according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

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Super Sap CLS Hardener

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



1.1 Product identifier

Material name: Super Sap CLS Hardener

Product code: 12-CLS

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

agent for epoxy resin

1.3 Details of the manufacturer/supplier of the safety data sheet

Manufacturer: Supplier:

Entropy Resins, Inc. Europe / Africa / Middle East: Ferrer Dalmau 30621 San Antonio St. Ferrer-Dalmau / Rosalia de Castro 21 08025

Hayward, CA 94544 USA Barcelona, Spain +34 93 487 40 15 info@entropyresins.com info@entropyresins.eu

Emergency telephone number:

3 E Company Emergency

International shipments (Outside of USA and China): +1-760-476-3962

Shipments within the United States: 1-760-476-3962

For shipments within China: 0532-8388-9090 (National Chemical Emergency)

2 Hazards identification

2.1 Classification of the substance or mixture:

In compliance with EC regulation No. 1272/2008, 29CFR1910/1200 and GHS Rev. 3 and amendments.

Acute toxicity (oral), category 4.

Skin corrosion, category 1B.

Serious eye damage, category 1.

Skin sensitization, category 1.

Respiratory sensitization, category 1.

Chronic aquatic hazard, category 3.

Hazard-determining components of labeling:

3-aminomethyl-3,5,5-trimethylcyclohexylamine

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxiran

Poly(propylene glycol) bis(2-aminopropyl ether)

piperazine (solid)

Aminoethylpiperazine

trimethylhexane-1,6-diamine

Benzyl Alcohol

2.2 Label elements

Hazard pictograms:

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

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Signal word: Danger Hazard statements:

H290 May be corrosive to metals.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

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

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements:

P234 Keep only in original container.

P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P264 Wash skin thoroughly after handling.

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

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

P273 Avoid release to the environment.

P285 In case of inadequate ventilation wear respiratory protection.

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.

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.

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).

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

P363 Wash contaminated clothing before reuse.

P390 Absorb spillage to prevent material damage.

P406 Store in corrosive resistant stainless steel container with a resistant inner liner.

P501 Dispose of contents and container as instructed in Section 13.

2.3 Other hazards: None known

Information concerning particular hazards for humans and environment:

The product has to be labeled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.

Classification system:

The classification is according to EC regulation No. 1272/2008, 29CFR1910/1200 and GHS Rev. 3 and amendments, and extended by company and literature data. The classification is in accordance with the latest editions of international substances lists, and is supplemented by information from technical literature and by information provided by the company.

3 Composition/information on ingredients

3.1 Chemical characterization: None

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

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3.2 Description: None

3.3 Hazardous components (percentages by weight)

Identification	Name	Classification	Wt. %
CAS number: 2855-13-2	Isophorone diamine	Acute Tox. 4; H302 Acute Tox. 4; H312 Skin Sens. 1; H317 Skin Corr. 1B; H314 Aquatic Chronic 3; H412	40
CAS number: 55492-52-9	Phenol, 2,2'-methylenebis-, polymer with (chloromethyl)oxirane	Skin Sens. 1; H317 Skin Irrit. 2; H315 Eye Irrit. 2; H319 Aquatic Chronic 2; H411	5-20
CAS number: 9046-10-0	Propylene glycol diamine, 2-amino-, diether with Propylene	Skin Corr. 1B; H314	5-20
CAS number: 68609-97-2	Alkyl (C12-14) glycidyl ether	Skin Sens. 1; H317 Skin Irrit. 2 ; H315 Eye Irrit. 2; H319	<10
CAS number: 110-85-0	Piperazine		<10
CAS number: 140-31-8	Aminoethylpiperazine	Acute Tox. 4; H302 Acute Tox. 3; H311 Skin Sens. 1; H317 Skin Corr. 1B; H314 Aquatic Chronic 3; H412	<5
CAS number: 25620-58-0	Trimethylhexamethylenediamine	Acute Tox. 4; H302 Skin Sens. 1; H317 Skin Corr. 1B; H314 Aquatic Chronic 3; H412	<5
CAS number: 100-51-6	Benzyl Alcohol	Acute Tox. 4; H302 Acute Tox. 4; H332 Eye Irrit. 2; H319 Aquatic Acute 2; H401	<5
CAS number: 102-71-6	Triethanolamine		<5
CAS number: 68889-71-4	Octahydro-4,7-methano-1H-indenedimethylamine		<1

3.4 Additional information: None.

4 First aid measures

4.1 Description of first aid measures

General information: None.

