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SAFETY DATA SHEET

Classified in accordance 29 CFR 1910.1200

1. Identification

Product identifier

Product No.:	Product name:	Common name(s), synonym(s)
371073	BD E-Z Scrub™ surgical scrub brush impregnated with 4% CHG. Color code red.	No data available

Recommended restrictions

Recommended use: Skin Antiseptic

Restrictions on use: None known.

Manufacturer/Importer/Distributor Information

Manufacturer

Company Name: Becton Dickinson
Address: 9450 South State Street
Sandy, UT 84070 USA

Telephone: 1-801-565-2300 (US 24 hour)
Contact Person: Regulatory Affairs

Emergency telephone number: CHEMTREC 1 800 424 9300

2. Hazard(s) identification

Hazard Classification

Health Hazards

Carcinogenicity

Category 2

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Environmental Hazards

Acute hazards to the aquatic environment	Category 1
Chronic hazards to the aquatic environment	Category 2

Label Elements

Hazard Symbol:



Signal Word: Warning
Hazard Statement: H351: Suspected of causing cancer.
H400: Very toxic to aquatic life.
H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention: P202: Do not handle until all safety precautions have been read and understood.
P273: Avoid release to the environment.
P281: Use personal protective equipment as required.

Response: P308+P313: IF exposed or concerned: Get medical advice/attention.
P391: Collect spillage.

Storage: P405: Store locked up.

Disposal: P501: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients



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Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%) [*]
Nonylphenol, ethoxylated	No data available.	9016-45-9	5%
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimidamide (2:1)	No data available.	18472-51-0	4.1%
Diethanolamine	No data available.	111-42-2	0.2%
Octadecanoic acid	No data available.	57-11-4	0.165%
Sodium hydroxide (Na(OH))	No data available.	1310-73-2	0.01%
Hydrochloric acid	No data available.	7647-01-0	0.01%
1,4-Dioxane	No data available.	123-91-1	0.01%
Oxirane	No data available.	75-21-8	0.001%

^{*} All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Description of first aid measures

General information:	Get medical attention if symptoms occur. Ears: Flush ears with copious amounts of running water for at least 15 minutes.
Inhalation:	Get medical attention if symptoms occur. Over exposure may cause headache, fatigue, dizziness, loss of coordination and unconsciousness. Vapor has anesthetic properties.
Skin Contact:	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.
Eye contact:	If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.



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Ingestion:	If swallowed, do NOT induce vomiting. Give a glass of water. Wash out mouth with water, treat with gastric lavage, using milk, egg white or mild soap.
Personal Protection for First-aid Responders:	No data available.
Most important symptoms and effects, both acute and delayed Symptoms:	No data available.
Hazards:	Suspected of causing cancer.
Indication of immediate medical attention and special treatment needed	
Treatment:	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.

5. Fire-fighting measures

General Fire Hazards:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Suitable (and unsuitable) extinguishing media	
Suitable extinguishing media:	Water spray, dry powder or carbon dioxide.
Unsuitable extinguishing media:	No data available.
Special hazards arising from the substance or mixture:	Fire causes formation of toxic gases.
Special protective equipment and precautions for fire-fighters	
Special fire-fighting procedures:	No data available.
Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures



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Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment.

Accidental release measures:

No data available.

Methods and material for containment and cleaning up:

Absorb spillage with suitable absorbent material. Transfer to a container for disposal. Clean surface thoroughly to remove residual contamination.

Environmental Precautions:

Do not release into the environment.

7. Handling and storage

Handling

Technical measures:

No data available.

Local/Total ventilation:

No data available.

Safe handling advice:

No specific precautions.

Contact avoidance measures:

No data available.

Storage

Safe storage conditions:

Store at room temperature (20-25°C). Avoid excessive heat (40°C). Store isolated from oxidizers, ignition sources, and explosives. Consult local fire codes for additional storage information.

