SAFETY DATA SHEET

CHILL ICE™ 2 part B hardener

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

1.1 Product identifier: CHILL EPOXY™ part B hardener of CHILL ICE™ 2

Product code: CHILL ICE™ 2 part B

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use: Hardener

Restriction on use: For industrial use only

1.3 Details of the supplier of the safety data sheet

Company: Polymères Technologies Inc
6330 boulevard Laurier Ouest
Saint-Hyacinthe (Québec)
Canada, J2S 9A7
1 866-799-3058

24-hour Emergency Phone number (CANUTEC): 1 888 226-8832

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Serious eye damage – Category 1 | Skin irritation – Category 2 | Acute toxicity-dermal – Category 4
Acute toxicity-oral – Category 4

See toxicological information, section 11

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word: WARNING

Hazard statement(s)

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H318 Causes serious eye damage.

Precautionary statements

P264 Wash hands thoroughly after handling as well as any other part of the body that may have been exposed to the product.

P270 Do not eat, drink, or smoke when using this product.

P280 Wear protective gloves, protective clothing, eye and face protection.

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

2.3 Other hazards: No other effects shown.

3. Composition / information on ingredient(s)

3.1 Substances

Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.

3.2 Mixtures

Chemical noun	% (P/P)	Information	
Trimethylolpropane poly(oxypropylene)triamine	**80.00 – 100.00**	CAS No: EINECS No: Index No: REACH register No: CLP classification: M factor:	39423-51-3 500-105-6 N/A N/A H302 Harmful if swallowed H312 Harmful in contact with skin H315 Causes skin irritation H318 Causes serious eye damage /

The actual concentration range is withheld as a trade secret.

The full wording of hazard (H) phrases is given in section 16 of this sheet.

4. First-aid measures

4.1 Description of first-aid measures: If swallowed, irritation, any type of overexposure, or symptoms of overexposure occur during the use of the product or persists after use, immediately contact a POISON CENTER, an EMERGENCY ROOM, or a PHYSICIAN; ensure that the product safety data sheet is available.

Eye contact: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention as soon as possible.

Skin contact: Remove contaminated clothing immediately. Wash the skin with soap and water. Thoroughly wet contaminated clothing. If irritation persists, consult a doctor.

Inhalation: Move exposed person to fresh air. Keep this person warm and lying down. Loosen tight clothing such as collar, tie, belt, or waistband. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention immediately.

Ingestion: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed: This product is irritating and corrosive to

skin, eyes as well as to respiratory and digestive tracts. The severity of symptoms can vary depending on the exposure condition (contact time, product concentration, etc.). A burning sensation to the eyes is manifested by tearing, and/or conjunctivitis. The main symptoms of intoxication include headache, nausea, vomiting, weakness, loss of appetite, fatigue, sweating, fever, tachycardia, and dyspnea. In the most severe cases, convulsions, hyperthermic coma, and liver damage are reported as well as death sometimes.
Effects (acute or delayed): Possibility of permanent damage to the cornea. Possible erythema of the skin.

4.3 Indication of any immediate medical attention and special treatment needed: No specific treatment. Treat symptomatically. Contact a poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Firefighting measures

5.1 Extinguishing media: Use dry chemical, CO_2, water spray (fog), or foam.
Unsuitable extinguishing media: Jets of water can facilitate the spread of fire.

5.2 Special hazards arising from the substance or mixture: No specific hazard.
Hazardous combustion products: Carbon monoxide and carbon dioxide

5.3 Advice for firefighters: Firefighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode.

6. Accidental release measures

6.1 Personal precautions, protective equipment, and emergency procedures:

6.1.1 **For non-rescuers**
No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking, or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

6.1.2 **For emergency responders**
Equip the cleaning crew with adequate protection depending on the location of the product.

6.2 Environmental precautions: Avoid dispersal or runoff of spilled material and contact with soil, waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil, or air).

6.3 Methods and material for containment and cleaning up: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

6.4 Reference to other sections:

See section 1 for emergency contacts.

See section 8 to obtain information about appropriate individual protection equipment.

See section 13 for more information on waste treatment methods.

