

**SECTION 1: Identification****1.1. Identification**

Product form : Mixture  
Product name : HFP 1:1 Part B

**1.2. Recommended use and restrictions on use**

No additional information available

**1.3. Supplier**

Echem  
4102 El Rey Road SE  
Albuquerque, New Mexico  
United States  
T (505) 832-3667 - F (505) 217-3721  
<https://e-chem.net/>

**1.4. Emergency telephone number**

Emergency number : 1-800-424-9300  
For Chemical Emergency Call Chemtrec 24hr/day 7days/week  
Within USA and Canada: 1-800-424-9300  
Outside USA and Canada: 703-527-3887  
(collect calls accepted)

**SECTION 2: Hazard(s) identification****2.1. Classification of the substance or mixture****GHS US classification**

Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Acute toxicity (dermal) Category 4	H312	Harmful in contact with skin
Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage
Skin sensitization, Category 1	H317	May cause an allergic skin reaction
Reproductive toxicity Category 2	H361	Suspected of damaging fertility or the unborn child
Hazardous to the aquatic environment – Acute Hazard Category 1	H400	Very toxic to aquatic life
Hazardous to the aquatic environment – Chronic Hazard Category 1	H410	Very toxic to aquatic life with long lasting effects

Full text of H statements : see section 16

**2.2. GHS Label elements, including precautionary statements****GHS US labeling**

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H302+H312 - Harmful if swallowed or in contact with skin  
H315 - Causes skin irritation  
H317 - May cause an allergic skin reaction  
H318 - Causes serious eye damage  
H361 - Suspected of damaging fertility or the unborn child

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### Precautionary statements (GHS US)

H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects

: P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P272 - Contaminated work clothing must not be allowed out of the workplace.  
P273 - Avoid release to the environment.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.  
P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.  
P302+P352 - If on skin: Wash with plenty of water.  
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+P313 - If exposed or concerned: Get medical advice/attention.  
P310 - Immediately call a poison center or doctor.  
P312 - Call a poison center or doctor if you feel unwell.  
P321 - Specific treatment (see supplemental first aid instruction on this label).  
P322 - Specific treatment (see supplemental first aid instruction on this label)  
P330 - Rinse mouth.  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P363 - Wash contaminated clothing before reuse.  
P391 - Collect spillage.  
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 which do not result in classification

No additional information available

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

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
Phenol, 4-nonyl-, branched	CAS-No.: 84852-15-3	≥ 60	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Repr. 2, H361 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Cyclic Ethyleneamine	CAS-No.: 140-31-8	5 – 30	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412

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Name	Product identifier	%	GHS US classification
Polyoxypropylenediamine	CAS-No.: 9046-10-0	< 30	Skin Corr. 1C, H314 Eye Dam. 1, H318 Aquatic Chronic 3, H412
2,4,6-tris(dimethylaminomethyl)phenol	CAS-No.: 90-72-2	1 – 5	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319
2-methylpentane-1,5-diamine	CAS-No.: 15520-10-2	≥ 1	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Corr. 1A, H314 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 3, H402
cashew, nutshell liquid	CAS-No.: 8007-24-7	< 1	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1A, H317 STOT SE 3, H335 Aquatic Chronic 3, H412

Full text of hazard classes and H-statements : see section 16

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

First-aid measures general	: IF exposed or concerned: Get medical advice/attention. Call a poison center/doctor/physician if you feel unwell.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
First-aid measures after ingestion	: Rinse mouth. Call a poison center/doctor/physician if you feel unwell.

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

Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Serious damage to eyes.

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

Treat symptomatically.

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

#### 5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Toxic fumes may be released.

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

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin, eyes and clothing. Avoid breathing dust/fume/gas/mist/vapors/spray.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

### 6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid breathing dust/fume/gas/mist/vapors/spray.

Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

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No additional information available

#### Cyclic Ethyleneamine (140-31-8)

No additional information available

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### 2-methylpentane-1,5-diamine (15520-10-2)