Safe packaging materials:

No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits



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Chemical Identity	Type	Exposure Limit Values	Source
Diethanolamine	TWA	3 ppm 15 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	TWA	3 ppm 15 mg/m ³	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
	ST ESL	2 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	AN ESL	0.2 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL	10 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	AN ESL	1 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	TWA PEL	0.46 ppm 2 mg/m ³	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
Diethanolamine - Inhalable fraction and vapor.	TWA	1 mg/m ³	US. ACGIH Threshold Limit Values, as amended
Diethanolamine	REL	3 ppm 15 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
Octadecanoic acid - Particulate.	AN ESL	5 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Octadecanoic acid - Vapor.	ST ESL	1,000 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Octadecanoic acid - Particulate.	ST ESL	50 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Octadecanoic acid - Vapor.	AN ESL	100 µg/m ³	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Octadecanoic acid	TWA	10 mg/m ³	US. ACGIH Threshold Limit Values, as amended



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Sodium hydroxide (Na(OH))	Ceiling		2 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	Ceiling		2 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
Sodium hydroxide (Na(OH)) - Particulate.	AN ESL		2 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL		20 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
Sodium hydroxide (Na(OH))	Ceiling		2 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
	Ceiling		2 mg/m3	US. ACGIH Threshold Limit Values, as amended
	Ceil_Time		2 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
	PEL		2 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
	IDLH		10 mg/m3	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended
Hydrochloric acid	Ceiling	5 ppm	7 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	Ceiling	5 ppm	7 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
	ST ESL		130 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	AN ESL		5.7 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	AN ESL		8.4 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL		190 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	Ceiling	5 ppm	7 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended



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	Ceiling	2 ppm		US. ACGIH Threshold Limit Values, as amended
	Ceil_Time	5 ppm	7 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
	Ceiling	5 ppm	7 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
	IDLH	50 ppm		US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended
1,4-Dioxane	TWA	25 ppm	90 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	TWA	25 ppm	90 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended
	ST ESL		250 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	AN ESL		25 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	AN ESL		90 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL		900 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	TWA PEL	0.28 ppm	1.0 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
	TWA	20 ppm		US. ACGIH Threshold Limit Values, as amended
	Ceil_Time	1 ppm	3.6 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
	PEL	100 ppm	360 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended
	IDLH	500 ppm		US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended
	LEL		2.0 %	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended
Oxirane	TWA	1 ppm		US. OSHA Table Z-1-A (29 CFR 1910.1000),



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			as amended
	STEL	5 ppm	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended
	AN ESL	1 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL	10 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	AN ESL	2 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	ST ESL	20 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended
	TWA PEL	1 ppm 2 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
	STEL	5 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
	TWA A LV	0.5 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended
	TWA	1 ppm	US. ACGIH Threshold Limit Values, as amended
	REL	0.1 ppm 0.18 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
	Ceil_Time	5 ppm 9 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended
	IDLH	800 ppm	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended
	OSHA_ACT	0.5 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended
	TWA	1 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended
	STEL	5 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053), as amended
	LEL	3.0 %	US. NIOSH. Immediately Dangerous to Life or Health (IDLH) Values, as amended



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Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

Biological Limit Values

Chemical name	Parameters / Sampling Time	Exposure Limit Values	Source
Oxirane	N-(2-hydroxyethyl)-valine (HEV) hemoglobin adducts Sampling time: Not critical.	5000 pmol/g (Hemoglobin adducts)	ACGIH BEI
	S-(2-hydroxyethyl) mercapturic acid (HEMA) Sampling time: End of shift.	5 µg/g (Creatinine in urine)	ACGIH BEI

Appropriate Engineering Controls No data available.

Individual protection measures, such as personal protective equipment

Eye/face protection: Wear goggles/face shield.

Skin Protection

Hand Protection: Additional Information: Hand protection not required.

Skin and Body Protection: No data available.



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Respiratory Protection: None should be needed.

Hygiene measures: No data available.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Physical state: liquid
Form: liquid
Color: Clear, Pink, Red
Odor: Mild
Odor Threshold: No data available.
Freezing point: Similar to water
Boiling Point: $\geq 212\text{ }^{\circ}\text{F}/\geq 100\text{ }^{\circ}\text{C}$ Similar to water

Flammability: No data available.

Upper/lower limit on flammability or explosive limits

Explosive limit - upper: No data available.
Explosive limit - lower: No data available.

Flash Point: Not applicable

Self Ignition Temperature: No data available.

Decomposition Temperature: No data available.

pH: 6 - 7.5

Viscosity

Dynamic viscosity: 500 mPa.s (932 °F/500 °C)
Kinematic viscosity: 1000 mm²/s (77 °F/25 °C)
Flow Time: No data available.

