

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations Issue date: 5/16/2024 Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : EP19-GROUT 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 (dermal) Category 4	H312	Harmful in contact with skin
Skin corrosion/irritation Category 1B	H314	Causes severe skin burns and eye damage
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 1B	H360	May damage fertility or the unborn child
Specific target organ toxicity – Single exposure, Category 3,	H335	May cause respiratory irritation
Respiratory tract irritation		

Respiratory tract irritation

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

Hazardous to the aquatic environment - Chronic Hazard Category 3

GHS US labeling

Hazard pictograms (GHS US)





H412



Harmful to aquatic life with long lasting effects

Signal word (GHS US) Danger

Hazard statements (GHS US) H312 - Harmful in contact with skin

H314 - Causes severe skin burns and eye damage

H317 - May cause an allergic skin reaction

H318 - Causes serious eye damage H335 - May cause respiratory irritation

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Precautionary statements (GHS US)

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H360 - May damage fertility or the unborn child

H412 - Harmful 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.

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

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.

P264 - Wash hands, forearms and face thoroughly after handling.

P271 - Use only outdoors or in a well-ventilated area.

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+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting.

P302+P352 - If on skin: Wash with plenty of water.

P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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. 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)

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.

P403+P233 - Store in a well-ventilated place. Keep container tightly closed.

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
Triethylenetetramine	CAS-No.: 112-24-3	30 – 60	Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Skin Sens. 1, H317 Aquatic Chronic 3, H412
Aliphatic amine*	CAS-No.: Trade Secret	≥ 30	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 STOT SE 3, H335

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Name	Product identifier	%	GHS US classification
Tetraethylenepentamine	CAS-No.: 112-57-2	< 10	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Aquatic Chronic 2, H411
2,4,6-tris(dimethylaminomethyl)phenol	CAS-No.: 90-72-2	≥ 1	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319
Amine*	CAS-No.: Trade Secret	< 1	Skin Corr. 1B, H314 Skin Sens. 1, H317 Repr. 1B, H360

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

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

SECTION 4: First-aid measures

4.1. Description of first aid measures

No additional information available

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

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

No additional information available

5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire-fighters

No additional information available

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

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6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

No additional information available

7.2. Conditions for safe storage, including any incompatibilities

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

EP19-GROUT Part B

No additional information available

Triethylenetetramine (112-24-3)

No additional information available

Amine

No additional information available

Aliphatic amine

No additional information available

Tetraethylenepentamine (112-57-2)

No additional information available

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

No additional information available

8.2. Appropriate engineering controls

No additional information available

8.3. Individual protection measures/Personal protective equipment

No additional information available

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquic

Color : Mixture contains one or more component(s) which have the following colour(s):

Colourless to yellow Colourless Yellow Light yellow light yellow

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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:

Ammonia odour Mild odour Amine-like odour Amine-like

Odor threshold No data available No data available pН No data available Melting point 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) : No data available 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 : No data available Explosive properties Oxidizing properties : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

No additional information available

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

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Acute toxicity (dermal) : Harmful in contact with skin.

Acute toxicity (inhalation) : Not classified

Acute toxicity (inhalation)	Not classified		
EP19-GROUT Part B			
ATE US (dermal)	1100 mg/kg body weight		
Triethylenetetramine (112-24-3)			
LD50 oral rat	1716 mg/kg body weight (BASF test, Rat, Experimental value, Oral)		
LD50 oral	2500 mg/kg		
LD50 dermal rabbit	1465 mg/kg body weight (BASF test, Rabbit, Experimental value, Dermal)		
LD50 dermal	550 mg/kg		
ATE US (oral)	1716 mg/kg body weight		
ATE US (dermal)	550 mg/kg body weight		
Amine			
LD50 oral rat	2150 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))		
LD50 oral	2150 mg/kg		
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 14 day(s))		
LD50 dermal rabbit	> 400 mg/kg Source: IUCLID		
LD50 dermal	3246 mg/kg		
ATE US (oral)	2150 mg/kg body weight		
ATE US (dermal)	3246 mg/kg body weight		
Tetraethylenepentamine (112-57-2)			
LD50 oral rat	3990 mg/kg		
LD50 oral	2100 mg/kg		
LD50 dermal rabbit	660 mg/kg		
LD50 dermal	660 mg/kg		
LC50 Inhalation - Rat	> 9.9 mg/l air (8 h, Rat, Male, Literature study, Inhalation)		
ATE US (oral)	500 mg/kg body weight		
ATE US (dermal)	660 mg/kg body weight		
2,4,6-tris(dimethylaminomethyl)phenol (90-72	-2)		
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		
Skin corrosion/irritation	Causes severe skin burns.		

