



Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial Preparation Date: 06.20.2019

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Revision date: 04.11.2024

Samuari Shield HPC

SECTION 1: Identification

Product Identifier

Product Name: Samuari Shield HPC

Product code: CPS-602

Recommended Use of the Product and Restriction on Use

Relevant Identified Uses: Clear Coat Sealer

Uses Advised Against: NA

Reasons Why Uses Advised Against: Not determined or not applicable.

Manufacturer or Supplier Details

Manufacturer:

United States

JBS Industries

2726 Henkle Drive

Lebanon, Ohio 45036

513-228-2800

SBAETEN@JBSINDUSTRIES.COM

Emergency Telephone Number:

North America

CHEMTREC

800-424-9300 (24 hours)

SECTION 2: Hazard(s) Identification

GHS Classification:

Skin irritation, category 2

Serious eye damage, category 1

Label elements

Hazard Pictograms:



Signal Word: Danger

Hazard statements:

H315 Causes skin irritation

H318 Causes serious eye damage

Precautionary Statements:

P264 Wash contaminated area thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection

P302+P352 IF ON SKIN: Wash with plenty of water.

P332+P313 If skin irritation occurs: Get medical advice/attention

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P362 Take off contaminated clothing and wash it before reuse

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 Immediately call a POISON CENTER/doctor if difficulty in breathing occurs.

P501 It is the responsibility of the waste generator to characterize all waste material according to regulatory entities.

Hazards Not Otherwise Classified: None

SECTION 3: Composition/Information on Ingredients

Identification	Name	Weight %
CAS Number: 61789-77-3	Quaternary ammonium compounds, dicoco alkyldimethyl, chlorides	1.4-22.5
CAS Number: 111-76-2	Ethylene Glycol Monobutyl Ether	<14.92498 5
CAS Number: N/A	Proprietary ingredient 1	1-10
CAS Number: N/A	Proprietary ingredient 2	1-10
CAS Number: N/A	Proprietary ingredient 3	1-10
CAS Number: 107-21-1	Ethane-1,2-diol	<0.027
CAS Number: 75-21-8	Ethylene oxide	<0.0135
CAS Number: 123-91-1	1,4-dioxane	<0.0135
CAS Number: 75-07-0	Acetaldehyde	<0.0135
CAS Number: 74-87-3	Methyl chloride	<0.009

Additional Information: None

SECTION 4: First Aid Measures

Description of First Aid Measures

General Notes:

Not determined or not applicable.

After Inhalation:

If inhaled, remove person to fresh air and place in a position comfortable for breathing. Keep person at rest. If breathing is difficult, administer oxygen. If breathing has stopped, provide artificial respiration. If experiencing respiratory symptoms, seek medical advice/attention.

After Skin Contact:

Remove contaminated clothing and shoes. Rinse skin with copious amounts of water [shower] for several minutes. Launder contaminated clothing before reuse. If symptoms develop or persist, seek medical

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advice/attention.

After Eye Contact:

Rinse eyes with plenty of water for several minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. If symptoms develop or persist, seek medical advice/attention.

Immediately rinse eyes with plenty of gently flowing lukewarm water for 15 minutes. Remove contact lenses if present and easy to do so. Protect unexposed eye. Seek immediate medical attention, preferably from an ophthalmologist.

After Swallowing:

If swallowed, DO NOT induce vomiting unless told to do so by a physician or poison control center. Rinse mouth with water. Never give anything by mouth to an unconscious person. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. If symptoms develop or persist, seek medical advice/attention.

Most Important Symptoms and Effects, Both Acute and Delayed

Acute Symptoms and Effects:

Skin contact may result in redness, pain, burning and inflammation.

Eye contact may result in irritation, redness, pain, inflammation, itching, burning, tearing, corneal damage and loss of vision.

Delayed Symptoms and Effects:

Effects are dependent on exposure (dose, concentration, contact time).

Immediate Medical Attention and Special Treatment

Specific Treatment:

In case of eye contact, seek prompt medical attention while rinsing is continued.

Notes for the Doctor:

Not determined or not applicable.

SECTION 5: Firefighting Measures

Extinguishing Media

Suitable Extinguishing Media:

Water mist/fog, carbon dioxide, dry chemical or alcohol resistant foam.

Unsuitable Extinguishing Media:

Do not use water jet.