Solubility(ies)

Solubility in Water: Completely soluble in water
Solubility (other): No data available.



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Partition coefficient (n-octanol/water): Not applicable
Vapor pressure: No data available.
Relative density: 0.99 - 1.10
Density: 1.06 g/cm³
Bulk density: No data available.
Relative vapor density: No data available.

Other information

Metal Corrosion: Not Evaluated

10. Stability and reactivity

Reactivity: Material is stable under normal conditions.
Chemical Stability: Material is stable under normal conditions.
Possibility of hazardous reactions: Not known.
Conditions to avoid: No data available.
Incompatible Materials: Avoid contact with oxidizers or reducing agents.
Hazardous Decomposition Products: Carbon Dioxide. Carbon Monoxide. Hydrogen chloride gas. Nitrogen oxides. Ammonia.

11. Toxicological information

General information: EARS: CHG may cause permanent damage / deafness when instilled in the middle ear May cause permanent damage if permitted to enter and remain in the ears or eyes for a long period of time

Information on toxicological effects

Inhalation: No data available.
Skin Contact: No data available.



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Eye contact: No data available.

Ingestion: No data available.

Information on likely routes of exposure

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix: 24,313.14 mg/kg

Components:

Nonylphenol, ethoxylated LD 50 (Rat): 4,000 mg/kg

D-Gluconic acid, compd. LD 50 (Rat): 2,000 mg/kg
with N1,N14-bis(4- LD 50 (Mouse): 1,700 mg/kg
chlorophenyl)-3,12-

diimino-2,4,11,13-
tetraazatetradecanediimid
amide (2:1)

Diethanolamine LD 50 (Rat): 710 mg/kg

Octadecanoic acid LD 50 (Rat): 4.6 g/kg

Sodium hydroxide
(Na(OH)) No data available.

Hydrochloric acid No data available.
1,4-Dioxane LD 50 (Rabbit): 2,000 mg/kg
LD 50 (Guinea pig): 3,150 mg/kg
LD 50 (Mouse): 5,700 mg/kg
LD 50 (Cat): 2,000 mg/kg

Oxirane LD 50 (Mouse): 365 mg/kg
LD 50 (Mouse): 280 mg/kg
LD 50 (Rat): 72 mg/kg
LD 50 (Guinea pig): 270 mg/kg

Dermal

Product: No data available.

Components:

Nonylphenol, ethoxylated No data available.

D-Gluconic acid, compd. LD 50 (Rabbit): 5,000 mg/kg
with N1,N14-bis(4- LD 50 (Rabbit): > 5,000 mg/kg
chlorophenyl)-3,12-
diimino-2,4,11,13-
tetraazatetradecanediimid
amide (2:1) Experimental result, Key study

Diethanolamine
Octadecanoic acid

No data available.

No data available.



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Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

Inhalation

Product: No data available.

Components:

Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	LC 50 (Rat, 4 h): 1405 ppm LC 50 (Rat, 1 h): 2810 ppm
1,4-Dioxane	No data available.
Oxirane	LC 50 (Rat, 1 h): 2900 ppm

Repeated dose toxicity

Product: No data available.

Components:

Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimide (2:1)	No data available.
Diethanolamine	LOAEL (Rat(Female, Male), Inhalation): 15 mg/m3 Experimental result, Key study Inhalation LOAEL (Rat(Female, Male), Dermal, 13 Weeks): 32 mg/kg Experimental result, Key study Dermal NOAEL (Rat(Female, Male), Inhalation): 15 mg/m3 Experimental result, Key study Inhalation NOAEL (Rat(Female, Male), Inhalation): 0.2 mg/l Experimental result, Supporting study Inhalation NOAEL (Rat(Female, Male), Inhalation): 3 mg/m3 Experimental result, Key study Inhalation
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	NOAEL (Mouse(Female, Male), Inhalation, 4 - 91 d): 20 ppm(m) Experimental result, Key study Inhalation



