

### SECTION 1: Identification

#### 1.1. Product identifier

Product form : Mixture  
Product name : HBE-HT Repair Cure

#### 1.2. Recommended use and restrictions on use

Recommended use : Corrosion and mechanical protection.

#### 1.3. Supplier

##### Supplier

CANUSA-CPS

455 W Airport Rd,  
Huntsville, ON P1H 1Y7  
Telephone: 1-705-789-1787

#### 1.4. Emergency telephone number

Emergency number : 613-996-6666 (Canutec) only for transport emergency  
1-800-255-3924 ChemTel (Contract Number MIS9425100)

### SECTION 2: Hazard identification

The classification and all precautionary statements apply to product in its uncured state. Cured epoxy products are generally non hazardous unless they are cut, sanded or burned.

#### 2.1. Classification of the substance or mixture

##### Classification (GHS CA)

Flam. Liq. 3	H226
Acute Tox. 4 (Oral)	H302
Acute Tox. 3 (Dermal)	H311
Acute Tox. 3 (Inhalation:vapour)	H331
Skin Corr. 1B	H314
Eye Dam. 1	H318
Skin Sens. 1	H317
Repr. 1B	H360
STOT SE 3	H335
STOT RE 2	H373
HHNOC 1	

#### 2.2. GHS Label elements, including precautionary statements

##### GHS-CA labelling

Hazard pictograms (GHS-CA) :



Signal word (GHS CA) : Danger

Hazard statements (GHS-CA) :

H226 - Flammable liquid and vapour.  
H302 - Harmful if swallowed.  
H311+H331 - Toxic in contact with skin or if inhaled  
H314 - Causes severe skin burns and eye damage.  
H317 - May cause an allergic skin reaction.  
H335 - May cause respiratory irritation.  
H360 - May damage fertility or the unborn child.  
H373 - May cause damage to organs through prolonged or repeated exposure.  
Causes severe damage to the respiratory tract

Precautionary statements (GHS-CA) :

P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 - Keep container tightly closed.  
P240 - Ground/bond container and receiving equipment.  
P241 - Use explosion-proof electrical/ventilating/lighting equipment.  
P242 - Use only non-sparking tools.

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P243 - Take action to prevent static discharges.  
P260 - Do not breathe dust/fume/gas/mist/vapours/spray.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product  
P271 - Use only outdoors or in a well-ventilated area.  
P272 - Contaminated work clothing should not be allowed out of the workplace.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
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 .  
P363 - Wash contaminated clothing before reuse.  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 - Immediately call a POISON CENTER or doctor.  
P308+P313 - IF exposed or concerned: Get medical advice/attention.  
P312 - Call a POISON CENTER or doctor if you feel unwell.  
P403+P235 - Store in a well-ventilated place. Keep cool  
P405 - Store locked up.  
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS CA)

1% of the mixture consists of ingredient(s) of unknown acute toxicity (Oral)  
13% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal)  
93% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Vapours))

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%
1-Piperazineethanamine	(CAS-No.) 140-31-8	30 – 60
Bisphenol A	(CAS-No.) 80-05-7	15 – 40
Phenol, 4-nonyl-, branched	(CAS-No.) 84852-15-3	10 – 30
Benzyl dimethylamine	(CAS-No.) 103-83-3	5 – 10
Benzyl alcohol	(CAS-No.) 100-51-6	3 – 7
Amines, polyethylenepoly-	(CAS-No.) 68131-73-7	3 – 7
N-[3-(Trimethoxysilyl)propyl]-1,2-ethanediamine	(CAS-No.) 1760-24-3	3 – 7
3,6,9,12-Tetrazaatetradecane-1,14-diamine	(CAS-No.) 4067-16-7	1 – 5
Tetraethylenepentamine	(CAS-No.) 112-57-2	1 – 5
Ethanol, 2-[(2-aminoethyl)amino]-	(CAS-No.) 111-41-1	0.1 – 1
Diethylenetriamine	(CAS-No.) 111-40-0	0.1 – 1
Phenol, dinonyl-	(CAS-No.) 1323-65-5	0.1 – 1
Triethylenetetramine	(CAS-No.) 112-24-3	0.1 – 1
Propylene glycol diamine, 2-amino-, diether with Propylene	(CAS-No.) 9046-10-0	0.1 – 1

\*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation : If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

First-aid measures after skin contact : If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or doctor. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : 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.