Skin corrosion/irritation : Causes severe skin burns.

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pH 10 (1 %, 20 °C) Amine pH No data available in the literature Tetraethylenepentamine (112-57-2) pH 11.8 (2 %, 20 °C) 2.4.6-tris(dimethylaminomethyl)phenol (90-72-2) pH 11 (10 %) Serious eye damage/irritation : Causes serious eye damage. Triethylenetetramine (112-24-3) pH 10 (1 %, 20 °C) Amine pH No data available in the literature Tetraethylenepentamine (112-57-2) pH 11.8 (2 %, 20 °C) 4.6-tris(dimethylaminomethyl)phenol (90-72-2) pH 11 (10 %) Respiratory or skin sensitization : May cause an allergic skin reaction. Germ cell mutagenicity : Not classified Germ cell mutagenicity : Not classified Carcinogenicity : Not classified Reproductive toxicity : Not classified Reproductive toxicity : Not classified STOT-single exposure : May cause respiratory irritation. STOT-angle exposure : Not classified Amine NOAEL (demai.rat/rabbit.90 days) 1000 mg/kg body weight Animat. rat. Guideline: OECD Guideline 410 (Repeated Dose Demail Toxicity; 21/28-Day Study) Aspiration hazard : Not data available in the literature Amine Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm/% (20 °C) 2.4.6-trist(dimethylaminomethyl)phenol (90-72-2) Viscosity, kinematic 206.186 mm/%	Triethylenetetramine (112-24-3)				
Tetraethylenepontamine (112-57-2) pH	pH 10 (1 %, 20 °C)				
Tetraethylenepentamine (112-57-2) pH	Amine	Amine			
pH 11.8 (2 %, 20 °C) 2.4,6-tris(dimethylaminomethyl)phenol (90-72-2) pH 11 (10 %) Serious eye damage/irritation : Causes serious eye damage. Triethylenetetramine (112-24-3) pH 10 (1 %, 20 °C) Amine pH No data available in the literature Tetraethylenepentamine (112-57-2) pH 11.8 (2 %, 20 °C) 2.4,6-tris(dimethylaminomethyl)phenol (90-72-2) pH 11 (10 %) Respiratory or skin sensitization : May cause an allergic skin reaction. Gern cell mutagenicity : Not classified Carcinogenicity : Not classified Reproductive toxicity : May damage fertility or the unborn child. STOT-single exposure : May cause respiratory irritation. Aliphatic amine STOT-repated exposure : Not classified Amine NOAEL (demal,rat/rabbit,90 days) 1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Demal Toxicity: 21/28-Day Study) Aspiration hazard : Not data available in the literature Amine Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-24-3) Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm²/s (20 °C) 2.4,6-tris(dimethylaminomethyl)phenol (90-72-2)	pH	No data available in the literature			
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2) pH	Tetraethylenepentamine (112-57-2)				
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Triethylenetetramine (112-24-3) pH	pH	11 (10 %)			
pH 10 (1 %, 20 °C) Amine pH No data available in the literature Tetraethylenepentamine (112-57-2) pH 11.8 (2 %, 20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2) pH 11 (10 %) Respiratory or skin sensitization : May cause an allergic skin reaction. Germ cell mutagenicity : Not classified Reproductive toxicity : May damage fertility or the unborn child. STOT-single exposure : May cause respiratory irritation. Aliphatic amine STOT-repeated exposure May cause respiratory irritation. STOT-repeated exposure : Not classified Amine NOAEL (dermal,rat/rabbit,90 days) 1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/26-Day Study) Aspiration hazard : No classified Viscosity, kinematic No data available in the literature Triethylenetetramine (112-24-3) Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm²/s (20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	Serious eye damage/irritation :	Causes serious eye damage.			
Amine pH No data available in the literature Tetraethylenepentamine (112-57-2) pH 11.8 (2 %, 20 °C) 2.4,6-tris(dimethylaminomethyl)phenol (90-72-2) pH 11 (10 %) Respiratory or skin sensitization : May cause an allergic skin reaction. Germ cell mutagenicity : Not classified Carcinogenicity : Not classified Reproductive toxicity : May damage fertility or the unborn child. STOT-single exposure : May cause respiratory irritation. Aliphatic amine STOT-single exposure : Not classified Amine NOAEL (dermal,rat/rabbit,90 days) 1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study) Aspiration hazard : Not classified Triethylenetetramine (112-24-3) Viscosity, kinematic No data available in the literature Amine Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm% (20 °C) 2.4,6-tris(dimethylaminomethyl)phenol (90-72-2)	Triethylenetetramine (112-24-3)				
Tetraethylenepentamine (112-57-2) pH	рН	10 (1 %, 20 °C)			
Tetraethylenepentamine (112-57-2) PH	Amine				
pH 11.8 (2 %, 20 °C) 2.4,6-tris(dimethylaminomethyl)phenol (90-72-2) pH 11 (10 %) Respiratory or skin sensitization : May cause an allergic skin reaction. Germ cell mutagenicity : Not classified Carcinogenicity : Not classified Reproductive toxicity : May damage fertility or the unborn child. STOT-single exposure : May cause respiratory irritation. Aliphatic amine STOT-repeated exposure May cause respiratory irritation. STOT-repeated exposure : Not classified Amine NOAEL (dermal,rat/rabbit,90 days) 1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study) Aspiration hazard : Not classified Viscosity, kinematic No data available Triethylenetetramine (112-24-3) Viscosity, kinematic No data available in the literature Amine Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm²/s (20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	рН	No data available in the literature			