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	NOAEL (Rat(Female, Male), Inhalation, 4 - 91 d): 10 ppm(m) Experimental result, Key study Inhalation
	NOAEL (Rat(Female, Male), Inhalation, 4 - 91 d): 20 ppm(m) Experimental result, Key study Inhalation
	LOAEL (Mouse(Female, Male), Inhalation, 4 - 91 d): 50 ppm(m) Experimental result, Key study Inhalation
1,4-Dioxane	NOAEL (Guinea pig; Monkey; Rabbit(female), Inhalation, 2 - 20 d): 0.05 mg/l Experimental result, Supporting study Inhalation
	LOAEL (Rat(Female, Male), Inhalation, 13 Weeks): 100 ppm(m) Experimental result, Not specified Inhalation
	NOAEL (Rat(Female, Male), Inhalation): > 400 mg/m3 Experimental result, Key study Inhalation
	LOAEL (Rat(Female, Male), Inhalation): 360 mg/m3 Experimental result, Not specified Inhalation
Oxirane	NOAEL (Rat(Female, Male), Inhalation, 2 yr): 10 ppm(m) Experimental result, Weight of Evidence study Inhalation
	NOAEL (Mouse(Female, Male), Inhalation, 10 - 11 Weeks): 10 ppm(m) Experimental result, Weight of Evidence study Inhalation

Skin Corrosion/Irritation

Product:	No data available.
Components:	
Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	No data available.
Diethanolamine	Slightly irritating
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

Serious Eye Damage/Eye Irritation

Product:	No data available.
Components:	
Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	No data available.



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Sodium hydroxide (Na(OH))	Mild irritant in vivo , Rabbit, 4 d: OECD GHS Mild irritant in vivo Rabbit, 2 d: OECD GHS Mild irritant in vivo Rabbit, 1 d: OECD GHS Mild irritant in vivo Rabbit, 3 d: OECD GHS
Hydrochloric acid	Category 1 in vivo , Rabbit, 1 hrs: EU Category 1 in vivo Rabbit, 1 d: EU Category 1 in vivo Rabbit, 1 - 21 d: EU Category 1 in vivo Rabbit, 3 - 7 d: EU Category 1 in vivo Rabbit, 1 - 24 hrs: EU Category 1 in vivo Rabbit, 1 - 7 d: EU Category 1 in vivo Rabbit, 1 - 2 d: EU
1,4-Dioxane	No data available.
Oxirane	No data available.

Respiratory or Skin Sensitization

Product: No data available.

Components:

Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	No data available.
Diethanolamine	Skin sensitization:, in vivo (Guinea pig): Non sensitising
Octadecanoic acid	Skin sensitization:, in vivo (Guinea pig): Non sensitising
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	Skin sensitization:, in vivo (Guinea pig): Non sensitising
Oxirane	No data available.

Carcinogenicity

Product: No data available.

Components:

Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.



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IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Diethanolamine Overall evaluation: 2B. Possibly carcinogenic to humans.

ACGIH: US.ACGIH Threshold Limit Values:

Diethanolamine Hazard Designation: Group A3. Confirmed animal carcinogen with unknown relevance to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

No carcinogens present or none present in regulated quantities

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:

No carcinogens present or none present in regulated quantities

Germ Cell Mutagenicity

In vitro

Product: No data available.

Components:

Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

In vivo

Product: No data available.

Components:

Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.



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1,4-Dioxane No data available.
Oxirane No data available.

Reproductive toxicity

Product: No data available.

Components:

Nonylphenol, ethoxylated No data available.
D-Gluconic acid, compd. No data available.
with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)
Diethanolamine No data available.
Octadecanoic acid No data available.
Sodium hydroxide (Na(OH)) No data available.
Hydrochloric acid No data available.
1,4-Dioxane No data available.
Oxirane No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Components:

Nonylphenol, ethoxylated No data available.
D-Gluconic acid, compd. No data available.
with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)
Diethanolamine No data available.
Octadecanoic acid No data available.
Sodium hydroxide (Na(OH)) No data available.
Hydrochloric acid No data available.
1,4-Dioxane No data available.
Oxirane No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Components:

Nonylphenol, ethoxylated No data available.
D-Gluconic acid, compd. No data available.
with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)
Diethanolamine No data available.



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Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

Aspiration Hazard

Product: No data available.

Components:

Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

Information on health hazards

Other hazards

Product: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: Low toxicity to sewage microorganisms

Components:

Nonylphenol, ethoxylated No data available.