No additional information available

### Polyoxypropylenediamine (9046-10-0)

No additional information available

### 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)

No additional information available

### cashew, nutshell liquid (8007-24-7)

No additional information available

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

No additional information available

## 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

## 8.3. Individual protection measures/Personal protective equipment

### Hand protection:

Protective gloves

### Eye protection:

Safety glasses

### Skin and body protection:

Wear suitable protective clothing

### Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

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

Physical state : Liquid  
Color : Mixture contains one or more component(s) which have the following colour(s): Colourless to light yellow Colourless Light yellow light yellow Dark brown Pure substance: colourless to white On exposure to air: rose to brown Colourless to yellow  
Odor : There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure.  
Mixture contains one or more component(s) which have the following odour: Irritating/pungent odour Smell of fish Amine-like odour Amine-like Characteristic odour Sweet odour Aromatic odour Mild odour Phenol odour  
Odor threshold : No data available

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pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Harmful in contact with skin.
Acute toxicity (inhalation)	: Not classified

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ATE US (oral)	759.55 mg/kg body weight
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ATE US (dermal)	1887.691 mg/kg body weight
<b>Cyclic Ethyleneamine (140-31-8)</b>	
LD50 oral rat	2097 mg/kg body weight (Rat, Male, Experimental value, Oral, 14 day(s))
LD50 oral	1470 mg/kg
LD50 dermal rabbit	866 mg/kg bw/day (24 h, Rabbit, Male, Experimental value, Dermal, 14 day(s))
LD50 dermal	880 mg/kg
ATE US (oral)	1470 mg/kg body weight
ATE US (dermal)	866 mg/kg body weight
<b>2-methylpentane-1,5-diamine (15520-10-2)</b>	
LD50 oral rat	1690 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral, 14 day(s))
LD50 dermal rat	1870 mg/kg body weight (Equivalent or similar to OECD 402, Rat, Male / female, Read-across, Dermal, 14 day(s))
LC50 Inhalation - Rat	4.9 mg/l air (Equivalent or similar to OECD 403, 1 h, Rat, Male / female, Experimental value, Inhalation (mist), 14 day(s))
ATE US (oral)	1690 mg/kg body weight
ATE US (dermal)	1870 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	4.9 mg/l/4h
ATE US (dust, mist)	4.9 mg/l/4h
<b>Polyoxypropylenediamine (9046-10-0)</b>	
LD50 oral rat	2885 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral)
LD50 dermal rabbit	2980 mg/kg body weight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Experimental value, Dermal)
LC50 Inhalation - Rat	> 0.74 mg/l air (Equivalent or similar to OECD 403, 8 h, Rat, Male / female, Experimental value, Inhalation (vapours))
ATE US (oral)	2885 mg/kg body weight
ATE US (dermal)	2980 mg/kg body weight
<b>2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)</b>	
LD50 oral rat	2169 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 oral	1000 mg/kg
LD50 dermal rat	1280 mg/kg
LD50 dermal	1280 mg/kg
ATE US (oral)	1000 mg/kg body weight
ATE US (dermal)	1280 mg/kg body weight

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<b>cashew, nutshell liquid (8007-24-7)</b>	
LD50 oral rat	> 2000 mg/kg (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral)
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Skin, 14 day(s))
<b>Phenol, 4-nonyl-, branched (84852-15-3)</b>	
LD50 oral rat	1412 mg/kg body weight (Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 oral	580 mg/kg
LD50 dermal rabbit	3160 mg/kg Source: ChemIDPlus
LD50 dermal	2037 mg/kg
ATE US (oral)	580 mg/kg body weight
ATE US (dermal)	2037 mg/kg body weight
Skin corrosion/irritation	: Causes skin irritation.
<b>Cyclic Ethyleneamine (140-31-8)</b>	
pH	11.5
<b>2-methylpentane-1,5-diamine (15520-10-2)</b>	
pH	No data available in the literature
<b>2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)</b>	
pH	11 (10 %)
<b>Phenol, 4-nonyl-, branched (84852-15-3)</b>	
pH	No data available in the literature
Serious eye damage/irritation	: Causes serious eye damage.
<b>Cyclic Ethyleneamine (140-31-8)</b>	
pH	11.5
<b>2-methylpentane-1,5-diamine (15520-10-2)</b>	
pH	No data available in the literature
<b>2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)</b>	
pH	11 (10 %)
<b>Phenol, 4-nonyl-, branched (84852-15-3)</b>	
pH	No data available in the literature
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Suspected of damaging fertility or the unborn child.
<b>Phenol, 4-nonyl-, branched (84852-15-3)</b>	
NOAEL (animal/female, F0/P)	15 mg/kg body weight 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 body weight Animal: rat, Animal sex: male, Guideline: other:EPA OPPTS 837.3800 (US EPA OPPTS 1998)