First-aid measures after ingestion : IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER or doctor.

### 4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation : Toxic if inhaled. Causes burns to the respiratory system. Causes severe damage to the respiratory tract.

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Symptoms/effects after skin contact	: Toxic in contact with skin. Causes severe skin burns. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.
Symptoms/effects after ingestion	: Harmful if swallowed. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Chronic symptoms	: May cause damage to organs through prolonged or repeated exposure. May cause damage to fertility or the unborn child.

### 4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment	: Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
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## SECTION 5: Fire-fighting measures

### 5.1. Suitable extinguishing media

Suitable extinguishing media	: Carbon dioxide (CO <sub>2</sub> ), dry chemical powder, foam. Water spray. Water fog.
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### 5.2. Unsuitable extinguishing media

Unsuitable extinguishing media	: Do not use water jet.
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### 5.3. Specific hazards arising from the hazardous product

Fire hazard	: Flammable liquid and vapour. Products of combustion may include, and are not limited to: oxides of carbon. Nitrogen oxides. Carboxylic acids. Aldehydes.
Explosion hazard	: May form flammable/explosive vapour-air mixture.

### 5.4. Special protective equipment and precautions for fire-fighters

Protection during firefighting	: Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).
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## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Use special care to avoid static electric charges. Remove all sources of ignition.
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### 6.2. Methods and materials for containment and cleaning up

For containment	: Stop leak if safe to do so. Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.
Methods for cleaning up	: Sweep or shovel spills into appropriate container for disposal. Provide ventilation.

### 6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not swallow. When using do not eat, drink or smoke. Ensure adequate ventilation. Handle and open container with care.
Hygiene measures	: Take off contaminated clothing and wash it before reuse. Wash hands, forearms and face thoroughly after handling.
Additional hazards when processed	: Handle empty containers with care because residual vapours are flammable.

### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	: Keep out of the reach of children. Store locked up. Keep away from food, drink and animal feedingstuffs. Keep in fireproof place. Keep away from ignition sources. Keep away from clothing and other combustible materials. Store tightly closed in a dry, cool and well-ventilated place.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

Diethylenetriamine (111-40-0)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	1 ppm

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### Diethylenetriamine (111-40-0)

ACGIH chemical category

Skin - potential significant contribution to overall exposure by the cutaneous route

### 8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station. Provide readily accessible eye wash stations and safety showers.
- Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Wear suitable gloves resistant to chemical penetration

#### Eye protection:

Wear eye/face protection

#### Skin and body protection:

Wear suitable protective clothing. Neoprene rubber or butyl rubber suit

#### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. 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.

#### Other information:

Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Moderately viscous
Colour	: Green/Blue
Odour	: Ammoniacal
Odour threshold	: Not applicable
pH	: alkaline
Relative evaporation rate (butylacetate=1)	: Not applicable
Relative evaporation rate (ether=1)	: Not applicable
Melting point	: Not applicable
Freezing point	: Not applicable
Boiling point	: Not applicable
Flash point	: Not applicable
Auto-ignition temperature	: Not applicable
Decomposition temperature	: Not applicable
Flammability (solid, gas)	: Flammable liquid and vapour.
Vapour pressure	: Not applicable
Vapour pressure at 50 °C	: Not applicable
Relative density	: 1.07
Solubility	: Slightly soluble
Partition coefficient n-octanol/water	: Not applicable
Viscosity, kinematic	: > 2200 cP
Viscosity, dynamic	: 800 – 1200 cP
Explosive limits	: Not applicable

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Reactivity	: No dangerous reactions known under normal conditions of use.
Chemical stability	: Stable under normal conditions. May form flammable/explosive vapour-air mixture.
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.

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Conditions to avoid	: Heat. Incompatible materials. Sources of ignition. Direct sunlight.
Incompatible materials	: Strong oxidizing agents. Strong acids.
Hazardous decomposition products	: May include, and are not limited to: oxides of carbon. Nitrogen oxides. Carboxylic acids. Aldehydes. May release flammable gases.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Toxic in contact with skin.
Acute toxicity (inhalation)	: Toxic if inhaled.