D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13- LC 0 (Danio rerio, 96 h): 2 mg/l Experimental result, Key study
LC 100 (Danio rerio, 96 h): 3.6 mg/l Experimental result, Key study
LC 50 (Danio rerio, 96 h): 2.08 mg/l Experimental result, Key study
LC 10 (Poecilia reticulata, 5 d): 22 mg/l Experimental result, Supporting



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tetraazatetradecanediimi damide (2:1)	study
Diethanolamine	LC 50 (Pimephales promelas, 96 h): 4,710 mg/l LC 50 (Sheepshead minnow (Cyprinodon variegatus), 24 h): > 540 mg/l Mortality LC 50 (Fathead minnow (Pimephales promelas), 96 h): 1,200 - 1,580 mg/l Mortality LC 50 (Bluegill (Lepomis macrochirus), 24 h): 2,100 mg/l Mortality LC 50 (Carp (Leuciscus idus melanotus), 48 h): 1,430 mg/l Mortality
Octadecanoic acid	LC 100 (Leuciscus idus, 48 h): > 10,000 mg/l Experimental result, Key study LC 50 (Leuciscus idus, 48 h): > 10,000 mg/l Experimental result, Key study LC 0 (Leuciscus idus, 48 h): 10,000 mg/l Experimental result, Key study LC 0 (Cyprinus carpio, 48 h): 1,000 mg/l Experimental result, Supporting study
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	LC 50 (Western mosquitofish (Gambusia affinis), 96 h): 282 mg/l Mortality LC 50 (Western mosquitofish (Gambusia affinis), 48 h): 282 mg/l Mortality LC 50 (Western mosquitofish (Gambusia affinis), 24 h): 282 mg/l Mortality
1,4-Dioxane	LC 50 (Pimephales promelas, 96 h): 10,300 mg/l LC 50 (Carp (Leuciscus idus melanotus), 48 h): 8,450 mg/l Mortality LC 50 (Carp (Leuciscus idus melanotus), 48 h): 9,630 mg/l Mortality LC 50 (Inland silverside (Menidia beryllina), 96 h): 6,700 mg/l Mortality LC 50 (Oryzias latipes, 21 d): > 100 mg/l Experimental result, Key study
Oxirane	LC 50 (Fathead minnow (Pimephales promelas), 24 h): 63 - 125 mg/l Mortality LC 50 (Pimephales promelas, 48 h): 89 mg/l Experimental result, Key study LC 50 (Fathead minnow (Pimephales promelas), 48 h): 63 - 125 mg/l Mortality LC 50 (Fathead minnow (Pimephales promelas), 24 h): 50 - 150 mg/l Mortality LC 50 (Fathead minnow (Pimephales promelas), 96 h): 73 - 96 mg/l Mortality
Aquatic Invertebrates Product: Components:	No data available.



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Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimi damide (2:1)	EC 100 (Daphnia magna, 48 h): 0.12 mg/l Experimental result, Key study experimental result EC 50 (Daphnia magna, 48 h): 0.05 - 0.1 mg/l Experimental result, Not specified experimental result ED 0 (Daphnia magna, 48 h): 0.04 mg/l Experimental result, Key study experimental result EC 50 (Daphnia magna, 48 h): 0.087 mg/l Experimental result, Key study experimental result
Diethanolamine	LC 50 (Water flea (Daphnia pulex), 48 h): 2.15 mg/l Mortality LC 50 (Water flea (Daphnia magna), 24 h): 140 - 180 mg/l Mortality LC 50 (Water flea (Ceriodaphnia dubia), 48 h): 22.2 - 39.1 mg/l Mortality LC 50 (Water flea (Ceriodaphnia dubia), 48 h): 26.5 - 36.2 mg/l Mortality LC 50 (Ramshorn snail (Helisoma trivolvis), 96 h): > 100 mg/l Mortality
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	LC 50 (Common shrimp, sand shrimp (Crangon crangon), 48 h): 260 mg/l Mortality LC 50 (Green or European shore crab (Carcinus maenas), 48 h): 240 mg/l Mortality
1,4-Dioxane	LC 50 (Scud (Gammarus pseudolimnaeus), 96 h): 1,800 - 2,872 mg/l Mortality LC 50 (Water flea (Daphnia magna), 24 h): 4,700 mg/l Mortality
Oxirane	LC 50 (Brine shrimp (Artemia sp.), 24 h): 350 mg/l Mortality LC 50 (Water flea (Daphnia magna), 48 h): 300 mg/l Mortality LC 50 (Water flea (Daphnia magna), 48 h): 150 - 243 mg/l Mortality LC 50 (Brine shrimp (Artemia sp.), 24 h): > 500 mg/l Mortality LC 50 (Brine shrimp (Artemia sp.), 48 h): 1,000 mg/l Mortality

Toxicity to Aquatic Plants

Product:	No data available.
Components:	
Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.



