

# Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Initial preparation date: 02.01.2018

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## CPF Hardener

### SECTION 1: Identification

#### Product identifier

**Product name:** CPF Hardener

**Product code:** CPF-1

#### Recommended use of the product and restriction on use

**Relevant identified uses:** Liquid curing agent for epoxy resin

**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

Respiratory sensitization, category 1

Reproductive toxicity, category 2

#### 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

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

H361 Suspected of damaging fertility or the unborn child

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### 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
- P285 In case of inadequate ventilation wear respiratory protection
- P201 Obtain special instructions before use
- P202 Do not handle until all safety precautions have been read and understood
- P305+P351+P338+P310 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 or doctor/physician.
- 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
- 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:<br>112-24-3   | Triethylenetetramine   | 3-9      |
| CAS number:<br>26950-63-0 | Triethylenetetramine, propoxylated   | 10-30    |
| CAS number:<br>140-31-8   | 1-Piperazineethanamine   | <5       |
| CAS number:<br>2855-13-2  | Isophorone diamine   | 13-20    |
| CAS number:<br>102-71-6   | 2,2',2''-Nitrilotriethanol   | 10-25    |
| CAS number:<br>110-85-0   | Piperazine   | 2-10     |
| CAS number:<br>68082-29-1 | C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine | 33-40    |

**Additional Information:** None

## SECTION 4: First-aid measures

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### Description of first-aid measures

#### 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:

Do not use water as an extinguisher

### 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

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Shut off sources of ignition  
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:

| Country (Legal Basis) | Substance                  | Identifier | Permissible concentration  |
|-----------------------|----------------------------|------------|--|
| Canada                | 2,2',2''-Nitrilotriethanol | 102-71-6   | Alberta OELs - 8-Hour TWA Exposure Limit: 5 mg/m <sup>3</sup>                    |
|                       | 2,2',2''-Nitrilotriethanol | 102-71-6   | British Columbia OELs - 8-Hour TWA Exposure Value: 5 mg/m <sup>3</sup>           |
|                       | 2,2',2''-Nitrilotriethanol | 102-71-6   | Manitoba OELs - 8-Hour Exposure Limit (TLV-TWA): 5 mg/m <sup>3</sup>             |
|                       | 2,2',2''-Nitrilotriethanol | 102-71-6   | Ontario OELs - 8-Hour TWA Exposure Value (TWA): 0.5 ppm (3.1 mg/m <sup>3</sup> ) |
|                       | 2,2',2''-Nitrilotriethanol | 102-71-6   | Quebec OELs - 8-Hour TWA Exposure Value: 5 mg/m <sup>3</sup>                     |
|                       | 2,2',2''-Nitrilotriethanol | 102-71-6   | Saskatchewan OELs - 8 Hour Average Contamination Limit: 5 mg/m <sup>3</sup>      |

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| Country (Legal Basis) | Substance                  | Identifier | Permissible concentration   |
|-----------------------|----------------------------|------------|---|
|                       | 2,2',2''-Nitrilotriethanol | 102-71-6   | Saskatchewan OELs - 15 Minute Average Contamination Limit: 10 mg/m <sup>3</sup> |
|                       | Piperazine                 | 110-85-0   | British Columbia OELs - 8-Hour TWA Exposure Value: 0.3 mg/m <sup>3</sup>        |
|                       | Piperazine                 | 110-85-0   | British Columbia OELs - 15-minute STEL: 1 mg/m <sup>3</sup>                     |
|                       | Piperazine                 | 110-85-0   | Manitoba OELs - 8-Hour Exposure Limit (TLV-TWA): 0.03 ppm                       |
|                       | Piperazine                 | 110-85-0   | Ontario OELs - 8-Hour TWA Exposure Value (TWA): 0.03 ppm                        |

### 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:

Select glove material impermeable and resistant to the substance.

Select glove material based on rates of diffusion and degradation.

#### 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

|  |                                  |
|--|----------------------------------|
| <b>Appearance (physical state, color):</b> | Amber colored liquid             |
| <b>Odor:</b>                               | Amine                            |
| <b>Odor threshold:</b>                     | Not determined or not available. |
| <b>pH-value:</b>                           | Not determined or not available. |
| <b>Melting/Freezing point:</b>             | Not determined or not available. |
| <b>Boiling point/range:</b>                | >393°F                           |
| <b>Flash point:</b>                        | > 365°F (> 185°C)                |