ATE CA (oral)	445.061 mg/kg bodyweight
ATE CA (Dermal)	697.547 mg/kg bodyweight
ATE CA (vapours)	8.8 mg/l/4h
Unknown acute toxicity (GHS CA)	1% of the mixture consists of ingredient(s) of unknown acute toxicity (Oral) 13% of the mixture consists of ingredient(s) of unknown acute toxicity (Dermal) 93% of the mixture consists of ingredient(s) of unknown acute toxicity (Inhalation (Vapours))

#### 1-Piperazineethanamine (140-31-8)

LD50 oral rat	2140 µl/kg
LD50 dermal rabbit	866 mg/kg
ATE CA (oral)	500 mg/kg bodyweight
ATE CA (Dermal)	866 mg/kg bodyweight

#### Ethanol, 2-[(2-aminoethyl)amino]- (111-41-1)

LD50 oral rat	2000 mg/kg
LD50 dermal rat	> 2000 mg/kg
ATE CA (oral)	2000 mg/kg bodyweight

#### Diethylenetriamine (111-40-0)

LD50 oral rat	1080 mg/kg
LD50 dermal rabbit	672 mg/kg
LC50 inhalation rat	70 mg/l/4h
ATE CA (oral)	1080 mg/kg bodyweight
ATE CA (Dermal)	672 mg/kg bodyweight
ATE CA (vapours)	70 mg/l/4h
ATE CA (dust,mist)	70 mg/l/4h

#### Phenol, 4-nonyl-, branched (84852-15-3)

LD50 oral rat	1300 mg/kg
LD50 dermal rabbit	2000 mg/kg
ATE CA (oral)	1300 mg/kg bodyweight
ATE CA (Dermal)	2000 mg/kg bodyweight

#### Bisphenol A (80-05-7)

LD50 oral rat	3300 mg/kg
LD50 dermal rabbit	3000 mg/kg
LC50 inhalation rat	> 170 mg/m <sup>3</sup> (Exposure time: 6 h)
ATE CA (oral)	3300 mg/kg bodyweight
ATE CA (Dermal)	3000 mg/kg bodyweight

#### Benzyl alcohol (100-51-6)

LD50 oral rat	1230 mg/kg
LD50 dermal rabbit	2 g/kg
LC50 inhalation rat	8.8 mg/l/4h
ATE CA (oral)	1230 mg/kg bodyweight
ATE CA (Dermal)	2000 mg/kg bodyweight
ATE CA (Gases (except aerosol dispensers and lighters))	700 ppmv/4h
ATE CA (vapours)	8.8 mg/l/4h
ATE CA (dust,mist)	0.5 mg/l/4h

#### Benzyl dimethylamine (103-83-3)

LD50 oral rat	265 mg/kg
LD50 dermal rabbit	1.66 ml/kg
LC50 inhalation rat	373 ppm/4h

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<b>Benzyltrimethylamine (103-83-3)</b>	
ATE CA (oral)	265 mg/kg bodyweight
ATE CA (Dermal)	1660 mg/kg bodyweight
ATE CA (Gases (except aerosol dispensers and lighters))	373 ppmv/4h
ATE CA (vapours)	11 mg/l/4h
ATE CA (dust,mist)	1.5 mg/l/4h

<b>Amines, polyethylenepoly- (68131-73-7)</b>	
LD50 oral rat	1716 mg/kg
LD50 dermal rat	1000 – 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
ATE CA (oral)	1716 mg/kg bodyweight
ATE CA (Dermal)	1100 mg/kg bodyweight

<b>3,6,9,12-Tetrazaatetradecane-1,14-diamine (4067-16-7)</b>	
LD50 oral rat	1600 mg/kg
ATE CA (oral)	1600 mg/kg bodyweight

<b>Tetraethylenepentamine (112-57-2)</b>	
LD50 oral rat	3990 mg/kg
LD50 dermal rabbit	660 µl/kg
ATE CA (oral)	500 mg/kg bodyweight
ATE CA (Dermal)	660 mg/kg bodyweight

<b>Triethylenetetramine (112-24-3)</b>	
LD50 oral rat	2500 mg/kg
LD50 dermal rabbit	550 mg/kg
ATE CA (oral)	2500 mg/kg bodyweight
ATE CA (Dermal)	550 mg/kg bodyweight

<b>N-[3-(Trimethoxysilyl)propyl]-1,2-ethanediamine (1760-24-3)</b>	
LD50 oral rat	2413 mg/kg
LD50 dermal rabbit	> 2009 mg/kg
ATE CA (oral)	2413 mg/kg bodyweight

<b>Propylene glycol diamine, 2-amino-, diether with Propylene (9046-10-0)</b>	
LD50 oral rat	242 mg/kg
LD50 dermal rat	2980 mg/kg
LD50 dermal rabbit	2980 mg/kg
ATE CA (oral)	242 mg/kg bodyweight
ATE CA (Dermal)	2980 mg/kg bodyweight

Skin corrosion/irritation	: Causes severe skin burns. pH: alkaline
Serious eye damage/irritation	: Causes serious eye damage. pH: alkaline
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not applicable.
Carcinogenicity	: Not applicable.
Reproductive toxicity	: May damage fertility or the unborn child.

