

SAFETY DATA SHEET

According to US Regulation 29 CFR 1910.1200 (HazCom 2012)

1. Identification

Product identifier: Octyl Phenol Ethoxylate

Other means of identification

Product No.: 4425, H282, X198

Recommended restrictions

Recommended use: For Laboratory, Research or Manufacturing Use.

Restrictions on use: Not determined.

Details of the supplier of the safety data sheet

Company Name: Avantor Performance Materials, LLC
Address: 100 Matsonford Rd, Suite 200
Radnor, PA 19087

Telephone: Customer Service: 855-282-6867

Contact Person: Product Information Compliance
E-mail: info@avantormaterials.com

Emergency telephone number:

CHEMTREC: 1-800-424-9300 within US and Canada (24 hrs/day, 7 days/week)

2. Hazard(s) identification

Hazard Classification

Health Hazards

Acute toxicity (Oral)	Category 4
Serious Eye Damage/Eye Irritation	Category 1

Unknown toxicity - Health

Acute toxicity, oral	0 %
Acute toxicity, dermal	97 %
Acute toxicity, inhalation, vapor	100 %

Environmental Hazards

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

Unknown toxicity - Environment

Acute hazards to the aquatic environment	0 %
Chronic hazards to the aquatic environment	100 %

Label Elements

Hazard Symbol:



Signal Word:

Danger

Hazard Statement:

Harmful if swallowed.
Causes serious eye damage.
Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention:

Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection.

Response:

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. Collect spillage.

Disposal:

Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC):

None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Polyethylene glycol octylphenyl ether	9036-19-5	97 - 100%
Polyethylene Glycol	25322-68-3	<3%
Dioxane	123-91-1	<0.0055%
Ethylene oxide	75-21-8	<0.0010%

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

4. First-aid measures

General information:

Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion:

Rinse mouth thoroughly. Call a POISON CENTER/doctor if you feel unwell.

Inhalation:

Move to fresh air. Get medical attention if symptoms persist.

Skin Contact:

Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately.

Most important symptoms/effects, acute and delayed

Symptoms: Harmful if swallowed. Causes serious eye damage.

Hazards: None known.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

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

Personal precautions, protective equipment and emergency procedures: Keep unauthorized personnel away. Use personal protective equipment. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures: Prevent entry into waterways, sewer, basements or confined areas. Stop leak if you can do so without risk. Inform authorities if large amounts are involved.

Environmental Precautions: Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. Do not contaminate water sources or sewer.

7. Handling and storage

Precautions for safe handling: Use personal protective equipment as required. Wash thoroughly after handling. Avoid contact with eyes. Do not breathe mist or vapor. Do not taste or swallow. Do not eat, drink or smoke when using the product. Use only with adequate ventilation. See Section 8 of the SDS for Personal Protective Equipment.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Store in a cool and well-ventilated place. Store in a dry place. Store away from incompatible materials.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Dioxane	TWA	20 ppm	US. ACGIH Threshold Limit Values (2011)
	SKIN_DES	Can be absorbed through the skin.	US. ACGIH Threshold Limit Values (2011)
	Ceil_Time	1 ppm 3.6 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	100 ppm 360 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	SKIN_DES	Can be absorbed through the skin.	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	25 ppm 90 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	SKIN_FINAL	Can be absorbed through the skin.	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	25 ppm 90 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	SKIN_DES	Can be absorbed through the skin.	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	AN ESL	Health 72 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	ST ESL	Health 200 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	AN ESL	Health 20 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	ST ESL	Health 720 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	TWA PEL	0.28 ppm 1.0 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	SKIN_DES	Can be absorbed through the skin.	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
Ethylene oxide	TWA	1 ppm	US. ACGIH Threshold Limit Values (2011)
	REL	0.1 ppm 0.18 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	Ceil_Time	5 ppm 9 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REF	29 CFR 1910.1047	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (03 2012)
	TWA	1 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)
	STEL	5 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)
	OSHA_ACT	0.5 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)
	TWA	1 ppm	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	5 ppm	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