After inhalation:

Move exposed individual to fresh air.

Loosen clothing as necessary and position individual in a comfortable position.

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

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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 swallowing:

Immediately call a POISON CONTROL CENTER or seek medical attention.

Do not induce vomiting.

Rinse mouth and then drink plenty of water.

4.2 Most important symptoms and effects, both acute and delayed:

None

4.3 Indication of any immediate medical attention and special treatment needed:

No additional information.

5 Firefighting measures

5.1 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.

5.2 Special hazards arising from the substance or mixture:

Thermal decomposition can lead to release of irritating gases and vapors.

5.3 Advice for firefighters

Protective equipment:

Wear protective eye wear, gloves and clothing.

Refer to Section 8.

5.4 Additional information:

Avoid inhaling gases, fumes, dust, mist, vapor and aerosols.

Avoid contact with skin, eyes and clothing.

6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Ensure adequate ventilation.

Ensure air handling systems are operational.

6.2 Environmental precautions:

Should not be released into the environment.

Prevent from reaching drains, sewer or waterway.

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

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6.3 Methods and material for containment and cleaning up:

Wear protective eye wear, gloves and clothing. Absorb spillage to prevent material damage.

6.4 Reference to other sections: None

7 Handling and storage

7.1 Precautions for safe handling:

Do not eat, drink, smoke or use personal products when handling chemical substances.

Avoid breathing mist or vapor.

Do not add water to corrosives as this can cause a violent reaction.

7.2 Conditions for safe storage, including any incompatibilities:

Store in a cool, well-ventilated area.

Store in corrosive resistant container with a resistant inner lining.

Keep away from incompatibles such as oxidizing agents, organic materials, metals, alkalis and moisture.

7.3 Specific end use(s): No additional information.

8 Exposure controls/personal protection







8.1 Control parameters:

100-51-6, Benzyl Alcohol, WEEL TWA 10.0 ppm. 102-71-6, 2,2',2''-nitrilotriethanol, ACGIH TWA 5mg/m3.

8.2 Exposure controls

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use or handling.

Respiratory protection:

When necessary, use NIOSH-approved breathing equipment.

Protection of skin:

Select glove material impermeable and resistant to the substance.

Eve protection:

Safety goggles or glasses, or appropriate eye protection.

General hygienic measures:

Wash hands before breaks and at the end of work.

Avoid contact with skin, eyes and clothing.

9 Physical and chemical properties

9.1 Information on basic physical and chemical properties

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

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Appearance (physical state, color):	Clear to light yellow liquid.	Explosion limit lower: Explosion limit upper:	Not determined or not available. Not determined or not available.
Odor:	Not determined or not available.	Vapor pressure:	Not determined or not available.
Odor threshold:	Not determined or not available.	Vapor density:	Not determined or not available.
pH-value:	Not determined or not available.	Relative density:	Not determined or not available.
Melting/Freezing point:	Not determined or not available.	Solubilities:	Not determined or not available.
Boiling point/range:	Not determined or not available.	Partition coefficient (noctanol/water):	Not determined or not available.
Flash point (closed cup):	Not determined or not available.	Auto/Self-ignition temperature:	Not determined or not available.
Evaporation rate:	Not determined or not available.	Decomposition temperature:	Not determined or not available.
Flammability (solid, gaseous):	Not determined or not available.	Dynamic viscosity:	Not determined or not available.
Density:	1.0-1.5 g/cm³ @ 20°C	Kinematic viscosity:	Not determined or not available.

