

Safety Data Sheet

According to Canadian Hazardous Products Regulations and WHMIS 2015

Initial preparation date: 04.18.2018

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ONS Hardener

SECTION 1: Identification

Product identifier

Product name: ONS Hardener

Product code: ONS-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 1B

Skin sensitization, category 1

Respiratory sensitization, category 1

Acute toxicity (oral), category 4

Specific target organ toxicity - repeated exposure, 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.

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H302 Harmful if swallowed.

H372 Causes damage to organs through prolonged or repeated exposure.

H361 Suspected of damaging fertility or the unborn child.

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 and eyes thoroughly after handling.

P272 Contaminated work clothing should not be allowed out of the workplace.

P284 In case of inadequate ventilation wear respiratory protection.

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

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P310 Immediately call a POISON CENTER/doctor/physician.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see supplemental first aid instructions on this label).

P363 Wash contaminated clothing before reuse

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P302+P352 IF ON SKIN: Wash with plenty of water/soap.

P333+P313 If skin irritation or a rash occurs: Get medical advice/attention

P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician.

P330 Rinse mouth

P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

P314 Get medical advice/attention if you feel unwell

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: 100-51-6	Benzyl Alcohol	0.1-8
CAS number: 9046-10-0	alpha-(2-Aminomethylethyl)-omega-(2-aminomethylethoxy)-poly(oxy(methyl-1,2-ethanediyl))	28-30
CAS number: 140-31-8	1-Piperazineethanamine	<1
CAS number: 27344-41-8	Benzenesulfonic acid, 2,2'-([1,1'-biphenyl]-4,4'-diyl)di-2,1-ethenediyl)bis-, sodium salt (1:2)	<0.01
CAS number: 25620-58-0	Trimethylhexamethylenediamine	20-25
CAS number: 2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	<8

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CAS number: 110-85-0	Piperazine	0.1-2
CAS number: 68609-08-5	Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer	2-15
CAS number: 111850-23-8	Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, reaction products with 2,2,4(or 2,4,4)-trimethyl-1,6-hexanediamine	10-14
CAS number: 103-50-4	Dibenzyl ether	<0.1
CAS number: 1761-71-3	4,4'-Methylenebis(cyclohexylamine)	14-16
CAS number: 17455-13-9	1,4,7,10,13,16-Hexaoxacyclooctadecane	<0.01

Additional Information: None

SECTION 4: First-aid measures

Description of first-aid measures

General notes:

Not determined or not available.

After inhalation:

Loosen clothing as necessary and position individual in a comfortable position
Maintain an unobstructed airway
Get medical advice/attention if you feel unwell
Move exposed individual to fresh air
Immediately call a POISON CONTROL CENTER or seek medical attention

After skin contact:

Rinse affected area with soap and water
If symptoms develop or persist, seek medical attention
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 lenses, if present and easy to do
Continue rinsing
Get medical advice/attention
Remove contact lens(es) if able to do so during rinsing
Immediately call a POISON CONTROL CENTER or seek medical attention

After ingestion:

Rinse mouth and then drink plenty of water
Do not induce vomiting
Get medical advice/attention if you feel unwell
Immediately call a POISON CONTROL CENTER or seek medical attention

Most important symptoms and effects, both acute and delayed

Acute symptoms and effects:

Not determined or not available.

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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

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.

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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	Piperazine	110-85-0	British Columbia OELs - 8-Hour TWA Exposure Value: 0.3 mg/m ³
	Piperazine	110-85-0	British Columbia OELs - 15-minute STEL: 1 mg/m ³
	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.

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

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Appearance (physical state, color):	Clear to light yellow liquid
Odor:	Ammoniacal
Odor threshold:	Not determined or not available.
pH-value:	Not determined or not available.
Melting/Freezing point:	Not determined or not available.
Boiling point/range:	Not determined or not available.
Flash point:	> 100°C
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:	920 - 1000 kg/m ³ at 25 °C (typical)
Relative density:	1.0
Solubilities:	Not determined or not available.
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:	0.05 - 0.2 Pa.s at 25°C
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:

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

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Product data: No data available.

Substance data:

Name	Route	Result
3-aminomethyl-3,5,5-trimethylcyclohexylamine	oral	LD50 - Rat - 1,030 mg/kg
Benzyl Alcohol	oral	LD50 - Rat - 1,230 mg/kg
	inhalation	LD50 - Rat - > 4,178 mg/m ³
1,4,7,10,13,16-Hexaoxacyclooctadecane	oral	LD50 - Guinea pig: 59 mg/kg
1-Piperazineethanamine	oral	LD50 - Chicken - 1,500 mg/kg
4,4'-Methylenebis(cyclohexylamine)	oral	LD50 - Rat - 380 mg/kg

Skin corrosion/irritation

Assessment: Causes severe skin burns and eye damage

Product data:

No data available.