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STOT-single exposure : Not classified

### 2-methylpentane-1,5-diamine (15520-10-2)

STOT-single exposure	May cause respiratory irritation.
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### cashew, nutshell liquid (8007-24-7)

STOT-single exposure	May cause respiratory irritation.
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STOT-repeated exposure : Not classified

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

LOAEL (oral,rat,90 days)	400 mg/kg body weight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
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NOAEL (oral,rat,90 days)	100 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents)
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Aspiration hazard : Not classified

Viscosity, kinematic : No data available

### Cyclic Ethyleneamine (140-31-8)

Viscosity, kinematic	No data available in the literature
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### 2-methylpentane-1,5-diamine (15520-10-2)

Viscosity, kinematic	No data available in the literature
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### Polyoxypropylenediamine (9046-10-0)

Viscosity, kinematic	10.9 mm <sup>2</sup> /s (20 °C, OECD 114: Viscosity of Liquids)
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### 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)

Viscosity, kinematic	206.186 mm <sup>2</sup> /s
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### Phenol, 4-nonyl-, branched (84852-15-3)

Viscosity, kinematic	No data available in the literature
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Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.

Symptoms/effects after eye contact : Serious damage to eyes.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.

### Cyclic Ethyleneamine (140-31-8)

LC50 - Fish [1]	2190 mg/l (96 h, Pimephales promelas, Static system, Fresh water, Experimental value)
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EC50 - Crustacea [1]	58 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Experimental value, GLP)
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EC50 72h - Algae [1]	> 1000 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
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ErC50 algae	> 1000 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Fresh water, Experimental value, GLP)
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### 2-methylpentane-1,5-diamine (15520-10-2)

LC50 - Fish [1]	1825 mg/l (Equivalent or similar to OECD 203, 96 h, Pimephales promelas, Static system, Fresh water, Read-across, Nominal concentration)
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<b>2-methylpentane-1,5-diamine (15520-10-2)</b>	
EC50 - Crustacea [1]	19.8 – 23.4 mg/l (Equivalent or similar to OECD 202, 48 h, Daphnia magna, Static system, Fresh water, Read-across, Nominal concentration)
ErC50 algae	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Read-across, GLP)
<b>Polyoxypropylenediamine (9046-10-0)</b>	
LC50 - Fish [1]	772.14 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Cyprinodon variegatus, Static system, Salt water, Experimental value, GLP)
EC50 - Crustacea [1]	80 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
ErC50 algae	15 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)
<b>2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)</b>	
LC50 - Fish [1]	175 mg/l (APHA, 96 h, Cyprinus carpio, Static system, Fresh water, Experimental value, Nominal concentration)
LC50 - Fish [2]	180 – 240 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 72h - Algae [1]	84 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 96h - Algae [1]	34.812 mg/l Source: ECOSAR
ErC50 algae	84 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)
<b>Phenol, 4-nonyl-, branched (84852-15-3)</b>	
LC50 - Fish [1]	0.08 mg/l (ASTM E729-96, 96 h, Hybopsis monacha, Static system, Fresh water, Experimental value)
EC50 - Crustacea [1]	0.084 mg/l (ASTM E729-88, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, Lethal)
EC50 72h - Algae [1]	0.33 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
ErC50 algae	0.027 mg/l
NOEC chronic fish	0.006 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '91 d'

### 12.2. Persistence and degradability

<b>Cyclic Ethyleneamine (140-31-8)</b>	
Not rapidly degradable	
Persistence and degradability	Not readily biodegradable in water.
Chemical oxygen demand (COD)	0.56 g O <sub>2</sub> /g substance
<b>2-methylpentane-1,5-diamine (15520-10-2)</b>	
Persistence and degradability	Readily biodegradable in water.
<b>Polyoxypropylenediamine (9046-10-0)</b>	
Not rapidly degradable	

