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Product/ingredient name	Test	Species	Result/Result type
Triethylenetetramine	OECD 414 Prenatal Developmental Toxicity Study	Rat	Negative - Oral
	OECD 414 Prenatal Developmental Toxicity Study	Rabbit	Negative - Dermal

### Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Diethylenetriamine	Category 3	Not applicable.	Respiratory tract irritation

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Harmful if inhaled. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : Causes severe burns. May cause an allergic skin reaction.
- Ingestion** : May cause burns to mouth, throat and stomach.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure

- Potential immediate effects** : Not available.

## Section 11. Toxicological information

**Potential delayed effects** : Not available.

### Potential chronic health effects

Product/ingredient name	Test	Endpoint	Species	Result
Diethylenetriamine	OECD	Sub-chronic NOEL Oral	Rat - Male, Female	70 to 80 mg/kg/d
	No official guidelines	Chronic NOAEL Dermal	Rat - Male, Female	114 mg/kg/d
Triethylenetetramine	No official guidelines	Sub-acute NOEC Inhalation Vapor	Rat - Male, Female	550 mg/m <sup>3</sup>
	OECD 408 Repeated Dose 90-Day Oral Toxicity Study in Rodents	Sub-chronic NOAEL Oral	Rat - Male, Female	50 mg/kg/d

- General** : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	7835.5 mg/kg
Dermal	5391.2 mg/kg
Inhalation (dusts and mists)	1.202 mg/l

**Other information** : Not available.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Test	Endpoint	Exposure	Species	Result
Diethylenetriamine	No official guidelines	Acute EC50	48 hours Static	Daphnia	32 mg/l
	OECD 201 Alga, Growth Inhibition Test	Acute EbC50 (biomass)	72 hours Static	Algae	1164 mg/l
	EU EC C.1 Acute Toxicity for Fish	Acute LC50	96 hours Semi-static	Fish	430 mg/l
	OECD 201 Alga, Growth Inhibition Test	Chronic NOEC	72 hours Static	Algae	10 mg/l
	No official guidelines	Chronic NOEC	3 hours Static	Bacteria	6 mg/l
	EU	Chronic NOEC	21 days	Daphnia	5.6 mg/l

## Section 12. Ecological information

Triethylenetetramine	OECD OECD 210 - Fish, Early-Life Stage Toxicity Test No official guidelines	Chronic	NOEC	Semi-static 28 days Semi-static	Fish	10	mg/l
		Acute	EC50	30 minutes Static	Bacteria	800	mg/l
	EU EC C.2 Acute Toxicity for Daphnia	Acute	EC50	48 hours Static	Daphnia	31.1	mg/l
	OECD 201 Alga, Growth Inhibition Test	Acute	ErC50 (growth rate)	72 hours Semi-static	Algae	20	mg/l
	EPA OPPTS EPA OTS 797.1400 No official guidelines	Acute	LC50	96 hours Static	Fish	330	mg/l
		Chronic	EC10	30 minutes Static	Bacteria	42.5	mg/l
	OECD OECD 202: Part II (Daphnia sp., Reproduction Test OECD 201 Alga, Growth Inhibition Test	Chronic	EC10	21 days Semi-static	Daphnia	1.9	mg/l
	Chronic	NOECr	72 hours Semi-static	Algae	<2.5	mg/l	

### Persistence and degradability

Product/ingredient name	Test	Period	Result
Diethylenetriamine	OECD 301D Ready Biodegradability - Closed Bottle Test	21 days	87 %
Triethylenetetramine	OECD 302A Inherent Biodegradability: Modified SCAS Test	84 days	20 %
	OECD 301D Ready Biodegradability - Closed Bottle Test	162 days	0 %

**Conclusion/Summary** : Diethylenetriamine Readily biodegradable  
Triethylene tetramine Not biodegradable

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Diethylenetriamine	-	50%; 0.11 day(s)	Not readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Diethylenetriamine	-1.58	0.3 to 6.3	low
Triethylenetetramine	-2.65	-	low

### Mobility in soil

Not available.