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|   |                                  |
|---|----------------------------------|
| <b>Evaporation rate:</b>                        | Not determined or not available. |
| <b>Flammability (solid, gaseous):</b>           | Not determined or not available. |
| <b>Explosion limit upper:</b>                   | Not determined or not available. |
| <b>Explosion limit lower:</b>                   | Not determined or not available. |
| <b>Vapor pressure:</b>                          | Not determined or not available. |
| <b>Vapor density:</b>                           | Not determined or not available. |
| <b>Density:</b>                                 | Not determined or not available. |
| <b>Relative density:</b>                        | 1.0 @ 77°F                       |
| <b>Solubilities:</b>                            | Negligible                       |
| <b>Partition coefficient (n-octanol/water):</b> | Not determined or not available. |
| <b>Auto/Self-ignition temperature:</b>          | Not determined or not available. |
| <b>Decomposition temperature:</b>               | Not determined or not available. |
| <b>Dynamic viscosity:</b>                       | Not determined or not available. |
| <b>Kinematic viscosity:</b>                     | Not determined or not available. |
| <b>Explosive properties</b>                     | Not determined or not available. |
| <b>Oxidizing properties</b>                     | 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:

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

**Product data:** No data available.

### Substance data:

| Name                   | Route | Result                       |
|------------------------|-------|------------------------------|
| 1-Piperazineethanamine | oral  | LD50 - Chicken - 1,500 mg/kg |
| Isophorone diamine     | oral  | LD50 - Rat - 1,030 mg/kg     |

### Skin corrosion/irritation

**Assessment:** Causes severe skin burns and eye damage

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**Product data:** No data available.

### Substance data:

| Name   | Result                  |
|--|-------------------------|
| 1-Piperazineethanamine   | Corrosive to the skin.  |
| Isophorone diamine   | Corrosive to the skin.  |
| Piperazine   | Causes skin damage      |
| C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine | Causes skin irritation. |
| Triethylenetetramine   | Corrosive to the skin.  |
| Triethylenetetramine, propoxylated   | Corrosive to the skin.  |

### Serious eye damage/irritation

**Assessment:** Causes serious eye damage

**Product data:** No data available.

### Substance data:

| Name   | Result                        |
|--|-------------------------------|
| C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine | Causes serious eye damage.    |
| Triethylenetetramine, propoxylated   | Corrosive effect on the eyes. |

### Respiratory or skin sensitization

**Assessment:** May cause an allergic skin reaction May cause allergy or asthma symptoms or breathing difficulties if inhaled

**Product data:** No data available.

### Substance data:

| Name   | Result   |
|--|--|
| Piperazine   | Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals |
| 1-Piperazineethanamine   | Sensitization possible through skin contact.   |
| Isophorone diamine   | Sensitization possible through skin contact.   |
| Triethylenetetramine   | Sensitization possible through skin contact.   |
| Triethylenetetramine, propoxylated   | Sensitization possible through skin contact.   |
| C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine | May cause an allergic skin reaction.   |

### Carcinogenicity

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

**Product data:** No data available.

**Substance data:** No data available.

### International Agency for Research on Cancer (IARC):

| Name | Classification |
|------|----------------|
|------|----------------|

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| Name                       | Classification   |
|----------------------------|--|
| 2,2',2''-Nitrilotriethanol | Group 3 - Not classifiable as to its carcinogenicity to humans |

**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   |
|------------|--|
| Piperazine | Suspected of damaging fertility or the unborn child. |

### Specific target organ toxicity (single exposure)

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

**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 |
| Triethylenetetramine | LC50 - Daphnia magna (Water flea) - 33.9 mg/L - 48 h |

### Chronic (long-term) toxicity

**Product data:** No data available.

**Substance data:**



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| Name   | Result   |
|--|--|
| C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine | ErC50 - 4.34 mg/L - Pseudokirchneriella subcapitata - 72 h |
|  | NOEC - 0.5 mg/L - Pseudokirchneriella subcapitata - 72 h   |

### 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  |

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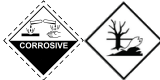
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|                     |                                |
|---------------------|--------------------------------|
| Excepted quantities | 30mL inner pckg; 1L outer pckg |
| Limited quantity    | 5L                             |

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

|                               |   |
|-------------------------------|---|
| 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):

|            |  |        |
|------------|--|--------|
| 102-71-6   | 2,2',2''-Nitrilotriethanol   | Listed |
| 110-85-0   | Piperazine   | Listed |
| 140-31-8   | 1-Piperazineethanamine   | Listed |
| 2855-13-2  | Isophorone diamine   | Listed |
| 112-24-3   | Triethylenetetramine   | Listed |
| 26950-63-0 | Triethylenetetramine, propoxylated   | Listed |
| 68082-29-1 | C18-unsatd., dimers, polymers with tall-oil fatty acids and triethylenetetramine | 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

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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**