	TWA	1 ppm	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (01 2019)
	STEL	5 ppm	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (01 2019)
	ST ESL	Health 20 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	AN ESL	Health 2 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	ST ESL	Health 10 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	AN ESL	Health 1 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	STEL	5 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA PEL	1 ppm 2 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA A LV	0.5 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)

Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
Ethylene oxide (S-(2-hydroxyethyl) mercapturic acid (HEMA): Sampling time: End of shift.)	5 µg/g (Creatinine in urine)	ACGIH BEI (03 2018)
Ethylene oxide (N-(2-hydroxyethyl)-valine (HEV) hemoglobin adducts: Sampling time: Not critical.)	5000 pmol/g (Hemoglobin adducts)	ACGIH BEI (03 2018)

Appropriate Engineering Controls

No data available.

Individual protection measures, such as personal protective equipment

General information:

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

Eyel/face protection:

Wear safety glasses with side shields (or goggles). Wear face shield if there is risk of splashes.

Skin Protection

Hand Protection:

Wear protective gloves.

Other:

Wear suitable protective clothing.

Respiratory Protection:

In case of inadequate ventilation use suitable respirator.

Hygiene measures:

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Avoid contact with eyes.

9. Physical and chemical properties

Appearance

Physical state:	Liquid
Form:	Liquid
Color:	Pale yellow
Odor:	Mild
Odor threshold:	No data available.
pH:	7 (5% aqueous solution)
Melting point/freezing point:	6 °C
Initial boiling point and boiling range:	> 200 °C
Flash Point:	251 °C
Evaporation rate:	< 0.01 (n-butyl acetate=1)
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	< 0.01 kPa (20 °C)
Vapor density:	> 1.0 (Air=1)
Density:	1.07 g/cm ³
Relative density:	1.07
Solubility(ies)	
Solubility in water:	Miscible
Solubility (other):	alcohol: miscible
Partition coefficient (n-octanol/water):	2.7
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	226 mm ² /s

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat. Contact with incompatible materials.
Incompatible Materials:	Strong acids. Strong oxidizing agents. Strong bases. Copper. Copper alloys.
Hazardous Decomposition Products:	Thermal decomposition may release oxides of carbon.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	May cause irritation to the respiratory system.
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Skin Contact:	Prolonged skin contact may cause temporary irritation.
Eye contact:	Causes serious eye damage.
Ingestion:	Harmful if swallowed.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix (Rat): 1,958.76 mg/kg

Dermal

Product: No data available.

Specified substance(s):

Polyethylene Glycol LD 50 (Rat): > 2,500 mg/kg

Dioxane LD 50 (Rabbit): 7,600 mg/kg

Inhalation

Product: No data available.

Specified substance(s):

Dioxane LC 0 (Rat, 1 h): 155 mg/l

Ethylene oxide LC 50 (Rat, 4 h): 1.44 - 2.63 mg/l

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: Prolonged skin contact may cause temporary irritation.

Serious Eye Damage/Eye Irritation

Product: Causes serious eye damage.

Respiratory or Skin Sensitization

Product: Not a skin nor a respiratory sensitizer.

Carcinogenicity

Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

No carcinogenic components identified

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

No carcinogenic components identified

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

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No mutagenic components identified

In vivo

Product: No mutagenic components identified

Reproductive toxicity

Product: No components toxic to reproduction

Specific Target Organ Toxicity - Single Exposure

Product: None known.

Specific Target Organ Toxicity - Repeated Exposure

Product: None known.