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Toxicity to microorganisms

Product:	No data available.
Components:	
Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimidamide (2:1)	No data available.
Diethanolamine	LC 50 (Turbellarian, flatworm (<i>Dugesia tigrina</i>), 96 h): > 100 mg/l Mortality LC 50 (Turbellarian, flatworm (<i>Dugesia tigrina</i>), 96 h): 100 mg/l Mortality
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

Chronic hazards to the aquatic environment:

Fish

Product:	No data available.
Components:	
Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimidamide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

Aquatic Invertebrates

Product:	No data available.
Components:	
Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-	LOAEL (<i>Daphnia magna</i> , 21 d): 61.8 µg/l (semi-static) Experimental result, Key study experimental result NOAEL (<i>Daphnia magna</i> , 21 d): 20.6 µg/l (semi-static) Experimental

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diimino-2,4,11,13-tetraazatetradecanediimide (2:1)	result, Key study experimental result EC 100 (Daphnia magna, 21 d): 61.8 µg/l (semi-static) Experimental result, Key study experimental result EC 50 (Daphnia magna, 21 d): 35.8 µg/l (semi-static) Experimental result, Key study experimental result
Diethanolamine	LOAEL (Daphnia magna, 21 d): 1.56 mg/l (semi-static) Experimental result, Key study experimental result LC 0 (Daphnia magna, 21 d): 3.13 mg/l (semi-static) Experimental result, Key study experimental result NOAEL (Daphnia magna, 21 d): 0.78 mg/l (semi-static) Experimental result, Key study experimental result
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

Toxicity to Aquatic Plants

Product:	No data available.
Components:	
Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

Toxicity to microorganisms

Product:	No data available.
Components:	
Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	No data available.
Diethanolamine	LC 50 (Turbellarian, flatworm (<i>Dugesia tigrina</i>), 96 h): > 100 mg/l Mortality LC 50 (Turbellarian, flatworm (<i>Dugesia tigrina</i>), 96 h): 100 mg/l Mortality



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Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

Persistence and Degradability

Biodegradation

Product:	No data available.
Components:	
Nonylphenol, ethoxylated	98 % (30 d) Experimental result, Key study Detected in water. 99 % (30 d) Experimental result, Key study Detected in water. 97 % (30 d) Experimental result, Key study Detected in water.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	65 % Experimental result, Key study Detected in water. 100 % Experimental result, Not specified Detected in water. > 0 % Experimental result, Key study Detected in water. 79 % Experimental result, Key study Detected in water. 71 % Experimental result, Key study Detected in water.
Diethanolamine	93 % (28 d) Experimental result, Supporting study Detected in water. 96 % (10 d) Experimental result, Supporting study Detected in water. 93 % (28 d) Experimental result, Supporting study Detected in water. 96 % (10 d) Experimental result, Supporting study Detected in water. 93 % (28 d) Experimental result, Key study Detected in water.
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	69 % (20 d) Experimental result, Supporting study Detected in water. > 50 % (20 d) Not specified, Supporting study Detected in water. 100 % Experimental result, Key study Detected in water. 96 % Experimental result, Key study Detected in water. 93 - 98 % (28 d) Experimental result, Supporting study Detected in water.

BOD/COD Ratio

Product:	No data available.
Components:	



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Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Components:

Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimid amide (2:1)	Green algae (<i>Chlorella fusca vacuolata</i>), Bioconcentration Factor (BCF): 2,560 (Static) Carp (<i>Leuciscus idus melanotus</i>), Bioconcentration Factor (BCF): 42 (Renewal) Leuciscus idus, Bioconcentration Factor (BCF): 42 Experimental result, Key study Aquatic sediment Leuciscus idus, Bioconcentration Factor (BCF): 40 Experimental result, Key study Aquatic sediment
Diethanolamine	Bioconcentration Factor (BCF): 3 Estimated by calculation, Weight of Evidence study Aquatic sediment Bioconcentration Factor (BCF): 4 Estimated by calculation, Weight of Evidence study Aquatic sediment Bioconcentration Factor (BCF): 0.73 Estimated by calculation, Weight of Evidence study Aquatic sediment
Octadecanoic acid	Danio rerio, Bioconcentration Factor (BCF): 238 - 288 Read-across from supporting substance (structural analogue or surrogate), Key study Aquatic sediment Danio rerio, Bioconcentration Factor (BCF): 236 - 282 Read-across from supporting substance (structural analogue or surrogate), Key study Aquatic sediment Danio rerio, Bioconcentration Factor (BCF): 234 - 249 Read-across from supporting substance (structural analogue or surrogate), Key study Aquatic sediment
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.