<b>Phenol, 4-nonyl-, branched (84852-15-3)</b>	
NOAEL (animal/female, F0/P)	15 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 416 (Two-Generation Reproduction Toxicity Study), Remarks on results: other:Generation: All generations tested: F0, F1, F2, F3 (migrated information)
NOAEL (animal/male, F1)	15 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: other:EPA OPPTS 837.3800 (US EPA OPPTS 1998)

STOT-single exposure : May cause respiratory irritation.

<b>Ethanol, 2-[(2-aminoethyl)amino]- (111-41-1)</b>	
STOT-single exposure	May cause respiratory irritation.

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<b>Bisphenol A (80-05-7)</b>	
STOT-single exposure	May cause respiratory irritation.

STOT-repeated exposure : May cause damage to organs through prolonged or repeated exposure.

<b>Phenol, 4-nonyl-, branched (84852-15-3)</b>	
LOAEL (oral, rat, 90 days)	400 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

<b>Bisphenol A (80-05-7)</b>	
LOAEL (oral, rat, 90 days)	600 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)

<b>Benzyl alcohol (100-51-6)</b>	
NOAEL (oral, rat, 90 days)	400 mg/kg bodyweight Animal: rat, Guideline: other:OECD Guideline 451 (Carcinogenicity Studies)

<b>N-[3-(Trimethoxysilyl)propyl]-1,2-ethanediamine (1760-24-3)</b>	
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not applicable.

<b>HBE-95 SG Cure</b>	
Viscosity, kinematic (calculated value) (40 °C)	> 2200 cP

Symptoms/effects after inhalation : Toxic if inhaled. Causes burns to the respiratory system. Causes severe damage to the respiratory tract.

Symptoms/effects after skin contact : Toxic in contact with skin. Causes severe skin burns. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May cause an allergic skin reaction.

Symptoms/effects after eye contact : Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.

Symptoms/effects after ingestion : Harmful if swallowed. May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic symptoms : May cause damage to organs through prolonged or repeated exposure. May cause damage to fertility or the unborn child.

Other information : Likely routes of exposure: ingestion, inhalation, skin and eye.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : May cause long-term adverse effects in the aquatic environment.

<b>1-Piperazineethanamine (140-31-8)</b>	
LC50 - Fish [1]	1950 – 2460 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 - Fish [2]	> 1000 mg/l (Exposure time: 96 h - Species: Poecilia reticulata [semi-static])
EC50 - Crustacea [1]	32 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 72h - Algae [1]	495 mg/l (Species: Pseudokirchneriella subcapitata)

<b>Ethanol, 2-[(2-aminoethyl)amino]- (111-41-1)</b>	
LC50 - Fish [1]	728 mg/l (Exposure time: 96 h - Species: Pimephales promelas)
EC50 - Crustacea [1]	22 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 72h - Algae [1]	210 mg/l (Species: Desmodesmus subspicatus)

<b>Diethylenetriamine (111-40-0)</b>	
LC50 - Fish [1]	248 mg/l (Exposure time: 96 h - Species: Poecilia reticulata [static])
LC50 - Fish [2]	1014 mg/l (Exposure time: 96 h - Species: Poecilia reticulata [semi-static])
EC50 - Crustacea [1]	16 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 72h - Algae [1]	1164 mg/l (Species: Pseudokirchneriella subcapitata)
EC50 96h - Algae [1]	345.6 mg/l (Species: Pseudokirchneriella subcapitata)
EC50 96h - Algae [2]	592 mg/l (Species: Desmodesmus subspicatus)

<b>Phenol, 4-nonyl-, branched (84852-15-3)</b>	
LC50 - Fish [1]	0.135 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 - Fish [2]	0.1351 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [flow-through])
EC50 - Crustacea [1]	0.14 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 72h - Algae [1]	0.16 – 0.72 mg/l (Species: Pseudokirchneriella subcapitata [static])