10 Stability and reactivity

10.1 Reactivity: Does not react under normal conditions of use and storage.

10.2 Chemical stability: Stable under normal conditions of use and storage.

10.3 Possibility of hazardous reactions: None under normal conditions of use and storage.

10.4 Conditions to avoid: None known.

10.5 Incompatible materials:

Monomers, resins, water and oxidizing agents.

10.6 Hazardous decomposition products: None known.

11 Toxicological information

11.1 Information on toxicological effects:

Routes of exposure: No information available.

Acute toxicity:

Oral:

3-aminomethyl-3,5,5-trimethylcyclohexylamine: LD50: rat male 1,030 mg/kg.

Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxiran: LD50 Rat 13,800 mg/kg.

Benzyl Alcohol: LD50 Rat 1,230 mg/kg.

Poly(propylene glycol) bis(2-aminopropyl ether): LD50 Rat 2,885.3 mg/kg.

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

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piperazine (solid): LD50 Rat 2,600 mg/kg.

Octahydro-4,7-methano-1H-indenedimethylamine: LD50 502 mg/kg rat.

trimethylhexane-1,6-diamine: LD50: rat 910 mg/kg.

Aminoethylpiperazine: LD50 Oral - rat - male - 2,097 mg/kg.

2,2',2"-nitrilotriethanol: LD50 Mouse 5,846 mg/kg.

Dermal:

3-aminomethyl-3,5,5-trimethylcyclohexylamine: LD50: rat >2,000 mg/kg. Poly(propylene glycol) bis(2-aminopropyl ether): LD50 Rabbit 2,980 mg/kg. Octahydro-4,7-methano-1H-indenedimethylamine: LD50 400 - 500 mg/kg rat.

piperazine (solid): LD50 Rabbit 8,300 mg/kg.

Aminoethylpiperazine: LD50 Dermal - rabbit - male - 866 mg/kg.

2,2',2"-nitrilotriethanol: LD50: Rabbit - > 22.5 g/kg.

Inhalation:

Poly(propylene glycol) bis(2-aminopropyl ether): LC50 Rat 8h .74 mg/l.

piperazine (solid): LC0 Rat 4h .8 mg/l.

3-aminomethyl-3,5,5-trimethylcyclohexylamine: LC50: Rat 4h >5.01 mg/l.

Skin corrosion/irritation:

3-aminomethyl-3,5,5-trimethylcyclohexylamine: Rabbit: causes burns 24 h.

Poly(propylene glycol) bis(2-aminopropyl ether): Rabbit: Corrosive, category 1C - where responses occur after exposures between 1 hour and 4 hours and observations up to 14 days.

piperazine (solid): Rabbit: causes burns.

trimethylhexane-1,6-diamine: Causes skin burns. Benzyl Alcohol BLK: Rabbit No skin irritation 24h.

Serious eye damage/irritation:

3-aminomethyl-3,5,5-trimethylcyclohexylamine: Rabbit: corrosive to eyes 24h.

Poly(propylene glycol) bis(2-aminopropyl ether): Rabbit: Corrosive to eyes.

piperazine (solid): Rabbit: severe eye irritation -24hr.

Benzyl Alcohol BLK: Rabbit Eye irritation 24h.

Respiratory or skin sensitization:

piperazine (solid): Guinea pig: may cause sensitization by skin contact.

Carcinogenicity: No additional information.

IARC (International Agency for Research on Cancer):

Group 3 - Not classifiable as to its carcinogenicity to humans: Triethanolamine.

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

Germ cell mutagenicity: No additional information.

Reproductive Toxicity: No additional information.

STOT-single and repeated exposure: No additional information.

Aspiration toxicity: No information available.

Additional toxicological information: No additional information.

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

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12 Ecological information

12.1 Toxicity:

3-aminomethyl-3,5,5-trimethylcyclohexylamine: Fish, semi-static test LC50 - Leuciscus idus (Golden orfe) - 110 mg/l - 96.0 h.