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2) pH	Tetraethylenepentamine (112-57-2)				
Respiratory or skin sensitization : May cause an allergic skin reaction. Germ cell mutagenicity : Not classified Carcinogenicity : Not classified Reproductive toxicity : May damage fertility or the unborn child. STOT-single exposure : May cause respiratory irritation. Aliphatic amine STOT-ringle exposure May cause respiratory irritation. STOT-repeated exposure May cause respiratory irritation. STOT-repeated exposure Not classified Amine NOAEL (dermal, rat/rabbit, 90 days) 1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study) Aspiration hazard : Not classified Viscosity, kinematic : No data available Triethylenetetramine (112-24-3) Viscosity, kinematic No data available in the literature Amine Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm²/s (20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	рН	11.8 (2 %, 20 °C)			
Respiratory or skin sensitization : May cause an allergic skin reaction. Germ cell mutagenicity : Not classified Carcinogenicity : Not classified Reproductive toxicity : May damage fertility or the unborn child. STOT-single exposure : May cause respiratory irritation. Aliphatic amine STOT-single exposure May cause respiratory irritation. STOT-repeated exposure May cause respiratory irritation. STOT-repeated exposure Not classified Amine NOAEL (dermal,rat/rabbit,90 days) 1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study) Aspiration hazard : Not classified Viscosity, kinematic : No data available Triethylenetetramine (112-24-3) Viscosity, kinematic No data available in the literature Amine Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm²/s (20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	2,4,6-tris(dimethylaminomethyl)phenol (90-72	-2)			
Germ cell mutagenicity : Not classified Carcinogenicity : Not classified Reproductive toxicity : May damage fertility or the unborn child. STOT-single exposure : May cause respiratory irritation. Aliphatic amine STOT-single exposure : May cause respiratory irritation. STOT-repeated exposure : Not classified Amine NOAEL (dermal,rat/rabbit,90 days)	рН	11 (10 %)			
STOT-single exposure	Germ cell mutagenicity : Carcinogenicity : Reproductive toxicity :	Not classified Not classified May damage fertility or the unborn child.			
STOT-repeated exposure : Not classified Amine NOAEL (dermal,rat/rabbit,90 days)	Aliphatic amine				
Amine NOAEL (dermal,rat/rabbit,90 days) 1000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study) Aspiration hazard : Not classified Viscosity, kinematic : No data available Triethylenetetramine (112-24-3) Viscosity, kinematic No data available in the literature Amine Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm²/s (20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	STOT-single exposure	May cause respiratory irritation.			
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Toxicity: 21/28-Day Study) Aspiration hazard : Not classified Viscosity, kinematic : No data available Triethylenetetramine (112-24-3) Viscosity, kinematic No data available in the literature Amine Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm²/s (20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	Amine				
Viscosity, kinematic : No data available Triethylenetetramine (112-24-3) Viscosity, kinematic No data available in the literature Amine Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm²/s (20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	NOAEL (dermal,rat/rabbit,90 days)				
Viscosity, kinematic Amine Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm²/s (20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	·				
Amine Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm²/s (20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	Triethylenetetramine (112-24-3)				
Viscosity, kinematic No data available in the literature Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm²/s (20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	Viscosity, kinematic	No data available in the literature			
Tetraethylenepentamine (112-57-2) Viscosity, kinematic 0.096 mm²/s (20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	Amine				
Viscosity, kinematic 0.096 mm²/s (20 °C) 2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	Viscosity, kinematic	No data available in the literature			
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)	Tetraethylenepentamine (112-57-2)				
	Viscosity, kinematic	0.096 mm²/s (20 °C)			
Viscosity, kinematic 206.186 mm²/s	2,4,6-tris(dimethylaminomethyl)phenol (90-72	-2)			
	Viscosity, kinematic	206.186 mm²/s			