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<b>Phenol, 4-nonyl-, branched (84852-15-3)</b>	
EC50 72h - Algae [2]	1.3 mg/l (Species: <i>Desmodesmus subspicatus</i> )
EC50 96h - Algae [1]	0.36 – 0.48 mg/l (Species: <i>Pseudokirchneriella subcapitata</i> [static])
NOEC chronic fish	0.006 mg/l Test organisms (species): <i>Oncorhynchus mykiss</i> (previous name: <i>Salmo gairdneri</i> ) Duration: '91 d'

<b>Bisphenol A (80-05-7)</b>	
LC50 - Fish [1]	3.6 – 5.4 mg/l (Exposure time: 96 h - Species: <i>Pimephales promelas</i> [flow-through])
LC50 - Fish [2]	4 – 5.5 mg/l (Exposure time: 96 h - Species: <i>Pimephales promelas</i> [static])
EC50 - Crustacea [1]	10.2 mg/l (Exposure time: 48 h - Species: <i>Daphnia magna</i> )
EC50 - Crustacea [2]	3.9 mg/l (Exposure time: 48 h - Species: <i>Daphnia magna</i> )
EC50 96h - Algae [1]	2.5 mg/l (Species: <i>Pseudokirchneriella subcapitata</i> )
EC50 96h - Algae [2]	1.4 mg/l Test organisms (species): <i>Skeletonema costatum</i>
LOEC (chronic)	3.6 mg/l Test organisms (species): other:Rotifer ( <i>Brachionus calyciflorus</i> ) Duration: '48 h'

<b>Benzyl alcohol (100-51-6)</b>	
LC50 - Fish [1]	460 mg/l (Exposure time: 96 h - Species: <i>Pimephales promelas</i> [static])
LC50 - Fish [2]	10 mg/l (Exposure time: 96 h - Species: <i>Lepomis macrochirus</i> [static])
EC50 - Crustacea [1]	23 mg/l (Exposure time: 48 h - Species: water flea)
EC50 72h - Algae [1]	770 mg/l Test organisms (species): <i>Pseudokirchneriella subcapitata</i> (previous names: <i>Raphidocelis subcapitata</i> , <i>Selenastrum capricornutum</i> )
EC50 72h - Algae [2]	500 mg/l Test organisms (species): <i>Pseudokirchneriella subcapitata</i> (previous names: <i>Raphidocelis subcapitata</i> , <i>Selenastrum capricornutum</i> )
NOEC (chronic)	51 mg/l Test organisms (species): <i>Daphnia magna</i> Duration: '21 d'

<b>Benzyl dimethylamine (103-83-3)</b>	
LC50 - Fish [1]	35.8 – 39.9 mg/l (Exposure time: 96 h - Species: <i>Pimephales promelas</i> [flow-through])

<b>Amines, polyethylenepoly- (68131-73-7)</b>	
LC50 - Fish [1]	100 mg/l (Exposure time: 96 h - Species: <i>Poecilia reticulata</i> [semi-static])

<b>Tetraethylenepentamine (112-57-2)</b>	
LC50 - Fish [1]	420 mg/l (Exposure time: 96 h - Species: <i>Poecilia reticulata</i> [static])
EC50 - Crustacea [1]	24.1 mg/l (Exposure time: 48 h - Species: <i>Daphnia magna</i> )
EC50 72h - Algae [1]	2.1 mg/l (Species: <i>Pseudokirchneriella subcapitata</i> )

<b>Triethylenetetramine (112-24-3)</b>	
LC50 - Fish [1]	570 mg/l (Exposure time: 96 h - Species: <i>Poecilia reticulata</i> [semi-static])
LC50 - Fish [2]	495 mg/l (Exposure time: 96 h - Species: <i>Pimephales promelas</i> )
EC50 - Crustacea [1]	31.1 mg/l (Exposure time: 48 h - Species: <i>Daphnia magna</i> )
EC50 72h - Algae [1]	2.5 mg/l (Species: <i>Desmodesmus subspicatus</i> )
EC50 72h - Algae [2]	20 mg/l (Species: <i>Pseudokirchneriella subcapitata</i> )
EC50 96h - Algae [1]	3.7 mg/l (Species: <i>Pseudokirchneriella subcapitata</i> )

### 12.2. Persistence and degradability

<b>HBE-95 SG Cure</b>	
Persistence and degradability	Not established.