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<b>Polyoxypropylenediamine (9046-10-0)</b>	
Persistence and degradability	Not readily biodegradable in water.
<b>2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)</b>	
Not rapidly degradable	
Persistence and degradability	Not readily biodegradable in water.
<b>cashew, nutshell liquid (8007-24-7)</b>	
Persistence and degradability	Readily biodegradable in water.
<b>Phenol, 4-nonyl-, branched (84852-15-3)</b>	
Not rapidly degradable	
Persistence and degradability	Biodegradability in soil: no data available. Inherently biodegradable.
<b>12.3. Bioaccumulative potential</b>	
<b>Cyclic Ethyleneamine (140-31-8)</b>	
BCF - Fish [1]	0.3 – 6.3 (OECD 305: Bioconcentration: Flow-Through Fish Test, 6 week(s), Cyprinus carpio, Flow-through system, Fresh water, Read-across)
Partition coefficient n-octanol/water (Log Pow)	-1.48 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>2-methylpentane-1,5-diamine (15520-10-2)</b>	
Partition coefficient n-octanol/water (Log Pow)	≤ 1 (Experimental value, US EPA, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
<b>Polyoxypropylenediamine (9046-10-0)</b>	
Partition coefficient n-octanol/water (Log Pow)	1.34 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
<b>2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)</b>	
Partition coefficient n-octanol/water (Log Pow)	-0.66 (Experimental value, EPA OPPTS 830.7550: Partition Coefficient (n-octanol/water), Shake Flask Method, 21.5 °C)
Bioaccumulative potential	Not bioaccumulative.
<b>cashew, nutshell liquid (8007-24-7)</b>	
Partition coefficient n-octanol/water (Log Pow)	> 6.7 (Practical experience/observation, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 20 °C)
Bioaccumulative potential	High potential for bioaccumulation (Log Kow > 5).
<b>Phenol, 4-nonyl-, branched (84852-15-3)</b>	
BCF - Fish [1]	1200 – 1300 (Equivalent or similar to OECD 305, 16 day(s), Gasterosteus aculeatus, Flow-through system, Salt water, Experimental value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	5.4 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 23 °C)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

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### 12.4. Mobility in soil

Cyclic Ethyleneamine (140-31-8)	
Surface tension	No data available in the literature
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	4.57 (log Koc, Read-across, GLP)
Ecology - soil	Low potential for mobility in soil.
2-methylpentane-1,5-diamine (15520-10-2)	
Surface tension	No data available in the literature
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.159 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Low potential for adsorption in soil.
Polyoxypropylenediamine (9046-10-0)	
Surface tension	Data waiving
Ecology - soil	No (test)data on mobility of the substance available.
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.32 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil.
cashew, nutshell liquid (8007-24-7)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	6.15 (log Koc)
Ecology - soil	Adsorbs into the soil.
Phenol, 4-nonyl-, branched (84852-15-3)	
Surface tension	38.9 mN/m (20 °C, EU Method A.5: Surface tension)
Ecology - soil	Adsorbs into the soil.

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

## SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA
14.1. UN number			
3082	UN3082	3082	3082

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DOT	TDG	IMDG	IATA
<b>14.2. Proper Shipping Name</b>			
Environmentally hazardous substances, liquid, n.o.s. (Phenol, 4-nonyl-, branched)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Phenol, 4-nonyl-, branched)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Phenol, 4-nonyl-, branched)	Environmentally hazardous substance, liquid, n.o.s. (Phenol, 4-nonyl-, branched)
<b>14.3. Transport hazard class(es)</b>			
9	9	9	9
<b>14.4. Packing group</b>			
III	III	III	III
<b>14.5. Environmental hazards</b>			
Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes
No supplementary information available			

### 14.6. Special precautions for user

<b>DOT</b>	
UN-No.(DOT)	: UN3082
DOT Special Provisions (49 CFR 172.102)	: 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies. 146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination. 173 - An appropriate generic entry may be used for this material. 335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s.," UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging. IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling. TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 155

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DOT Packaging Non Bulk (49 CFR 173.xxx) : 203  
DOT Packaging Bulk (49 CFR 173.xxx) : 241  
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : No Limit  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : No Limit  
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