Poly(propylene glycol) bis(2-aminopropyl ether): Aquatic invertebrates, NOEC - Daphnia - 18 mg/l - 48 h. 2,2',2"-nitrilotriethanol: Fish, Lepomis macrochirus (Bluegill) - 450 - 1,000 mg/l - 96 h.

piperazine (solid) : Fish, LC50 - Poecilia reticulata (guppy) - > 1,800 mg/l - 96.0 h.

2,2',2"-nitrilotriethanol: Aquatic invertebrates, Daphnia magna (Water flea) - 609.98 mg/l - 48 h.

Aminoethylpiperazine: Fish, static test LC50 - Pimephales promelas (fathead minnow) - ca. 2,190 mg/l - 96 h.

Aminoethylpiperazine: Aquatic invertebrates, static test EC50 - Daphnia magna (Water flea) - 58 mg/l - 48 h

piperazine (solid): Aquatic invertebrates, EC50 - Daphnia magna (Water flea) - 21 mg/l - 48 h.

piperazine (solid) : Aquatic Plants, EC50 - Pseudokirchneriella subcapitata (green algae) - > 1,000 mg/l - 72 h.

3-aminomethyl-3,5,5-trimethylcyclohexylamine: Aquatic invertebrates, Immobilization EC50 - Daphnia magna (Water flea) - 23 mg/l - 48 h.

3-aminomethyl-3,5,5-trimethylcyclohexylamine: Aquatic Plants, static test EC50 - Desmodesmus subspicatus (green algae) - 37 mg/l - 72 h.

Benzyl Alcohol: Aquatic invertebrates, EC50 - Daphnia magna (Water flea) - 55 mg/l - 24 h.

Benzyl Alcohol: Fish, LC50 - Lepomis macrochirus (Bluegill) - 10 mg/l - 96 h.

3-aminomethyl-3,5,5-trimethylcyclohexylamine: Bacteria, EC10 - Pseudomonas putida - 1,120 mg/l - 18 h.

Poly(propylene glycol) bis(2-aminopropyl ether): Fish, semi-static test LC50 - Oncorhynchus mykiss (rainbow trout) - > 15 mg/l - 96 h.

Poly(propylene glycol) bis(2-aminopropyl ether): Fish, static test NOEC - Oncorhynchus mykiss (rainbow trout) - 15 mg/l - 96 h.

Poly(propylene glycol) bis(2-aminopropyl ether): Aquatic invertebrates, static test EC50 - Daphnia - 80 mg/l - 48 h.

trimethylhexane-1,6-diamine: Fish, LC50 - Leuciscus idus (Golden orfe) - 172.0 mg/l - 48.0 h.

trimethylhexane-1,6-diamine: Aquatic invertebrates, EC50 - Daphnia magna (Water flea) - 31.5 mg/l - 24 h.

trimethylhexane-1,6-diamine: Aquatic Plants, EC50 - Desmodesmus subspicatus (green algae) - 29.5 mg/l - 72 h.

- **12.2** Persistence and degradability: No additional information.
- **12.3 Bioaccumulative potential:** No additional information.
- **12.4 Mobility in soil:** No additional information.

General notes: No additional information.

12.5 Results of PBT and vPvB assessment:

PBT: No additional information. **vPvB:** No additional information.

12.6 Other adverse effects: No additional information.

13 Disposal considerations

13.1 Waste treatment methods

Relevant information:

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

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

14 Transport information

Land transport:

DOT (49 CFR) transport

14.1	UN Number:	2735
14.2	UN Proper shipping name:	Polyamines, liquid, corrosive, n.o.s. (Isophorone diamine)
14.3	UN Transport hazard classes:	8
14.4	Packing group:	III
	Danger label:	8 Corrosive substances
14.5	Environmental hazards:	Yes
14.6	Special precautions for user:	
	None	

ADR/RID

14.1	UN Number:	2735
14.2	UN Proper shipping name:	Polyamines, liquid, corrosive, n.o.s. (Isophorone diamine)
14.3	UN Transport hazard classes:	8
14.4	Packing group:	III
	Danger label:	8 Corrosive substances
	Tunnel restriction code:	None
	Transport category:	None
	Hazard ID number:	None
14.5	Environmental hazards:	Yes
14.6	Special precautions for user:	
	None	