### 12.3. Bioaccumulative potential

<b>HBE-95 SG Cure</b>	
Bioaccumulative potential	Not established.

<b>1-Piperazineethanamine (140-31-8)</b>	
BCF - Fish [1]	(no bioaccumulation expected)
Partition coefficient n-octanol/water	-1.48

<b>Ethanol, 2-[(2-aminoethyl)amino]- (111-41-1)</b>	
BCF - Fish [1]	0.2 – 3.7
Partition coefficient n-octanol/water	-1.46

<b>Diethylenetriamine (111-40-0)</b>	
BCF - Fish [1]	0.3 – 1.7
Partition coefficient n-octanol/water	-1.3

<b>Phenol, 4-nonyl-, branched (84852-15-3)</b>	
BCF - Fish [1]	271



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<b>Bisphenol A (80-05-7)</b>	
BCF - Fish [1]	5.1 – 13.8
Partition coefficient n-octanol/water	2.2
<b>Benzyl alcohol (100-51-6)</b>	
Partition coefficient n-octanol/water	1.1
<b>Tetraethylenepentamine (112-57-2)</b>	
BCF - Fish [1]	(no bioaccumulation expected)
Partition coefficient n-octanol/water	< 1
<b>Triethylenetetramine (112-24-3)</b>	
BCF - Fish [1]	(no bioaccumulation expected)
Partition coefficient n-octanol/water	-1.4

### 12.4. Mobility in soil

<b>1-Piperazineethanamine (140-31-8)</b>	
Partition coefficient n-octanol/water	-1.48
<b>Ethanol, 2-[(2-aminoethyl)amino]- (111-41-1)</b>	
Partition coefficient n-octanol/water	-1.46
<b>Diethylenetriamine (111-40-0)</b>	
Partition coefficient n-octanol/water	-1.3
<b>Bisphenol A (80-05-7)</b>	
Partition coefficient n-octanol/water	2.2
<b>Benzyl alcohol (100-51-6)</b>	
Partition coefficient n-octanol/water	1.1
<b>Tetraethylenepentamine (112-57-2)</b>	
Partition coefficient n-octanol/water	< 1
<b>Triethylenetetramine (112-24-3)</b>	
Partition coefficient n-octanol/water	-1.4

### 12.5. Other adverse effects

Ozone : Not applicable.  
Other information : No other effects known.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. The generation of waste should be avoided or minimized wherever possible.  
Additional information : Handle empty containers with care because residual vapours are flammable.

## SECTION 14: Transport information

### 14.1. UN number

UN-No. (DOT/TDG) : UN2735  
UN-No. (IMDG) : 2735  
UN-No. (IATA) : 2735

### 14.2. UN proper shipping name

Proper Shipping Name (DOT/TDG) : Polyamines, liquid, corrosive, n.o.s. (1-Piperazineethanamine ; Benzyl dimethylamine)  
Proper Shipping Name (IMDG) : AMINES, LIQUID, CORROSIVE, N.O.S. (1-Piperazineethanamine ; Benzyl dimethylamine)  
Proper Shipping Name (IATA) : Amines, liquid, corrosive, n.o.s. (1-Piperazineethanamine ; Benzyl dimethylamine)

### 14.3. Transport hazard class(es)

#### Department of Transportation (DOT) and Transportation of Dangerous Goods (TDG)

Class (DOT/TDG) : 8  
Hazard labels (DOT/TDG) :



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According to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012 and the Hazardous Products Regulations (HPR) WHMIS 2015

### IMDG

Transport hazard class(es) (IMDG) : 8  
Danger labels (IMDG) :



### IATA

Transport hazard class(es) (IATA) : 8  
Danger labels (IATA) :



### 14.4. Packing group

Packing group (DOT/TDG) : III  
Packing group (IMDG) : III  
Packing group (IATA) : III

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

### 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. National regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

All components of this product are listed, or excluded from listing, on the Canadian DSL (Domestic Substances List) and NDSL (Non-Domestic Substances List) inventories.

### 15.2. International regulations

No additional information available

### 15.3. US State regulations

**⚠ WARNING:** This product can expose you to Bisphenol A, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## SECTION 16: Other information

Revision date : 09/09/2021  
Other information : None.  
Prepared by : Nexreg Compliance Inc.  
www.Nexreg.com  
For more information contact  
Canusa-CPS



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