข้อมูลรายละเอียดของส่วนผสมต่างๆ

- 3.2 คุณลักษณะทางเคมี:

- ตัวอักษร: ส่วนผสมของสารในรายการชั้นสั่งพร้อมสารเติมแต่งที่ไม่เป็นอันตราย

<table>
<thead>
<tr>
<th>ส่วนประกอบที่มีอันตราย</th>
<th>CAS:</th>
<th>EINECS:</th>
<th>ปริมาณในส่วนผสม (%):</th>
</tr>
</thead>
<tbody>
<tr>
<td>tetrahydrofuran</td>
<td>109-99-9</td>
<td>203-726-8</td>
<td>50-100%</td>
</tr>
<tr>
<td>benzene-1,2,4,5-tetracarboxylic dianhydride</td>
<td>89-32-7</td>
<td>201-898-9</td>
<td>2.5-10%</td>
</tr>
</tbody>
</table>

- ข้อมูลรายละเอียดเสริม สำหรับข้อมูลที่ระบุในรายการวิเคราะห์มีความเสียงที่อ้างอิงไว้ในส่วนที่ 16

4: มาตรการการปฐมพยาบาลเบื้องต้น

- 4.1 คำแนะนำแก่มาตรการปฐมพยาบาล

หลังจากสัมผัสอย่างน้อย 15 นาที:
หากมีการยับยั้งการหายใจ:
- ให้ยืดคอกและชักหัวและจงรักษาความเงียบ
- หาบริเวณที่มีอากาศบริสุทธิ์และเพื่อให้บริสุทธิ์ข้อมูลทางกายภาพ
- ทำการที่อยู่ได้ไม่รู้สึกว่าหายใจไม่ทันท่วงทีในท่าทางด้านข้าง
เฉพาะข้อมูลความปลอดภัย
dำ 1907/2006/EC, มาตรา 31

วันที่พิมพ์ 2015.08.24 การปรับปรุงใหม่ : 2015.08.24

ชื่อทางการค้า M-BOND 610 CURING AGENT

(ต่อหน้า 2)

5: มาตรการการดับเพลิง

- 5.1 สาเหตุที่ไข้ด้วยเพลิง
  สารดับเพลิงที่เหมาะสม
  ควบคุมผ่านการทดสอบทางชีวภาพหรือตามที่ได้รับการรับรองที่สมบูรณ์
- 5.2 สารเคมีที่อาจเกิดขึ้นจากการสร้างสิ่งผนึก
  ไม่มีสารเคมีที่เกี่ยวข้องนอกเหนือจากนี้
- 5.3 คำแนะนำการนำเนวิจราจรดับเพลิง
  อุปกรณ์ป้องกันภัย ไม่ต้องมีมาตรการพิเศษ

6: มาตรการลดอุปภัยต่อ

- 6.1 การป้องกันสารภัยต่อ ป้องกันภัยต่อ
  และขั้นตอนดำเนินการเพื่อป้องกันภัยต่อ
  ส่วนประกอบที่เกี่ยวข้องกับก๊าซที่ไม่มีผลกระทบต่อป้องกันภัย
- 6.2 การให้ไข้ด้วยสารสกัดในส่วนผสมของสารต่างๆ
  ทำให้ไข้ด้วยจากสารต่างๆ
  อย่าปล่อยให้เข้าไปในท่อหรือหลอด
- 6.3 วิธีดับเพลิงและวิธีดับเพลิง:
  ดูข้อมูลรายละเอียดในข้อมูลที่ 13
  ตรวจสอบว่ามีการระบุฉนวนดับเพลิงที่เหมาะสม
- 6.4 การอันตรายส่วนตัว:
  ดูข้อมูลรายละเอียดในข้อมูลที่ 13
  ดูข้อมูลรายละเอียดในข้อมูลที่ 7
  ดูข้อมูลรายละเอียดในข้อมูลที่ 8
  ดูข้อมูลรายละเอียดในข้อมูลที่ 13

7: การขนส่งและการจัดเก็บ

- 7.1 การป้องกันสภาวะมุกส์
  การจัดเก็บสภาวะมุกส์
  ทำการขนส่งสภาวะมุกส์ที่เหมาะสม
  ได้แก่:
  เหล่านี้:
  สารที่มีสภาวะมุกส์
  สารที่ไม่มีสภาวะมุกส์
  และขั้นตอนดับเพลิง
  ป้องกันการจัดเก็บของสารที่เป็นอันตราย
  ป้องกันการจัดเก็บของสารที่เป็นอันตราย
  ป้องกันการจัดเก็บของสารที่เป็นอันตราย
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  ป้องกันการจัดเก็บของสารที่เป็นอันตราย
  ป้องกันการจัดเก็บของสารที่เป็นอันตรทย
## 8: การควบคุมการทำงานในสภาวะบกพร่อง / การป้องกันภัยส่วนบุคคล