Substance data:

Name	Result
alpha-(2-Aminomethylethyl)-omega-(2-aminomethylethoxy)-poly(oxy(methyl-1,2-ethanediyl))	Corrosive to the skin.
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Corrosive to the skin.
Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer	Irritating to the skin.
1-Piperazineethanamine	Corrosive to the skin.
Piperazine	Causes skin damage
Trimethylhexamethylenediamine	Causes skin burns
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, reaction products with 2,2,4(or 2,4,4)-trimethyl-1,6-hexanediamine	Corrosive to the skin.
4,4'-Methylenebis(cyclohexylamine)	Corrosive to the skin.

Serious eye damage/irritation

Assessment: Causes serious eye damage

Product data:

No data available.

Substance data:

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Name	Result
Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer	Irritating effect on the eyes.
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, reaction products with 2,2,4(or 2,4,4)-trimethyl-1,6-hexanediamine	Corrosive effect on the eyes.
4,4'-Methylenebis(cyclohexylamine)	Corrosive effect on the eyes.
Benzenesulfonic acid, 2,2'-([1,1'-biphenyl]-4,4'-diylidene-2,1-ethenediyl)bis-, sodium salt (1:2)	Irritating 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
3-aminomethyl-3,5,5-trimethylcyclohexylamine	Sensitization possible through skin contact.
Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer	Sensitization possible through skin contact.
1-Piperazineethanamine	Sensitization possible through skin contact.
Piperazine	Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals
Trimethylhexamethylenediamine	Sensitization possible through skin contact.
Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, reaction products with 2,2,4(or 2,4,4)-trimethyl-1,6-hexanediamine	Sensitization possible through skin contact.
4,4'-Methylenebis(cyclohexylamine)	Sensitization possible through skin contact.

Carcinogenicity

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

Product data: No data available.

Substance data: No data available.

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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
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: Causes damage to organs through prolonged or repeated exposure

Product data:

No data available.

Substance data:

Name	Result
4,4'-Methylenebis(cyclohexylamine)	Ingestion - May cause damage to organs through prolonged or repeated exposure. - Liver, Musculo-skeletal system

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:

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Name	Result
3-aminomethyl-3,5,5-trimethylcyclohexylamine	LC50 - Daphnia magna (Water flea) - 17.4 mg/L - 48 h
4,4'-Methylenebis(cyclohexylamine)	EC50 - Daphnia magna - 7.07 mg/L - 48 h

Chronic (long-term) toxicity

Product data: No data available.

Substance data: No data available.

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

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	Marine Pollutant
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

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Environmental hazards	Marine Pollutant
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)

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	Marine Pollutant
Special precautions for user	None
Excepted quantities	30mL inner pckg; 1L outer pckg
Limited quantity	1L

SECTION 15: Regulatory information

Canada regulations

Domestic substances list (DSL):

9046-10-0	alpha-(2-Aminomethylethyl)-omega-(2- aminomethylethoxy)-poly(oxy(methyl-1,2-ethanediyl))	Listed
2855-13-2	3-aminomethyl-3,5,5-trimethylcyclohexylamine	Listed
100-51-6	Benzyl Alcohol	Listed
68609-08-5	Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer	Listed
140-31-8	1-Piperazineethanamine	Listed
110-85-0	Piperazine	Listed
25620-58-0	Trimethylhexamethylenediamine	Listed
111850-23-8	Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane, reaction products with 2,2,4(or 2,4,4)-trimethyl-1,6-hexanediamine	Listed
103-50-4	Dibenzyl ether	Listed
1761-71-3	4,4'-Methylenebis(cyclohexylamine)	Listed
17455-13-9	1,4,7,10,13,16-Hexaoxacyclooctadecane	Listed
27344-41-8	Benzenesulfonic acid, 2,2'-([1,1'-biphenyl]-4,4'-diyldi-2,1-ethenediyl)bis-, sodium salt (1:2)	Listed

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

SECTION 16: Other information

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Abbreviations and Acronyms: None

Disclaimer:

This product has been classified in accordance with hazard criteria of the Hazardous Products Regulation and the SDS contains all the information required by the Hazardous Products Regulation. 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

Initial preparation date: 04.18.2018

End of Safety Data Sheet