7. Handling and storage

7.1 Precautions for safe handling: Put on appropriate personal protective equipment (see section 8). Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Workers should wash their hands and face before eating, drinking, and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure - obtain special instructions before use. Avoid contact with eyes, skin, and clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear an appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material. Keep said container tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

7.2 Conditions for safe storage: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool, and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep said container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Incompatibility: Acids

7.3 Specific end use(s): Not available

8. Exposure controls / personal protection

8.1 Control parameters

1 – National occupational exposure limit values

Substance	CAS No	Workplace exposure limit				Comments
		Long-term exposure limit (8-hr TWA reference period)		Short-term exposure limit (15-min reference period)		
		ppm	mg/m³	ppm	mg/m³	
Trimethylolpropane poly(oxypropylene)triamine	39423-51-3	N/A	N/A	N/A	N/A	The Carc, Sen, and Sk notations are not exhaustive. Notations have been applied to substances identified in IOELV Directives. N/A

2 – Union occupational exposure limit values

EINECS No	CAS No	Common name and synonyms	8-hour TWA		15-min occupational exposure limit (STEL)		Notes
			ppm	mg/m³	ppm	mg/m³	
500-105-6	39423-51-3	Trimethylolpropane poly(oxypropylene)triamine	N/A	N/A	N/A	N/A	N/A

3 – US occupational exposure limit values

EINECS No	CAS No	Common name and synonyms	IDLH NIOSH	Regulatory limits			Recommended limits	
				OSHA PEL		California / OSHA PEL	NIOSH REL	ACGIH® 2019 TLV®
500-105-6	39423-51-3	Trimethylolpropane poly(oxypropylene)triamine		ppm	mg/m³	8-hour TWA (ST) STEL (C) Ceiling	Up to 10-hour TWA (ST) STEL (C) Ceiling	8-hour TWA (ST) STEL (C) Ceiling
			N/A	N/A	N/A	N/A	N/A	N/A

IDHL: Immediately Dangerous to Health or Life concentrations
NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limits
California / OSHA: California Division of Occupational Safety and Health
REL: Recommended Exposure Limits
ACGIH ®: American Conference of Governmental Industrial Hygienists
TLV ®: Threshold Limit Values

8.2 Exposure controls: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor, or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures: Wash hands, forearms, and face thoroughly after handling chemical products, before eating and smoking, while using the lavatory, and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eyes: DO NOT WEAR CONTACT LENSES; wear anti-splash safety goggles instead.

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties.

Respiratory: If workers are exposed to concentrations above the exposure limit, they must use appropriate, certified respirators. Use a properly fitted, air-purifying, or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product, and the safe working limits of the selected respirator.

Others: Wear protective clothing with long sleeves and appropriate safety shoes at all times.

9. Physical and chemical properties

9.1 Basic physical and chemical properties

Physical state: Liquid

Color: Clear

Odor: Light

Odor threshold: Not available

pH: 10.0

Melting/freezing point: -20°C (-4°F)

Initial boiling point/boiling range: Not applicable

Flashpoint: 218°C (424.4°F)

Flammability, in the case of solids and gases

Lower flammable/explosive limit: Not applicable

Upper flammable/explosive limit: Not applicable

Auto-ignition temperature: 320°C (608°F)

Evaporation rate: Not available

Vapor pressure: < 1mm of Hg at 20°C

Vapor density: > 1 (air=1)

Relative density: 0.998kg/L at 20°C (water=1)

Solubility: 0.25g/L

Partition coefficient n-octanol/water: Not available

Decomposition temperature: Not available

Viscosity: Not available

9.2 Other information: Not available

10. Stability and reactivity

10.1 Reactivity: Stable under recommended conditions of storage and handling.

10.2 Chemical stability: The product is chemically stable under normal conditions of use.

10.3 Possibility of hazardous reactions: No dangerous or polymerization reactions will occur under normal conditions of use.

10.4 Conditions to avoid: Keep away from incompatible products (see section 7).

10.5 Incompatible materials: This product may attack metals.

10.6 Hazardous decomposition products: Carbon monoxide and dioxide.

11. Toxicological information

11.1 Information on toxicological effects

The following tables summarize the most relevant toxicological data from ECHA, SAX'S (USA), ACGIH (USA), IARC, and the CNESST (Canadian) toxicological repertoire.

ATE_{mix}	Oral	Dermal	Inhalation gases	Inhalation vapors	Inhalation dust/mists
	578.95 mg/kg	1057.89 mg/kg	N/A	>20 mg/l	>5 mg/l

No	CAS No	Common name and synonyms	LD_{50} oral mg/kg	LD_{50} skin mg/kg	LC_{50} inhalation ppmV 4h - gases	LC_{50} inhalation mg/l 4h - vapours	LC_{50} inhalation mg/l 4h – dusts-mists
1	39423-51-3	Trimethylolpropane poly(oxypropylene)triamine	550	1005	N/A	>20.00	>5.00

Information on likely routes of exposure: This product is absorbed through the respiratory tract, skin, and gastrointestinal tract.