Specific Hazards During Fire-Fighting:

Thermal decomposition may produce irritating/toxic fumes/gases.

Special Protective Equipment for Firefighters:

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full-face piece operated in positive pressure mode.

Special precautions:

Avoid contact with skin, eyes, hair and clothing. Do not breathe fumes/gas/mists/aerosols/vapors/dusts.

Move containers from fire area if safe to do so. Use water spray/fog for cooling fire exposed containers.

Avoid unnecessary run-off of extinguishing media which may cause pollution.

SECTION 6: Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures:

Evacuate unnecessary personnel. Ventilate area. Extinguish any sources of ignition. Wear recommended personal protective equipment (see Section 8). Avoid contact with skin, eyes and clothing. Avoid breathing

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mist, vapor, dust, fume and spray. Do not walk through spilled material. Wash thoroughly after handling. Respiratory protection may be necessary for spills greater than 5 gallons. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection see section 8.

Environmental Precautions:

Prevent further leakage or spillage if safe to do so. Prevent from reaching drains, sewers and waterways. Discharge into the environment must be avoided.

Methods and Material for Containment and Cleaning Up:

Do not touch damaged containers or spilled material unless wearing appropriate personal protective clothing. Stop leak if you can do it without risk. Contain and collect spillage and place in suitable container for future disposal. Dispose of in accordance with all applicable regulations (see Section 13).

Reference to Other Sections:

For personal protective equipment see Section 8. For disposal see Section 13.

SECTION 7: Handling and Storage

Precautions for Safe Handling:

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Avoid contact with skin, eyes and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

Use appropriate personal protective equipment (see Section 8). Use only with adequate ventilation. Avoid breathing mist/vapor/spray/dust. Do not eat, drink, smoke, or use personal products when handling chemical substances. Do not get in eyes. Avoid contact with skin and clothing. Wash affected areas thoroughly after handling. Keep away from incompatible materials (See Section 10). Keep containers tightly closed when not in use.

Conditions for Safe Storage, Including Any Incompatibilities:

Store in cool, dry, well-ventilated location out of direct sunlight. Keep away from food and beverages. Protect from freezing and physical damage. Store away from heat, open flames and other sources of ignition. Keep container tightly sealed. Store away from incompatible materials (See Section 10).

SECTION 8: Exposure Controls/Personal Protection

Only those substances with limit values have been included below.

Occupational Exposure Limit Values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
OSHA	Ethylene Glycol Monobutyl Ether	111-76-2	8-Hour TWA-PEL: 240 mg/m ³ (50 ppm)
	Proprietary ingredient 2	N/A	Ceiling Limit: 25 ppm
	Proprietary ingredient 2	N/A	Ceiling Limit: 125 mg/m ³
	Proprietary ingredient 3	N/A	PEL: 5 ppm
	Proprietary ingredient 3	N/A	PEL: 15 mg/m ³
	Proprietary ingredient 3	N/A	TWA: 10 mg/m ³
	Proprietary ingredient 3	N/A	TWA: 5 mg/m ³
	Proprietary ingredient 3	N/A	8-Hour TWA-PEL: 5 mg/m ³
	Proprietary ingredient 3	N/A	8-Hour TWA-PEL: 10 mg/m ³
	Ethylene oxide	75-21-8	8-Hour TWA-PEL: 1 ppm
	Ethylene oxide	75-21-8	15-Minute STEL: 5 ppm