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SECTION 12: Ecological information

12.1. Toxicity

Triethylenetetramine (112-24-3)		
LC50 - Fish [1]	495 mg/l (96 h, Pimephales promelas, Fresh water, Literature study)	
EC50 - Crustacea [1]	31.1 mg/l (Equivalent or similar to OECD 202, 48 h, Daphnia magna, Literature study)	
ErC50 algae	27 mg/l	
NOEC chronic algae	0.468 mg/l	
Amine		
LC50 - Fish [1]	640 mg/l (96 h, Pimephales promelas, Fresh water, Calculated value, Lethal)	
EC50 - Crustacea [1]	22 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Locomotor effect)	
ErC50 algae	358 mg/l (DIN 38412-9, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Nominal concentration)	
Tetraethylenepentamine (112-57-2)		
LC50 - Fish [1]	420 mg/l (EU Method C.1, 96 h, Poecilia reticulata, Semi-static system, Fresh water, Experimental value, GLP)	
EC50 - Crustacea [1]	24.1 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Experimental value, GLP)	
ErC50 algae	6.8 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Selenastrum capricornutum, Experimental value)	
2,4,6-tris(dimethylaminomethyl)phenol (90-72	-2)	
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)	

12.2. Persistence and degradability

Triethylenetetramine (112-24-3)		
Not rapidly degradable		
Persistence and degradability Not readily biodegradable in water.		
Amine		
Not rapidly degradable		
Persistence and degradability Readily biodegradable in water.		
Chemical oxygen demand (COD) 1.07 g O ₂ /g substance		

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Tetraethylenepentamine (112-57-2)		
Not rapidly degradable		
Persistence and degradability Not readily biodegradable in water.		
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)		
Not rapidly degradable		
Persistence and degradability Not readily biodegradable in water.		
42.2 Biogrammulative metantial		

12.3. Bioaccumulative potential

Triethylenetetramine (112-24-3)		
Thethylenetetralinine (112-24-3)		
Partition coefficient n-octanol/water (Log Pow)	-2.65 (Estimated value, KOWWIN)	
Bioaccumulative potential	Not bioaccumulative.	
Amine		
BCF - Fish [1]	0.2 – 3.7 (OECD 305: Bioconcentration: Flow-Through Fish Test, 42 day(s), Cyprinus carpio, Flow-through system, Fresh water, Experimental value)	
Partition coefficient n-octanol/water (Log Pow)	-1.46 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)	
Bioaccumulative potential	Not bioaccumulative.	
Tetraethylenepentamine (112-57-2)		
BCF - Other aquatic organisms [1]	3.162 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)	
Partition coefficient n-octanol/water (Log Pow)	-3.16 (Estimated value, KOWWIN)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).	
2,4,6-tris(dimethylaminomethyl)phenol (90-72-2)		
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.	