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Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: Not applicable

Components:

Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimidamide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	Log Kow: 8.23
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	Log Kow: -0.27
Oxirane	No data available.

Mobility in soil:

Product No data available.

Components:

Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimidamide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.
Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

Results of PBT and vPvB assessment:

Product No data available.

Components:

Nonylphenol, ethoxylated	No data available.
D-Gluconic acid, compd. with N1,N14-bis(4-chlorophenyl)-3,12-diimino-2,4,11,13-tetraazatetradecanediimidamide (2:1)	No data available.
Diethanolamine	No data available.
Octadecanoic acid	No data available.
Sodium hydroxide (Na(OH))	No data available.



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Hydrochloric acid	No data available.
1,4-Dioxane	No data available.
Oxirane	No data available.

Other adverse effects:

Other hazards
Product: No data available.

13. Disposal considerations

Disposal methods: Dispose of waste and residues in accordance with local authority requirements.

Contaminated Packaging: Water, if necessary with cleansing agents.

14. Transport information

DOTUN number or ID number:	Not regulated.
UN Proper Shipping Name:	Not regulated.
Transport Hazard Class(es)	
Class:	Not regulated.
Label(s):	Not regulated.
Packing Group:	Not regulated.
Marine Pollutant:	Not regulated.
Limited quantity	Not regulated.
Excepted quantity	Not regulated.
Special precautions for user:	Not regulated.

IMDG

UN number or ID number:	Not regulated.
UN Proper Shipping Name:	Not regulated.
Transport Hazard Class(es)	
Class:	Not regulated.
Subsidiary risk:	Not regulated.
EmS No.:	Not regulated.
Packing Group:	Not regulated.
Environmental Hazards	
Marine Pollutant:	Not regulated.
Special precautions for user:	Not regulated.



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IATA

UN number or ID number:	Not regulated.
Proper Shipping Name:	Not regulated.
Transport Hazard Class(es):	
Class:	Not regulated.
Subsidiary risk:	Not regulated.
Packing Group:	Not regulated.
Environmental Hazards	
Marine pollutant:	Not regulated.
Special precautions for user:	Not regulated.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Chemical Identity

Reportable quantity

Poly(oxy-1,2-ethanediyl), α -(nonylphenyl)- ω -hydroxy-

≤ 1.0 % One-Time Export Notification only.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

None present or none present in regulated quantities.



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US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity

GLYCOL ETHERS

DIETHANOLAMINE

SODIUM HYDROXIDE

HYDROCHLORIC ACID

1,4-DIOXANE

OXIRANE

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Carcinogenicity

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

Chemical Identity

Hydrogen chloride
(anhydrous); Hydrogen
chloride (gas only)

Oxirane; ethylene
oxide



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US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting

<u>Chemical Identity</u>	<u>% by weight</u>
POLY(OXY-1,2-ETHANEDIYL), A-(NONYLPHENYL)- Ω -HYDROXY-	1.0%1.0%

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

none

Chemical Identity

HYDROCHLORIC ACID (CONC. 37% OR GREATER)
HYDROGEN CHLORIDE (ANHYDROUS)
ETHYLENE OXIDE

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Chemical Identity

SODIUM HYDROXIDE
HYDROCHLORIC ACID

US State Regulations

US. California Proposition 65



WARNING: This product can expose you to chemicals including, Oxirane which is [are] known to the State of California to cause cancer and birth defects or other reproductive harm.



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This product can expose you to chemicals including, N,N-BIS(2-HYDROXYETHYL)DODECAN AMIDE, Diethanolamine, 1,4-Dioxane which is [are] known to the State of California to cause cancer.

For more information go to www.P65Warnings.ca.gov.

International regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

16. Other information, including date of preparation or last revision

Issue Date: 01/27/2023

Version #: 5.3

Further Information: No data available.



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