

Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Initial preparation date: 02.12.2018

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CLF Hardener

SECTION 1: Identification

Product identifier

Product name: CLF Hardener

Product code: CLF-1

Recommended use of the product and restriction on use

Relevant identified uses: Curing agent for epoxy resins

Uses advised against: Not determined or not applicable.

Reasons why uses advised against: Not determined or not applicable.

Manufacturer or supplier details

Manufacturer:

North America

Gougeon Brothers, Inc.
100 Patterson Ave.
Bay City, MI 48706, U.S.A.
310-882-2120
safety@entropyresin.com

Supplier:

Canada

Composites One
26596 Gloucester Way Unit #105
Langley, BC V4W 4A8

Emergency telephone number:

North America

CHEMTREC

800-424-9300 US

703-527-3887 International

SECTION 2: Hazard identification

GHS classification:

Serious eye damage, category 1

Skin corrosion, category 1A

Skin sensitization, category 1

Acute toxicity (oral), category 4

Acute toxicity (inhalation), category 4

Specific target organ toxicity - single exposure, category 3, respiratory irritation

Reproductive toxicity, category 2

Chronic aquatic hazard, category 3

Label elements

Hazard pictograms:



Signal word: Danger

Hazard statements:

H318 Causes serious eye damage.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

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H302 Harmful if swallowed.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H361 Suspected of damaging fertility or the unborn child.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

P280 Wear protective gloves/protective clothing/eye protection/face protection.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P273 Avoid release to the environment.
P321 Specific treatment (see supplemental first aid instructions on this label).
P363 Wash contaminated clothing before reuse.
P304+P340+P310 If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a poison center or doctor/physician.
P301+P330+P331+P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.
P303+P361+P353+P310 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a POISON CENTER or doctor/physician.
P302+P352 If on skin: Wash with soap and water.
P333+P313 If skin irritation or a rash occurs: Get medical advice/attention.
P308+P313 If exposed or concerned: Get medical advice/attention.
P405 Store locked up.
P403+P233 Store in a well ventilated place. Keep container tightly closed.
P501 Dispose of contents and container as instructed in Section 13.

Hazards not otherwise classified: None

SECTION 3: Composition/information on ingredients

Identification	Name	Weight %
CAS number: 100-51-6	Benzyl Alcohol	30-50
CAS number: 2855-13-2	Isophorone diamine	15-25
CAS number: 2579-20-6	1,3-Cyclohexanedimethanamine	15-25
CAS number: 98-54-4	4-tert-Butylphenol	5-15

Additional Information: None

SECTION 4: First-aid measures

Description of first-aid measures

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General notes:

Not determined or not available.

After inhalation:

Move exposed individual to fresh air

Loosen clothing as necessary and position individual in a comfortable position

Maintain an unobstructed airway

Immediately call a POISON CONTROL CENTER or seek medical attention

After skin contact:

Immediately remove all contaminated clothing

Wash affected area with soap and water

Immediately call a POISON CONTROL CENTER or seek medical attention

After eye contact:

Rinse/flush exposed eye(s) gently using water for 15-20 minutes

Remove contact lens(es) if able to do so during rinsing

Immediately call a POISON CONTROL CENTER or seek medical attention

After ingestion:

Immediately call a POISON CONTROL CENTER or seek medical attention

Do not induce vomiting

Rinse mouth and then drink plenty of water

Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:

Not determined or not available.

Delayed symptoms and effects:

Not determined or not available.

Immediate medical attention and special treatment

Specific treatment:

Not determined or not available.

Notes for the doctor:

Not determined or not available.

SECTION 5: Fire-fighting measures

Extinguishing media

Suitable extinguishing media:

Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition

Unsuitable extinguishing media:

Not determined or not applicable.