- ข้อมูลรายละเอียดเพิ่มเติมสำหรับการออกแบบสิ่งอำนวยความสะดวกทางเทคนิค
  ไม่มีข้อมูลเกี่ยวข้องนอกเหนือจากนี้

### 8.1 การควบคุมตัวแปร

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>109-99-9 tetrahydrofuran</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEL (USA)</td>
<td>ความระยะยาว: 590 mg/m³, 200 ppm</td>
<td></td>
</tr>
<tr>
<td>REL (USA)</td>
<td>ความระยะสั้น: 735 mg/m³, 250 ppm</td>
<td></td>
</tr>
<tr>
<td>TLV (USA)</td>
<td>ความระยะยาว: 295 mg/m³, 100 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ความระยะสั้น: 147 mg/m³, 50 ppm</td>
<td></td>
</tr>
<tr>
<td>Skin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- ข้อมูลรายละเอียดเสริม รายการถูกต้องระหว่างที่จัดทำโดยอาศัยการใช้งานเป็นหลัก

### 8.2 การควบคุมการป้องกัน

- อุปกรณ์ป้องกันภัยส่วนบุคคล
  - มาตรฐานการป้องกันและพื้นฐานในการทำงานทั่วไป
    - เก็บให้ระหว่างงานสุทธิของที่เป็นอันตรายหรืออันตรายสัมพันธ์
      - ให้ผลิตภัณฑ์ที่เป็นอันตรายและป้องกันภัยสุทธิที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะทำความสะอาดที่สูงก่อนที่จะสะอาด
### 9: คุณสมบัติทางกายภาพและเคมี

#### 9.1 ข้อมูลคุณสมบัติทางกายภาพและเคมี

- **จำนวนสารประกอบที่เป็นของแข็ง**
  - 88.25 % VOC (EC)

- **ส่วนประกอบที่เป็นสารจุดไฟติดด้วยตัวเอง**
  - 11.8 %

- **อันตรายจากการระเบิด**
  - 1.5 Vol %
  - 12.0 Vol %

### ข้อมูลทั่วไป

- **ชื่อทางการค้า**
  - M-BOND 610 CURING AGENT

- **วันที่พิมพ์**
  - 2015.08.24

- **การปรับปรุงใหม่**
  - 2015.08.24

#### ข้อมูลรายละเอียดทั่วไป

- **สี**
  - สีฟ้า

- **กลิ่น**
  - คล้ายอีเทอร์

- **เกณฑ์กลิ่น**
  - ไม่ได้กำหนด

- **ค่า pH**
  - ไม่ได้กำหนด

- **จุดหลอมเหลว / ขอบเขตการหลอมละลาย**
  - 66 °C

- **จุดเดือด / ขอบเขตการเดือด**
  - 66 °C

- **จุดวาบไฟ**
  - -14 °C

- **ความสามารถติดไฟ**
  - ผลิตภัณฑ์ไม่เป็นสารจุดไฟติดด้วยตัวเอง

- **อุณหภูมิจุดระเบิด**
  - 230 °C

- **อุณหภูมิสลายตัว**
  - ไม่ได้กำหนด

- **การเผาไหม้ด้วยตัวเอง**
  - ผลิตภัณฑ์ไม่เป็นสารจุดไฟติดด้วยตัวเอง

- **อันตรายจากการระเบิด**
  - อาจเกิดสารระเบิดเปอร์ออกไซด์

- **ขอบเขตการระเบิด**
  - 1.5 Vol %
  - 12.0 Vol %

- **ความดันไอที่ 20 °C**
  - 200 hPa

- **ความหนืด (ไดนามิค และคิเนมติก)**
  - ไม่ได้กำหนด

- **ปริมาณส่วนประกอบที่เป็นของแข็ง**
  - 88.3 %
  - 88.25 % VOC (EC)

- **ส่วนประกอบที่เป็นของแข็ง**
  - 11.8 %
แผนข้อมูลความปลอดภัย
ตาม 1907/2006/EC, มาตรา 31

ชื่อทางการค้า M-BOND 610 CURING AGENT

9.2 ข้อมูลอื่นๆ

10: ความเสถียรและความสามารถในการทำปฏิกิริยา

- 10.1 ปฏิกิริยาตอบ
- 10.2 เสถียรภาพทางเคมี
- 10.3 การสลายตัวด้วยความร้อน/เงื่อนไขที่ต้องหลีกเลี่ยง
- 10.4 ผลกระทบของการสลายตัว

11: ข้อมูลรายละเอียดเกี่ยวกับพิษวิทยา

- 11.1 ข้อมูลเกี่ยวกับผลกระทบทางพิษวิทยา
  - 11.2.2 ผลกระทบทางน้ำ
  - 11.2.3 การสะสมทางชีวภาพที่อาจเกิดขึ้น
  - 11.2.4 การเปลี่ยนแปลงในดิน