12.4. Mobility in soil

Triethylenetetramine (112-24-3)		
Surface tension	No data available in the literature	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.885 (log Koc, SRC PCKOCWIN v2.0, Calculated value)	
Ecology - soil Highly mobile in soil.		
Amine		
Surface tension	No data available in the literature	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.92 – 1.63 (log Koc, PCKOCWIN v1.66, Calculated value)	
Ecology - soil Highly mobile in soil.		
Aliphatic amine		
Mobility in soil	1555 Source: EPISUITE	

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Tetraethylenepentamine (112-57-2)		
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.04 (log Koc, Calculated value)	
Ecology - soil Low potential for mobility in soil.		
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.		

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

No additional information available

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

DOT	TDG	IMDG	IATA	
14.1. UN number	4.1. UN number			
2259	UN2259	2259	2259	
14.2. Proper Shipping Name				
Triethylenetetramine	TRIETHYLENETETRAMINE	TRIETHYLENETETRAMINE	Triethylenetetramine	
14.3. Transport hazard class(es	5)			
8	8	8	8	
CORROSIVE	8	8	8	
14.4. Packing group				
II	II	II	II	
14.5. Environmental hazards				
Dangerous for the environment: No	Dangerous for the environment: No	Dangerous for the environment: No Marine pollutant: No	Dangerous for the environment: No	
No supplementary information available				

14.6. Special precautions for user

DOT

UN-No.(DOT) : UN2259

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DOT Special Provisions (49 CFR 172.102)

: B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are not authorized.

IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). 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.

T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3)

TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.

DOT Packaging Exceptions (49 CFR 173.xxx) : 154 DOT Packaging Non Bulk (49 CFR 173.xxx) 202 DOT Packaging Bulk (49 CFR 173.xxx) 242 DOT Quantity Limitations Passenger aircraft/rail (49 : 1 L

CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49

CFR 175.75)

DOT Vessel Stowage Location

: B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a

passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters",52 - Stow "separated from" acids

: 30 L

TDG

UN-No. (TDG) : UN2259 Explosive Limit and Limited Quantity Index : 1L Excepted quantities (TDG) : E2 Passenger Carrying Road Vehicle or Passenger : 1 L Carrying Railway Vehicle Index

Emergency Response Guide (ERG) Number : 153

IMDG

Limited quantities (IMDG) : 1L Excepted quantities (IMDG) E2 P001 Packing instructions (IMDG) IBC packing instructions (IMDG) IBC02 Tank instructions (IMDG) : T7 : TP2 Tank special provisions (IMDG)

: F-A - FIRE SCHEDULE Alfa - GENERAL FIRE SCHEDULE EmS-No. (Fire) : S-B - SPILLAGE SCHEDULE Bravo - CORROSIVE SUBSTANCES EmS-No. (Spillage)

Stowage category (IMDG) : B : SW2 Stowage and handling (IMDG)

Segregation (IMDG) SGG18, SG35

Properties and observations (IMDG) Moderately viscous, yellow combustible liquid with an ammoniacal odour. Miscible with water.

> Strongly alkaline. Can form explosive mixtures with nitric acid. When involved in a fire, evolves toxic gases. Corrosive to copper and copper alloys. Reacts violently with acids. Liquid and

vapours cause burns to skin, eyes and mucous membranes. Causes skin allergy.

IATA

PCA Excepted quantities (IATA) E2 Y840 PCA Limited quantities (IATA) PCA limited quantity max net quantity (IATA) : 0.5L PCA packing instructions (IATA) : 851 PCA max net quantity (IATA) : 1L

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CAO packing instructions (IATA) : 855
CAO max net quantity (IATA) : 30L
ERG code (IATA) : 8L

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

15.2. International regulations

CANADA

Triethylenetetramine (112-24-3)

Listed on the Canadian DSL (Domestic Substances List)

Amine

Listed on the Canadian DSL (Domestic Substances List)

Aliphatic amine

Listed on the Canadian DSL (Domestic Substances List)

Tetraethylenepentamine (112-57-2)

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)

EU-Regulations

No additional information available

National regulations

Triethylenetetramine (112-24-3)

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Amine

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Tetraethylenepentamine (112-57-2)

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)

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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
Triethylenetetramine(112-24-3)	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
Amine()	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
Tetraethylenepentamine(112-57-2)	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	
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
H335	May cause respiratory irritation
H360	May damage fertility or the unborn child
H411	Toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

Safety Data Sheet (SDS), USA

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.