Specific hazards during fire-fighting:

Thermal decomposition can lead to release of irritating gases and vapors

Special protective equipment for firefighters:

Wear protective eye wear, gloves and clothing

Refer to Section 8

Use typical firefighting equipment, self-contained breathing apparatus, special tightly sealed suit

Special precautions:

Heating causes a rise in pressure, risk of bursting and combustion

Shut off sources of ignition

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Carbon monoxide and carbon dioxide may form upon combustion

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation
Ensure air handling systems are operational
Wear protective eye wear, gloves and clothing

Environmental precautions:

Should not be released into the environment
Prevent from reaching drains, sewer or waterway

Methods and material for containment and cleaning up:

Absorb with non-combustible liquid-binding material (sand, diatomaceous earth (clay), acid binders, universal binders)
Dispose of contents / container in accordance with local regulations

Reference to other sections:

Not determined or not applicable.

SECTION 7: Handling and storage

Precautions for safe handling:

Do not eat, drink, smoke or use personal products when handling chemical substances.
Avoid breathing mist or vapor.
Use only with adequate ventilation.

Conditions for safe storage, including any incompatibilities:

Store in a cool, well-ventilated area.
Store away from foodstuffs.

SECTION 8: Exposure controls/personal protection

Only those substances with limit values have been included below.

Occupational Exposure limit values:

No occupational exposure limits noted for the ingredient(s).

Biological limit values:

No biological exposure limits noted for the ingredient(s).

Information on monitoring procedures:

Not determined or not applicable.

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor and mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

Personal protection equipment

Eye and face protection:

Safety goggles or glasses, or appropriate eye protection.

Skin and body protection:

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Select glove material impermeable and resistant to the substance.

Respiratory protection:

When necessary, use NIOSH-approved breathing equipment.

General hygienic measures:

Wash hands before breaks and at the end of work.

Avoid contact with skin, eyes and clothing.

Perform routine housekeeping.

Wash contaminated clothing before reusing.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance (physical state, color):	Yellow liquid
Odor:	Amine
Odor threshold:	Not determined or not available.
pH-value:	~ 13 (solution 100g/L at 20°C)
Melting/Freezing point:	Not determined or not available.
Boiling point/range:	> 200°C (> 392 °F)
Flash point:	> 200°C (> 392 °F)
Evaporation rate:	Not determined or not available.
Flammability (solid, gaseous):	Not determined or not available.
Explosion limit upper:	Not determined or not available.
Explosion limit lower:	Not determined or not available.
Vapor pressure:	Not determined or not available.
Vapor density:	Not determined or not available.
Density:	Not determined or not available.
Relative density:	1.06 g/cm ³ at 20°C (68 °F) (Water = 1)
Solubilities:	Partly soluble.
Partition coefficient (n-octanol/water):	Not determined or not available.
Auto/Self-ignition temperature:	Not determined or not available.
Decomposition temperature:	Not determined or not available.
Dynamic viscosity:	Not determined or not available.
Kinematic viscosity:	Not determined or not available.
Explosive properties	Not determined or not available.
Oxidizing properties	Not determined or not available.

Other information

SECTION 10: Stability and reactivity

Reactivity:

Does not react under normal conditions of use and storage.

Chemical stability:

Stable under normal conditions of use and storage.

Possibility of hazardous reactions:

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None under normal conditions of use and storage.

Conditions to avoid:

None known.

Incompatible materials:

None known.

Hazardous decomposition products:

None known.

SECTION 11: Toxicological information

Acute toxicity

Assessment: Harmful if swallowed Harmful if inhaled

Product data: No data available.

Substance data:

Name	Route	Result
Isophorone diamine	oral	LD50 - Rat - 1,030 mg/kg
1,3-Cyclohexanedimethanamine	oral	LD50 - Rat - 880 mg/kg
Benzyl Alcohol	oral	LD50 - Rat - 1,230 mg/kg
	inhalation	LD50 - Rat - > 4,178 mg/m ³

Skin corrosion/irritation

Assessment: Causes severe skin burns and eye damage

Product data: No data available.

