Printing date 01/19/2023

Reviewed on 01/19/2023

1 Identification

- · Product identifier
- · Trade name: EMS Petrographic Epoxy Curing Agent
- Article number: 1292-C, 1292-B
- · Application of the substance / the mixture Laboratory chemicals
- · Details of the supplier of the safety data sheet
- Manufacturer/Supplier: Electron Microscopy Sciences 1560 Industry Road USA-Hatfield, PA 19440 Tel: 215-412-8400 Fax: 215-412-8450 email: sgkcck@aol.com www.emsdiasum.com
- Information department: Product safety department • Emergency telephone number: ChemTrec 1-800-424-9300 Contract <u>CCN7661</u> 1-703-527-3887

2 Hazard(s) identification

· Classification of the substance or mixture

GHS05 Corrosion

Skin Corrosion 1AH314 Causes severe skin burns and eye damage.Eye Damage 1H318 Causes serious eye damage.



Acute Toxicity - Inhalation 4 H332 Harmful if inhaled.

· Label elements

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



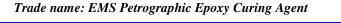
· Signal word Danger

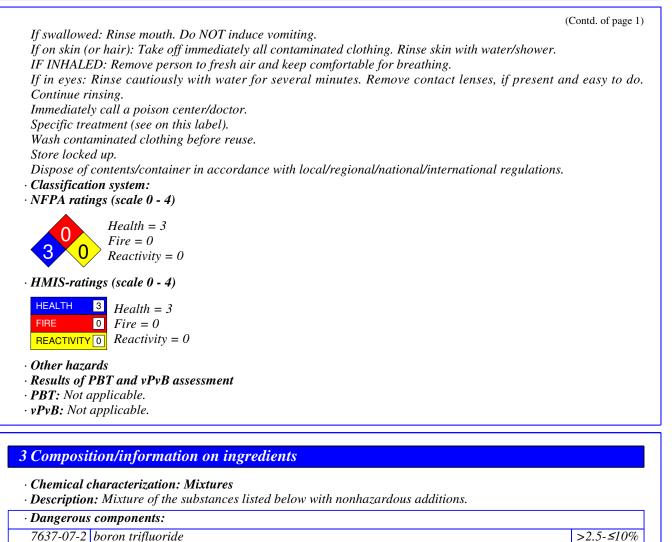
Hazard-determining components of labeling: boron trifluoride
Hazard statements Harmful if inhaled. Causes severe skin burns and eye damage.
Precautionary statements Do not breathe dusts or mists. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

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4 First-aid measures

- · Description of first aid measures
- · General information:
- Immediately remove any clothing soiled by the product.

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

· After inhalation:

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. 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: Drink copious amounts of water and provide fresh air. Immediately call a doctor.
- Information for doctor:

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

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

5 Fire-fighting measures

- · Extinguishing media
- Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- Protective equipment: Mouth respiratory protective device.

6 Accidental release measures

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

Dispose contaminated material as waste according to item 13.

- Ensure adequate ventilation.
- Reference to other sections
 See Section 7 for information on safe handling.
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.
 Protective Action Criteria for Chemicals

· PAC-1:

All components have the value 2.5 mg/m³.

· PAC-2:

All components have the value 29 mg/m³.

· PAC-3:

All components have the value 88 mg/m³.

7 Handling and storage

· Handling:

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

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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:

7637-07-2 boron trifluoride

PEL Ceiling limit value: 3 mg/m³, 1 ppm

- REL Ceiling limit value: 3 mg/m³, 1 ppm
- *TLV* Long-term value: 0.1 ppm Ceiling limit value: 0.7 ppm

• 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.

Avoid contact with the eyes and skin.

· Breathing equipment:

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



Protective gloves

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

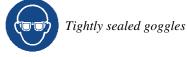
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation · Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. 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:



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Information on basic physical and	chemical properties	
General Information		
Appearance:		
Form:	Liquid	
Color:	Brown	
Odor:	Characteristic	
Odor threshold:	Not determined.	
pH-value:	Not determined.	
Change in condition		
Melting point/Melting range:	Undetermined.	
Boiling point/Boiling range:	Undetermined.	
Flash point:	Not applicable.	
Flammability (solid, gaseous):	Not flammable.	
Decomposition temperature:	Not determined.	
Auto igniting:	Product is not selfigniting.	
Danger of explosion:	Product does not present an explosion hazard.	
Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
Vapor pressure:	Not determined.	
Density at 20 °C (68 °F):	0.00299 g/cm ³ (0.02495 lbs/gal)	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with		
Water:	Not miscible or difficult to mix.	
Partition coefficient (n-octanol/wat	er): Not determined.	
Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
Solvent content:		
VOC content:	0.00 %	
	0.0 g/l / 0.00 lb/gal	
Solids content:	0.0 %	
Other information	No further relevant information available.	

10 Stability and reactivity

· Reactivity No further relevant information available.