Aspiration hazard	N/A
Skin corrosion – skin irritation	Yes
Serious eye damage – serious eye irritation	Yes
Skin sensitization	N/A
Respiratory sensitization	N/A
Specific target organ toxicity – single exposure	N/A
Specific target organ toxicity – single exposure Category 3 Narcotic effects	N/A
Specific target organ toxicity – single exposure Category 3 Respiratory tract irritation	N/A
Specific target organ toxicity – repeated exposure	N/A

No	CAS No	Common name and synonyms	IARC	ACGIH	Mutagenicity	Effect on reproduction
1	39423-51-3	Trimethylolpropane poly(oxypropylene)triamine	N/A	N/A	No effect shown.	No effect shown.

Cancer classification under IARC (International Agency for Research on Cancer)

Group 1: carcinogenic to humans.
Group 2A: probably carcinogenic to humans.
Group 2B: possibly carcinogenic to humans.
Group 3: not classifiable as to its carcinogenicity to humans.
Group 4: probably not carcinogenic to humans.

Cancer classification under ACGIH (American Conference of Governmental Industrial Hygienists)

Group A1: confirmed human carcinogen.
Group A2: suspected human carcinogen.
Group A3: confirmed animal carcinogen with unknown relevance to humans.
Group A4: not classifiable as a human carcinogen.
Group A5: not suspected as a human carcinogen.

No data available for mixture. The product has been classified on component hazards. Classes and categories not retained at the end of classification are because the components did not meet the reporting threshold or were not hazardous.

12. Ecological information

No	CAS No	Common name and synonyms	%	12.1 Aquatic ecotoxicity	12.2 Persistent	12.3 Bio-accumulation
1	39423-51-3	Trimethylolpropane poly(oxypropylene)triamine	80.00 – 100.00	No	Yes	No

12.4 Mobility in soil: Not available

12.5 Results of PBT and vPvB assessment: Not available

12.6 Other adverse effects

No	CAS No	Common name and synonyms	%	Terrestrial ecotoxicity	Aquatic ecotoxicity short term	Aquatic ecotoxicity long term
1	39423-51-3	Trimethylolpropane poly(oxypropylene)triamine	80.00 – 100.00	No known adverse effects to the environment.	Not available	Toxic to aquatic life with long-lasting effects.

13. Disposal considerations

13.1 Waste treatment methods: The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions, and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

14. Transport information

	TDG	DOT	IMDG	IATA
14.1 UN number	3082			
14.2 Proper shipping name	*Environmentally hazardous substance, liquid, N.O.S.* (Trimethylolpropane poly(oxypropylene)triamine)			
14.3 Transport hazard class(es)	9			
14.4 Packing group	III			

Transport in bulk *(according to Annex II of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 (MARPOL 73/78), and the International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk (IBC Code)):* N/A

14.5 Environmental hazards: Yes

ADR: The identification of marine pollutants is not required for transport by ground.

IMDG: The mark 'marine pollutant' is not required when the substance is carried in quantities <= 5L or <= 5kg.

Exemption for limited quantity: 5L

14.6 Special precautions for users: Not applicable

14.7 Transport in bulk according to Annex II of Marpol and the IBC code: Not applicable

15. Regulatory information

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

This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 59).

This product does not contain any substance subjected to Regulations (EC) No 1005/2009, (EC) No 850/2004, and (EC) No 649/2012.

The customer is responsible for determining the PPE (personal protection equipment) code for this material.

15.2 Chemical safety assessment: Not available

16. Other information

Classification	Category	Hazard Statement	Justification
Acute toxicity-oral	Category 4	H302 – Harmful if swallowed	Calculation
Acute toxicity-dermal	Category 4	H312 – Harmful in contact with skin	Calculation
Skin irritation	Category 2	H315 – Causes skin irritation	pH
Serious eye damage	Category 1	H318 – Causes serious eye damage	pH

P264	Wash hands thoroughly after handling as well as any other part of the body that may have been exposed to the product.
P270	Do not eat, drink, or smoke when using this product.
P280	Wear protective gloves, protective clothing, eye and face protection.

Abbreviations and acronyms

ATE= Acute Toxicity Estimate
CLP= Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
CNESST= *Commission des Normes de l'Équité de la Santé et de la Sécurité au Travail*
DMEL= Derived Minimal Effect Level
DNEL= Derived No Effect Level
ECHA= European Chemicals Association
EUH statement= CLP-specific Hazard statement
PBT= Persistent, Bio-accumulative, and Toxic
PNEC= Predicted No Effect Concentration
RRN= REACH Registration Number
vPvB= Very Persistent and Very Bio-accumulative

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