**Other adverse effects** : No known significant effects or critical hazards.

### Other ecological information

**BOD5** : Not determined.  
**COD** : Not determined.  
**TOC** : Not determined.

## Section 13. Disposal considerations

### Disposal methods





: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.




## Section 14. Transport information

### Proper shipping name

**DOT** : DIETHYLENETRIAMINE MIXTURE. Marine pollutant (Dimer fatty acid (c18) polyamidoamine resin)  
**TDG** : DIETHYLENETRIAMINE MIXTURE. Marine pollutant (Dimer fatty acid (c18) polyamidoamine resin)  
**IMDG** : DIETHYLENETRIAMINE MIXTURE. Marine pollutant (Dimer fatty acid (c18) polyamidoamine resin)  
**IATA** : DIETHYLENETRIAMINE MIXTURE

Regulatory information	UN number	Classes	PG*	Label	Additional information
<b>DOT Classification</b>	UN2079	8	II	 	Marine pollutants are only regulated for bulk and vessel shipments, per 49CFR171.4 (c) Exceptions. Except when all or part of the transportation is by vessel, the requirements of this subchapter specific to marine pollutants do not apply to non-bulk packagings transported by motor vehicle, rail car or aircraft.
<b>TDG Classification</b>	UN2079	8	II	 	-

## Section 14. Transport information

<b>IMDG Classification</b>	UN2079	8	II	 	<b>Emergency schedules (EmS)</b> F-A S-B
<b>IATA Classification</b>	UN2079	8	II		<b>Passenger and Cargo Aircraft</b> Quantity limitation: 1 L Packaging instructions: 851 <b>Cargo Aircraft Only</b> Quantity limitation: 30 L Packaging instructions: 855

PG\* : Packing group

## Section 15. Regulatory information

### Safety, health and environmental regulations specific for the product

#### United States Regulations

- TSCA 8(b) inventory** : All components are listed or exempted.
- TSCA 5(a)2 final significant new use rule (SNUR)** : No ingredients listed.
- TSCA 5(e) substance consent order** : No ingredients listed.
- TSCA 12(b) export notification** : No ingredients listed.
- SARA 311/312** : Immediate (acute) health hazard
- Clean Air Act - Ozone Depleting Substances (ODS)** : This product does not contain nor is it manufactured with ozone depleting substances.
- SARA 313** : No ingredients listed.
- CERCLA Hazardous substances** : No ingredients listed.

#### State regulations

- PENNSYLVANIA - RTK** : Diethylenetriamine, Triethylenetetramine, SILICA
- California Prop 65** : This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

## Section 15. Regulatory information

### Canadian regulations

- CEPA DSL** : At least one component is not listed.
- WHMIS Classes** : Class D-1B: Material causing immediate and serious toxic effects (Toxic).  
Class D-2B: Material causing other toxic effects (Toxic).  
Class E: Corrosive material

**This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.**

### Brazil Regulations

- Classification system used** : Norma ABNT-NBR 14725-2:2012

### International lists

- Australia inventory (AICS)**: At least one component is not listed.  
**China inventory (IECSC)**: All components are listed or exempted.  
**Japan inventory**: Not determined.  
**Korea inventory**: At least one component is not listed.  
**Malaysia Inventory (EHS Register)**: Not determined.  
**New Zealand Inventory of Chemicals (NZIoC)**: At least one component is not listed.  
**Philippines inventory (PICCS)**: At least one component is not listed.  
**Taiwan inventory (CSNN)**: Not determined.

## Section 16. Other information

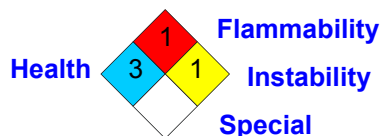
**Hazardous Material Information System (U.S.A.)** :

Health	3
Flammability	1
Physical hazards	1
Personal protection	

**The customer is responsible for determining the PPE code for this material.**

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**National Fire Protection Association (U.S.A.)** :



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## Section 16. Other information

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