### TDG

UN-No. (TDG) : UN3082  
TDG Special Provisions : 16 - (1) The technical name of at least one of the most dangerous substances that predominantly contributes to the hazard or hazards posed by the dangerous goods must be shown, in parentheses, on the shipping document following the shipping name in accordance with clause 3.5(1)(c)(ii)(A) of Part 3 (Documentation). The technical name must also be shown, in parentheses, on a small means of containment or on a tag following the shipping name in accordance with subsections 4.11(2) and (3) of Part 4 (Dangerous Goods Safety Marks).  
(2) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a shipping document or on a small means of containment when Canadian law for domestic transport or an international convention for international transport prohibits the disclosure of the technical name:  
(a) UN1544, ALKALOID SALTS, SOLID, N.O.S. or ALKALOIDS, SOLID, N.O.S;  
(b) UN1851, MEDICINE, LIQUID, TOXIC, N.O.S;  
(c) UN3140, ALKALOID SALTS, LIQUID, N.O.S. or ALKALOIDS, LIQUID, N.O.S;  
(d) UN3248, MEDICINE, LIQUID, FLAMMABLE, TOXIC, N.O.S; or  
(e) UN3249, MEDICINE, SOLID, TOXIC, N.O.S.  
(3) Despite subsection (1), the technical name for the following dangerous goods is not required to be shown on a small means of containment:  
(a) UN2814, INFECTIOUS SUBSTANCE, AFFECTING HUMANS; or  
(b) UN2900, INFECTIOUS SUBSTANCE, AFFECTING ANIMALS,99 - (1) Mixtures of solids that are not dangerous goods and liquids or solids that are UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, or UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, may be handled, offered for transport or transported as UN3077 if there is no visible liquid when the dangerous goods are loaded into a means containment and during transport.  
(2) These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of less than 450 kg of UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S, or less than 450 L of UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S, on a road vehicle or a railway vehicle. The dangerous goods must be contained in one or more small means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no accidental release of the dangerous goods that could endanger public safety.  
Explosive Limit and Limited Quantity Index : 5 L  
Excepted quantities (TDG) : E1  
Emergency Response Guide (ERG) Number : 171

### IMDG

Special provision (IMDG) : 274, 335, 969  
Limited quantities (IMDG) : 5 L  
Excepted quantities (IMDG) : E1  
Packing instructions (IMDG) : LP01, P001  
Packing provisions (IMDG) : PP1  
IBC packing instructions (IMDG) : IBC03  
Tank instructions (IMDG) : T4  
Tank special provisions (IMDG) : TP1, TP29  
EmS-No. (Fire) : F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE

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EmS-No. (Spillage) : S-F - SPILLAGE SCHEDULE Foxtrot - WATER-SOLUBLE MARINE POLLUTANTS  
Stowage category (IMDG) : A

### IATA

PCA Excepted quantities (IATA) : E1  
PCA Limited quantities (IATA) : Y964  
PCA limited quantity max net quantity (IATA) : 30kgG  
PCA packing instructions (IATA) : 964  
PCA max net quantity (IATA) : 450L  
CAO packing instructions (IATA) : 964  
CAO max net quantity (IATA) : 450L  
Special provision (IATA) : A97, A158, A197, A215  
ERG code (IATA) : 9L

### 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. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

2-methylpentane-1,5-diamine	CAS-No. 15520-10-2	≥ 1%
cashew, nutshell liquid	CAS-No. 8007-24-7	< 1%
Contains chemical(s) subject to TSCA 12b export notification if product is shipped outside the U.S		
Phenol, 4-nonyl-, branched	CAS-No. 84852-15-3	≥ 60%

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Phenol, 4-nonyl-, branched	CAS-No. 84852-15-3	≥ 60%
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### 15.2. International regulations

#### CANADA

#### Cyclic Ethyleneamine (140-31-8)

Listed on the Canadian DSL (Domestic Substances List)

#### Polyoxypropylenediamine (9046-10-0)

Listed on the Canadian DSL (Domestic Substances List)

#### 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)

Listed on the Canadian DSL (Domestic Substances List)

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

Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations

No additional information available

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### National regulations

#### Cyclic Ethyleneamine (140-31-8)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

#### Polyoxypropylenediamine (9046-10-0)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

#### 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

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

Listed on INSQ (Mexican National Inventory of Chemical Substances)

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

Component	State or local regulations
Cyclic Ethyleneamine(140-31-8)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) List

## SECTION 16: Other information

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Full text of H-phrases	
H227	Combustible liquid
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H361	Suspected of damaging fertility or the unborn child
H400	Very toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects



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This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.