

Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : 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 skin irritation. 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** : Adverse symptoms may include the following:
 - reduced fetal weight
 - increase in fetal deaths
 - skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
 - pain or irritation
 - redness
 - blistering may occur
 - reduced fetal weight
 - increase in fetal deaths
 - skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
 - stomach pains
 - reduced fetal weight
 - increase in fetal deaths
 - skeletal malformations

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.
- Potential delayed effects** : Not available.

Potential chronic health effects

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Product/ingredient name	Test	Endpoint	Species	Result
Aminoethylpiperazine	OECD 422 Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test	Sub-acute NOAEL Oral	Rat - Male, Female	151 to 285 mg/kg/d
	OECD 410 Repeated Dose Dermal Toxicity: 21/28-day Study	Sub-acute NOAEL Dermal	Rat - Male, Female	>1000 mg/kg/d
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
	No official guidelines	Sub-acute NOEC Inhalation Vapor	Rat - Male, Female	550 mg/m ³
Benzyl Alcohol	-	Sub-chronic NOAEL Oral	Rat - Male, Female	400 mg/kg
	OECD 412 Repeated Dose Inhalation Toxicity: 28-day or 14-day Study	Sub-chronic NOEC Inhalation Dusts and mists	Rat - Male, Female	1072 mg/m ³

- 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** : Suspected of damaging the unborn child.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : Suspected of damaging fertility.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	34686.3 mg/kg
Dermal	16475.5 mg/kg
Inhalation (dusts and mists)	10.88 mg/l

Other information : Not available.

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Toxicity



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Product/ingredient name	Test	Endpoint	Exposure	Species	Result
2-propenenitrile polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[2-(1-piperazinyl)ethyl]amino butyl-terminated	OECD 201 Alga, Growth Inhibition Test	Acute EC50	72 hours	Algae	>1000 mg/l
	OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test	Acute EC50	48 hours	Daphnia	<1000 mg/l
para-t-butylphenol	-	Acute EC50	72 hours	Algae	11.2 mg/l
	-	Acute EC50	5 hours	Bacteria	0.2 mg/l
	Unknown guidelines	Acute EC50	24 hours	Daphnia	4.8 mg/l
	Not known				
	DIN DIN 38412 Part 11	Acute EC50	48 hours	Daphnia	3.9 mg/l
	Unknown guidelines	Acute IC10	5 hours	Bacteria	140 mg/l
	Not known				
Aminoethylpiperazine	Unknown guidelines	Acute IC50	5 hours	Bacteria	>140 mg/l
	Not known				
	-	Acute LC50	96 hours	Fish	5.1 mg/l
	Unknown guidelines	Acute LC50	48 hours	Fish	1.5 mg/l
	Not known				
	OECD 201 Alga, Growth Inhibition Test	Acute EC50	72 hours	Algae	>1000 mg/l
	OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test	Acute EC50	48 hours Static	Daphnia	58 mg/l
-	Acute LC50	96 hours Static	Fish	2190 mg/l	
Diethylenetriamine	No official guidelines	Chronic EC10	2 hours	Bacteria	250 mg/l
	-	Chronic EC20	1 hours	Bacteria	1600 mg/l
	ISO ISO 9509:2006 - Toxicity test for assessing the inhibition of nitrification of activated sludge microorganisms	Chronic EC50	2 hours Static	Bacteria	511 mg/l
	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 Semi-static	Daphnia	5.6 mg/l	
OECD OECD 210 - Fish, Early-Life Stage Toxicity Test	Chronic NOEC	28 days Semi-static	Fish	10 mg/l	



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Benzyl Alcohol	OECD 202 <i>Daphnia</i> sp. Acute Immobilisation Test	Acute	EC50	48 hours	Daphnia	230	mg/l
	OECD 201 Alga, Growth Inhibition Test	Acute	EgC50	72 hours Static	Algae	770	mg/l
	EPA OPPTS	Acute	LC50	96 hours Static	Fish	460	mg/l
	OECD 201 Alga, Growth Inhibition Test	Chronic	NOEC	72 hours Static	Algae	310	mg/l
	OECD 211 <i>Daphnia Magna</i> Reproduction Test	Chronic	NOEC	21 days Semi-static	Daphnia	51	mg/l

Conclusion/Summary : Benzyl Alcohol Not toxic or harmful to aquatic organisms.