· Chemical stability

• Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

• Possibility of hazardous reactions No dangerous reactions known.

· Conditions to avoid No further relevant information available.

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· 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:

7637-07-2 boron trifluoride

Inhalative LC50/4 h 1.18 mg/l (rat)

- · Primary irritant effect:
- on the skin: Strong caustic effect on skin and mucous membranes.
- \cdot on the eye:

Strong caustic effect.

Strong irritant with the danger of severe eye injury.

• Sensitization: No sensitizing effects known.

• Additional toxicological information:

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

Corrosive

Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· 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. Must not reach bodies of water or drainage ditch undiluted or unneutralized.

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

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• Other adverse effects No further relevant information available.

13 Disposal considerations

• Waste treatment methods

· Recommendation:

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

- · Uncleaned packagings:
- Recommendation: Disposal must be made according to official regulations.

UN-Number DOT, ADR, IMDG, IATA	UN1760
	0141700
UN proper shipping name	Connective liquide a or (Ponon tuiffuonide)
DOT ADR	Corrosive liquids, n.o.s. (Boron trifluoride) 1760 CORROSIVE LIQUID, N.O.S. (BORON TRIFLUORIDE)
IMDG, IATA	CORROSIVE LIQUID, N.O.S. (BORON TRIFLOORIDE)
Transport hazard class(es)	
DOT	
CORROSUF 8	
Class	8 Corrosive substances
Label	8
Class	8 Corrosive substances
Label	8
Packing group	
DOT, ADR, IMDG, IATA	Ι
Environmental hazards:	Not applicable.
Special precautions for user	Warning: Corrosive substances
Hazard identification number (Kemler code).	
EMS Number:	F-A,S-B
Stowage Category	B
Stowage Code	SW2 Clear of living quarters.
Transport in bulk according to Annex II of	

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• Transport/Additional information:	
· Quantity limitations	On passenger aircraft/rail: 0.5 L On cargo aircraft only: 2.5 L
4 D.D.	
· ADR · Excepted quantities (EQ)	Code: E0
Excepted quantities (EQ)	Not permitted as Excepted Quantity
· IMDG	
· Limited quantities (LQ)	0
\cdot Excepted quantities (EQ)	Code: E0
	Not permitted as Excepted Quantity
UN "Model Regulation":	UN 1760 CORROSIVE LIQUID, N.O.S. (BORON TRIFLUORIDE), 8, I

15 Regulatory information

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

Sara	
Section 355 (extremely hazardous substances):	
All ingredients are listed.	
Section 313 (Specific toxic chemical listings):	
All ingredients are listed.	
TSCA (Toxic Substances Control Act):	
All components have the value ACTIVE.	
Hazardous Air Pollutants	
None of the ingredients is listed.	
Proposition 65	
Chemicals known to cause cancer:	
None of the ingredients is listed.	
Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
Chemicals known to cause reproductive toxicity for males:	
None of the ingredients is listed.	
Chemicals known to cause developmental toxicity:	
None of the ingredients is listed.	
Carcinogenic categories	
EPA (Environmental Protection Agency)	
All components have the value I (oral).	
TLV (Threshold Limit Value)	
None of the ingredients is listed.	
NIOSH-Ca (National Institute for Occupational Safety and Health)	
None of the ingredients is listed.	

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Trade name: EMS Petrographic Epoxy Curing Agent

(Contd. of page 8) • GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS). · Hazard pictograms GHS05 GHS07 · Signal word Danger · Hazard-determining components of labeling: boron trifluoride · Hazard statements Harmful if inhaled. Causes severe skin burns and eye damage. · Precautionary statements Do not breathe dusts or mists. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Specific treatment (see on this label). Wash contaminated clothing before reuse. Store locked up. Dispose of contents/container in accordance with local/regional/national/international regulations. · Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

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

· Contact:

- Date of preparation / last revision 01/19/2023
- · Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods DOT: US Department of Transportation IATA: International Air Transport Association EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

- CAS: Chemical Abstracts Service (division of the American Chemical Society) NFPA: National Fire Protection Association (USA)
- NFPA: National Fire Protection Association (USA)
- HMIS: Hazardous Materials Identification System (USA) VOC: Volatile Organic Compounds (USA, EU)
- *LC50: Lethal concentration, 50 percent*
- LD50: Lethal dose, 50 percent
- *PBT: Persistent, Bioaccumulative and Toxic*
- *vPvB: very Persistent and very Bioaccumulative*
- NIOSH: National Institute for Occupational Safety
- OSHA: Occupational Safety Health
- TLV: Threshold Limit Value
- PEL: Permissible Exposure Limit

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REL: Recommended Exposure Limit Acute Toxicity - Inhalation 4: Acute toxicity – Category 4 Skin Corrosion 1A: Skin corrosion/irritation – Category 1A Eye Damage 1: Serious eye damage/eye irritation – Category 1 (Contd. of page 9)

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