12: ข้อมูลรายละเอียดเกี่ยวกับนิเวศวิทยา

- 12.1 ความเป็นพิษ
  - 12.2 การแปรผัน
  - 12.3 การสะสมทางชีวภาพที่อาจเกิดขึ้น
  - 12.4 การเปลี่ยนแปลงในดิน

หมายเหตุ

(ต่อหน้า 7)
13: การศึกษาการกำจัด

- 13.1 วิธีการกำจัดของเสีย
  คำแนะนำ: ต้องไม่ให้ไปยังน้ำใต้จากบ้านเรือนโดยปล่อยให้ผลิตภัณฑ์เข้าสู่ระบบระบายน้ำได้
  ภาชนะบรรจุที่ยังไม่ได้ล้างที่ทำให้เกิดการปนเปื้อนต้องรีไซเคิลหรือกำจัด
  คำแนะนำ: การกำจัดจะต้องทำตามกฎระเบียบที่เป็นทางการ
  สิ่งที่เป็นอันตรายที่เกี่ยวข้องไม่ต้องทิ้งไปพร้อมกับขยะจากบ้านเรือนอย่างปลีกปละก
  สารที่เป็นพิษต่อสภาพแวดล้อม สารที่เป็นพิษต่อทะเล ไม่ใช่
  การป้องกันพิเศษสำหรับผู้ใช้: ของเหลวติดไฟได้

14: ข้อมูลรายละเอียดในการขนส่ง

- 14.1 รหัส UN
  ADR, IMDG, IATA

- 14.2 ข้อมูลอธิบายที่เหมาะสมของ UN
  ADR
  IMDG, IATA

- 14.3 ชั้นเรียนอันตรายจากการขนส่ง
  ADR, IMDG, IATA

- 14.4 กลุ่มของภาชนะบรรจุ
  ADR, IMDG, IATA

- 14.5 สิ่งที่เป็นอันตรายต่อสภาพแวดล้อม
  สารที่เป็นพิษต่อทะเล: ไม่ใช่
  สารที่เป็นพิษต่อทรัพยากร: ไม่ใช่

- 14.6 การป้องกันกีฬาส่งท่าท่าสำหรับผู้ใช้:
  รหัสควบคุมการผ่าน: 33
  หมายเลข EMS: F-E,S-D

- 14.7 การขนส่งของโมเลกุลตามภาคผนวก 2 ของ MARPOL73/78 และรหัส IBC: ไม่สามารถใช้ได้

- การขนส่ง/ข้อมูลรายละเอียดเสริม
  ADR
  ปริมาณที่จ่าย (LQ): 1L
  Exception quantities (EQ): Code: E2
  Maximum net quantity per inner packaging: 30 ml
  Maximum net quantity per outer packaging: 500 ml
  หมวดหมู่การขนส่ง: 2
  รหัสควบคุมการผ่านอุโมงค์: D/E
15: ข้อมูลรายละเอียดของกฎระเบียบ

15.1 ความปลอดภัย ศุภภาพและความระแวงของพาหนะที่มีผลกระทบโดยเฉพาะของสารหรือสารผสม
ไม่มีข้อมูลที่เกี่ยวข้องกับกฎระเบียบ

15.2 การประเมินความปลอดภัยของสารเคมี: ไม่ได้ดำเนินการตามการประเมินความปลอดภัยของสารเคมี

16: ข้อมูลรายละเอียดอื่นๆ

ข้อมูลรายละเอียดอื่นๆ ใช้ความรู้ผู้จับจ่ายซื้อเป็นหลักสากล ไม่สามารถจะใช้ในการรับรู้จากข้อมูลที่เกี่ยวข้องกับกฎระเบียบ

- วลีที่เกี่ยวข้องกับ
  H225 ของเหลวและไอที่ไวไฟสูง
  H317 อาจเป็นสาเหตุให้เกิดอาการต่อต้านทางกายสัณห์
  H318 เป็นสาเหตุให้เกิดการระคายเคืองต่อระบบหายใจ
  H319 อาจเป็นสาเหตุให้เกิดการระคายเคืองต่อระบบหายใจ
  H334 อาจเป็นสาเหตุให้เกิดการระคายเคืองต่อระบบหายใจ
  H335 อาจเป็นสาเหตุให้เกิดการระคายเคืองต่อระบบหายใจ
  H351 สงสัยว่าจะเป็นสาเหตุการเกิดมะเร็ง

- คำเตือนและข้อที่บังคับที่เกี่ยวข้อง

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
Flam. Liq. 2: Flammable liquids, Hazard Category 2
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Resp. Sens. 1: Sensitisation - Respirat., Hazard Category 1
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Carc. 2: Carcinogenicity, Hazard Category 2
STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3