Persistence and degradability

Product/ingredient name	Test	Period	Result
2-propenenitrile polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[2-(1-piperazinyl)ethyl]amino butyl-terminated para-t-butylphenol	-	- days	- %
para-t-butylphenol	OECD 301A Ready Biodegradability - DOC Die-Away Test	28 days	98 %
Aminoethylpiperazine	OECD 301F Ready Biodegradability - Manometric Respirometry Test	28 days	0 %
Diethylenetriamine	OECD 301D Ready Biodegradability - Closed Bottle Test	21 days	87 %
Benzyl Alcohol	OECD 301A Ready Biodegradability - DOC Die-Away Test	21 days	95 to 97 %

Conclusion/Summary : para-t-butylphenol Readily biodegradable
 Aminoethylpiperazine Not readily biodegradable.
 Diethylenetriamine Readily biodegradable

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
para-t-butylphenol	-	-	Readily
Aminoethylpiperazine	-	50%; 0.08 day(s)	Not readily
Diethylenetriamine	-	50%; 0.11 day(s)	Readily
Benzyl Alcohol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
para-t-butylphenol	2.44	-	low
Aminoethylpiperazine	-1.48	-	low
Diethylenetriamine	-1.58	0.3 to 6.3	low
Benzyl Alcohol	1.1	1	low

Mobility in soil

Not available.

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



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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



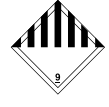

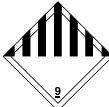

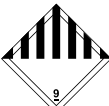

Proper shipping name

- DOT** : Environmentally hazardous substance, liquid, n.o.s. (DIMER FATTY ACID (C18) POLYAMIDOAMINE RESIN, PARA-T-BUTYLPHENOL). Marine pollutant
- TDG** : Environmentally hazardous substance, liquid, n.o.s. (DIMER FATTY ACID (C18) POLYAMIDOAMINE RESIN, PARA-T-BUTYLPHENOL). Marine pollutant
- IMDG** : Environmentally hazardous substance, liquid, n.o.s. (DIMER FATTY ACID (C18) POLYAMIDOAMINE RESIN, PARA-T-BUTYLPHENOL). Marine pollutant
- IATA** : Environmentally hazardous substance, liquid, n.o.s. (DIMER FATTY ACID (C18) POLYAMIDOAMINE RESIN, PARA-T-BUTYLPHENOL)

Regulatory information	UN number	Classes	PG*	Label	Additional information



Section 14. Transport information

DOT Classification	UN3082	9	III	 	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.
TDG Classification	UN3082	9	III	 	-
IMDG Classification	UN3082	9	III	 	Emergency schedules (EmS) F-A, S-F
IATA Classification	UN3082	9	III	 	Passenger and Cargo Aircraft Quantity limitation: 450 L Packaging instructions: 964 Cargo Aircraft Only Quantity limitation: 450 L Packaging instructions: 964

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.



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- TSCA 5(e) substance consent order** : No ingredients listed.
- TSCA 12(b) export notification** : No ingredients listed.
- SARA 311/312** : Immediate (acute) health hazard
Delayed (chronic) 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** : No ingredients listed.
- 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.

Canadian regulations

- CEPA DSL** : All components are listed or exempted.
- WHMIS Classes** : Class D-2B: Material causing other toxic effects (Toxic).

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)**: All components are listed or exempted.
China inventory (IECSC): Not determined.
Japan inventory: All components are listed or exempted.
Korea inventory: Not determined.
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	0
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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✔ Indicates information that has changed from previously issued version.

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Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent



Section 16. Other information

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