Aspiration Hazard

Product: Not classified

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Polyethylene glycol
octylphenyl ether LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 7.2 mg/l

Polyethylene Glycol
LC 50 (Atlantic salmon (Salmo salar), 96 h): > 1,000 mg/l
LC 50 (Crucian carp (Carassius carassius), 96 h): > 20,000 mg/l
LC 50 (Rainbow Trout, 96 h): > 20,000 mg/l
LC 50 (Poecilia reticulata, 96 h): > 100 mg/l

Dioxane
LC 50 (Fathead Minnow, 96 h): 9,851 - 10,300 mg/l
LC 50 (Menidia beryllina, 96 h): 6,700 mg/l

Ethylene oxide
LC 50 (Fathead minnow (Pimephales promelas), 96 h): 73 - 96 mg/l

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Polyethylene glycol
octylphenyl ether LC 50 (Water flea (Daphnia magna), 48 h): 7.5 - 9.8 mg/l
LC 50 (Common shrimp, sand shrimp (Crangon crangon), 48 h): > 100 mg/l
LC 50 (Green or European shore crab (Carcinus maenas), 48 h): > 100 mg/l

Polyethylene Glycol
NOAEL (Daphnia magna, 48 h): >= 150 mg/l
EC 50 (Daphnia magna, 48 h): > 150 mg/l

Dioxane	LC 50 (Scud (Gammarus pseudolimnaeus), 96 h): 1,800 - 2,872 mg/l EC 50 (Daphnia magna, 48 h): > 1,000 mg/l
Ethylene oxide	LC 50 (Brine shrimp (Artemia sp.), 48 h): 1,000 mg/l LC 50 (Water flea (Daphnia magna), 48 h): 83 - 212 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: 2.7

Mobility in soil: The product is water soluble and may spread in water systems.

Other adverse effects: Toxic to aquatic life with long lasting effects.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated.

IMDG

Not regulated.

IATA

Not regulated.

15. Regulatory information

US Federal Regulations

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

None present or none present in regulated quantities.

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

<u>Chemical Identity</u>	<u>OSHA hazard(s)</u>
Ethylene oxide	Skin sensitization Reproductive toxicity Mutagenicity Eye irritation Acute toxicity respiratory tract irritation Cancer Skin irritation Flammability Central nervous system

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Dioxane	100 lbs.
Ethylene oxide	10 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Acute toxicity (any route of exposure)
Serious eye damage or eye irritation

SARA 302 Extremely Hazardous Substance

<u>Chemical Identity</u>	<u>Reportable quantity</u>	<u>Threshold Planning Quantity</u>
Ethylene oxide	10 lbs.	1000 lbs.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Ethylene oxide	10 lbs.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
Ethylene oxide	500 lbs.

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

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

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Ethylene oxide	10000 lbs.

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

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Dioxane	Carcinogenic.
Ethylene oxide	Carcinogenic.

Ethylene oxide	Female reproductive toxin.
Ethylene oxide	Male reproductive toxin.
Ethylene oxide	Developmental toxin.

US. New Jersey Worker and Community Right-to-Know Act

No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List

Chemical Identity

Dioxane
Ethylene oxide

US. Pennsylvania RTK - Hazardous Substances

No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

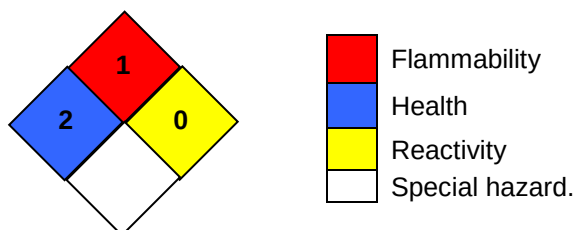
Not applicable

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Mexico INSQ:	Not in compliance with the inventory.
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	Not in compliance with the inventory.

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

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date: 03-06-2020

Revision Information: Not relevant.

Version #: 1.1

Source of information: Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, information from the Toxicology Data Network (TOXNET), European Chemical Agency (ECHA) substance dossiers, IARC Monographs, US National Toxicology Program data, the Agency for Toxic Substances and Disease Registry, other manufacturer's SDSs and other sources, as appropriate.

Further Information: No data available.

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