Air transport:

IATA-DGR

14.1 UN Number:	2735
14.2 UN Proper shipping name:	Polyamines, liquid, corrosive, n.o.s. (Isophorone

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

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		diamine)
14.3	UN Transport hazard classes:	8
14.4	Packing group:	III
	Danger label:	8 Corrosive substances
14.5	Environmental hazards:	Yes
14.6	Special precautions for user:	
	None	

Sea transport:

IMDG

14.1	UN Number:	2735
14.2	UN Proper shipping name:	Polyamines, liquid, corrosive, n.o.s. (Isophorone diamine)
14.3	UN Transport hazard classes:	8
14.4	Packing group:	III
	Danger label:	8 Corrosive substances
		**
	EMS code:	None
14.5	Environmental hazards:	Yes
14.6	Special precautions for user:	
	None	
14.7	Transport in bulk according to Annex	II of MARPOL73/78 and the IBC Code: Not applicable

15 Regulatory information

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

North American

SARA Section 311/312 (Specific toxic chemical listings): Not classified.

SARA Section 302 (Extremely hazardous substances): None of the ingredients are listed.

SARA Section 313 (Specific toxic chemical listings): None of the ingredients are listed.

TSCA (Toxic Substances Control Act): All ingredients are listed.

TSCA Rules and Orders: Not applicable.

Proposition 65 (California):

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

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Chemicals known to cause cancer: None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed. Chemicals known to cause reproductive toxicity for males: None of the ingredients are listed.

Chemicals known to cause developmental toxicity: None of the ingredients are listed.

Canada

Canadian Domestic Substances List (DSL): All ingredients are listed.

European Union

REACH Article 57 (SVHC): None of the ingredients are listed.

Germany MAK: Not classified.

Australia

Australian Inventory of Chemical Substances (AICS): All ingredients are listed.

China

Inventory of Existing Chemical Substances in China (IECSC): All ingredients are listed.

Japan

Inventory of Existing and New Chemical Substances (ENCS): All ingredients are listed.

Korea

Existing Chemicals List (ECL): All ingredients are listed.

New Zealand

New Zealand Inventory of Chemicals (NZOIC): All ingredients are listed.

Philippines

Philippine Inventory of Chemicals and Chemical Substances (PICCS): All ingredients are listed.

Taiwan

Taiwan Chemical Substance Inventory (TSCI): All ingredients are listed.

16 Other information

Abbreviations and Acronyms: None

Summary of classification in section 3:

Acute Tox. 4; H302	Acute toxicity (oral), category 4
Acute Tox. 4; H312	Acute toxicity (dermal), category 4
Skin Sens. 1; H317	Skin sensitization, category 1
Skin Corr. 1B; H314	Skin corrosion, category 1B
Aquatic Chronic 3; H412	Chronic aquatic hazard, category 3
Skin Irrit. 2 ; H315	Skin irritation, category 2
Eye Irrit. 2; H319	Eye irritation, category 2A
Aquatic Chronic 2; H411	Chronic aquatic hazard, category 2
Acute Tox. 3; H311	Acute toxicity (dermal), category 3
Acute Tox. 4; H332	Acute toxicity (inhalation), category 4
Aquatic Acute 2; H401	Acute aquatic hazard, category 2

Summary of hazard statements in section 3:

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), 29CFR1910/1200 and GHS Rev. 3

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H302	May be harmful if swallowed
H312	May be harmful in contact with skin
H317	May cause an allergic skin reaction
H314	Causes severe skin burns and eye damage
H412	Harmful to aquatic life with long lasting effects
H315	Causes skin irritation
H319	Causes serious eye irritation
H411	Toxic to aquatic life with long lasting effects
H311	Harmful in contact with skin
H332	May be harmful if inhaled
H401	Toxic to aquatic life

Manufacturer Statement:

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