Substance data:

Name	Result
1,3-Cyclohexanedimethanamine	Corrosive to the skin.
4-tert-Butylphenol	Irritating to the skin.
Isophorone diamine	Corrosive to the skin.

Serious eye damage/irritation

Assessment: Causes serious eye damage

Product data: No data available.

Substance data:

Name	Result
4-tert-Butylphenol	Corrosive to the eyes.

Respiratory or skin sensitization

Assessment: May cause an allergic skin reaction

Product data: No data available.

Substance data:

Name	Result
Isophorone diamine	Sensitization possible through skin contact.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

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Product data: No data available.

Substance data: No data available.

International Agency for Research on Cancer (IARC): None of the ingredients are listed.

National Toxicology Program (NTP): None of the ingredients are listed.

Germ cell mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Reproductive toxicity

Assessment: Suspected of damaging fertility or the unborn child

Product data: No data available.

Substance data:

Name	Result
4-tert-Butylphenol	Suspected human reproductive toxicant.

Specific target organ toxicity (single exposure)

Assessment: May cause respiratory irritation

Product data: No data available.

Substance data: No data available.

Specific target organ toxicity (repeated exposure)

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data: No data available.

Information on likely routes of exposure: No data available.

Symptoms related to the physical, chemical and toxicological characteristics: No data available.

Other information: No data available.

SECTION 12: Ecological information

Acute (short-term) toxicity

Assessment: Based on available data, the classification criteria are not met.

Product data: No data available.

Substance data:

Name	Result
Isophorone diamine	LC50 - Daphnia magna (Water flea) - 17.4 mg/L - 48 h
1,3-Cyclohexanedimethanamine	static test EC50 - Daphnia magna (Water flea) - 33.1 mg/l - 48 h
	static test EC50 - Pseudokirchneriella subcapitata (green algae) - 56.7 mg/l -72h

Chronic (long-term) toxicity

Product data: No data available.

Substance data: No data available.

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Persistence and degradability

Product data: No data available.

Substance data: No data available.

Bioaccumulative potential

Product data: No data available.

Substance data: No data available.

Mobility in soil

Product data: No data available.

Substance data: No data available.

Other adverse effects: No data available.



SECTION 13: Disposal considerations

Disposal methods:



It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11)

SECTION 14: Transport information

Canadian Transportation of Dangerous Goods (TDG)

UN number	2735
UN proper shipping name	Amines, liquid, corrosive, n.o.s. (Isophorone diamine)
UN transport hazard class(es)	8  
Packing group	III
Environmental hazards	
Special precautions for user	None

International Maritime Dangerous Goods (IMDG)

UN number	2735
UN proper shipping name	Amines, liquid, corrosive, n.o.s. (Isophorone diamine)
UN transport hazard class(es)	8  
Packing group	III
Environmental hazards	
Special precautions for user	None
EmS number	F-A, S-B
Excepted quantities	30mL inner pckg; 1L outer pckg
Limited quantity	5L

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)



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UN number	2735
UN proper shipping name	Amines, liquid, corrosive, n.o.s. (Isophorone diamine)
UN transport hazard class(es)	8  
Packing group	III
Environmental hazards	
Special precautions for user	None
Excepted quantities	30mL inner pckg; 1L outer pckg
Limited quantity	1L

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	
Bulk Name	None
Ship type	None
Pollution category	None

SECTION 15: Regulatory information

Canada regulations

Domestic substances list (DSL):

2855-13-2	Isophorone diamine	Listed
2579-20-6	1,3-Cyclohexanedimethanamine	Listed
100-51-6	Benzyl Alcohol	Listed
98-54-4	4-tert-Butylphenol	Listed

Non-domestic substances list (NDSL): Not determined.

SECTION 16: Other information

Abbreviations and Acronyms: None

Disclaimer:

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

NFPA: 3-0-0

HMIS: 3-0-0

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End of Safety Data Sheet