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Country (Legal Basis)	Substance	Identifier	Permissible concentration
	Ethylene oxide	75-21-8	8-Hour TWA: 0.5 ppm (Action level)
	1,4-dioxane	123-91-1	8-Hour TWA-PEL: 360 mg/m ³ (100 ppm)
	Acetaldehyde	75-07-0	8-Hour TWA-PEL: 360 mg/m ³ (200 ppm)
	Methyl chloride	74-87-3	TWA: 100 ppm (PEL)
	Methyl chloride	74-87-3	STEL: 100 ppm (210 mg/m ³)
	Methyl chloride	74-87-3	Ceiling Limit: 200 ppm
NIOSH	Ethylene Glycol Monobutyl Ether	111-76-2	IDLH: 700 ppm
	Ethylene Glycol Monobutyl Ether	111-76-2	REL-TWA: 24 mg/m ³ (5 ppm [up to 10 hr])
	Proprietary ingredient 2	N/A	Ceiling Limit: 25 ppm
	Proprietary ingredient 2	N/A	Ceiling Limit: 125 mg/m ³
	Ethylene oxide	75-21-8	IDLH: 800 ppm
	Ethylene oxide	75-21-8	Ceiling Limit: 9 mg/m ³ (5 ppm [10-min/day])
	Ethylene oxide	75-21-8	REL-TWA: 0.18 mg/m ³ (0.1 ppm [up to 10 hr])
	1,4-dioxane	123-91-1	IDLH: 500 ppm
	1,4-dioxane	123-91-1	Ceiling Limit: 3.6 mg/m ³ (1 ppm [30-min])
	Acetaldehyde	75-07-0	IDLH: 2000 ppm
	Methyl chloride	74-87-3	IDLH: 2000 ppm
ACGIH	Ethylene Glycol Monobutyl Ether	111-76-2	8-Hour TWA: 20 ppm
	Proprietary ingredient 2	N/A	Ceiling Limit: 25 ppm
	Proprietary ingredient 3	N/A	TWA: 10 mg/m ³
	Ethane-1,2-diol	107-21-1	8-Hour TWA: 25 ppm (vapor fraction)
	Ethane-1,2-diol	107-21-1	15-Minute STEL: 50 ppm (vapor fraction)
	Ethane-1,2-diol	107-21-1	15-Minute STEL: 10 mg/m ³ (aerosol only, inhalable fraction)
	Ethylene oxide	75-21-8	8-Hour TWA: 1 ppm
	1,4-dioxane	123-91-1	8-Hour TWA: 20 ppm
	Acetaldehyde	75-07-0	Ceiling Limit: 25 ppm
	Methyl chloride	74-87-3	TLV-TWA: 50 ppm
	Methyl chloride	74-87-3	STEL: 100 ppm
	United States(California)	Ethylene Glycol Monobutyl Ether	111-76-2
Ethane-1,2-diol		107-21-1	Ceiling Limit: 100 mg/m ³ (40 ppm)
Ethylene oxide		75-21-8	15-Minute STEL: 5 ppm
Ethylene oxide		75-21-8	8-Hour TWA-PEL: 2 mg/m ³ (1 ppm)
Ethylene oxide		75-21-8	8-Hour TWA: 0.5 ppm (Action level)

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Country (Legal Basis)	Substance	Identifier	Permissible concentration
	1,4-dioxane	123-91-1	8-Hour TWA-PEL: 1 mg/m ³ (0.28 ppm)
	Acetaldehyde	75-07-0	Ceiling Limit: 45 mg/m ³ (25 ppm)
	Methyl chloride	74-87-3	PEL: 50 ppm
	Methyl chloride	74-87-3	STEL: 100 ppm (210 mg/m ³)

Biological Limit Values:

Country (Legal Basis)	Substance	Identifier	Determinant	Specimen	Sampling time	Permissible limits
ACGIH	Ethylene Glycol Monobutyl Ether	111-76-2	Butoxyacetic acid (with hydrolysis)	Creatinine in Urine	End of shift	200 mg/g
	Ethylene oxide	75-21-8	N-(2-hydroxyethyl)-valine (HEV) hemoglobin adducts	Hemoglobin adducts	Not critical	5000 pmol/g
	Ethylene oxide	75-21-8	S-(2-hydroxyethyl) mercapturic acid (HEMA)	Creatinine in urine	End of shift	5 µg/g

Information on Monitoring Procedures:

Not determined or not applicable.

Appropriate Engineering Controls:

Emergency eye wash stations and safety showers should be available in the immediate vicinity of use or handling. Provide adequate ventilation to maintain the airborne concentrations of vapor, mists, and/or dusts below the applicable workplace exposure limits, while observing recognized national standards (or equivalent).

Personal Protection Equipment

Eye and Face Protection:

Safety glasses or goggles. Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

Use safety glasses with side shields or goggles. Consider the use of a face shield for splash protection.

Use eye protection equipment that has been tested and approved by recognized national standards (or equivalent).

Skin and Body Protection:

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Avoid skin contact with used gloves. Appropriate techniques should be used to remove used gloves and contaminated clothing. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent).

Chemical resistant, impervious gloves approved by the appropriate standards. Gloves must be inspected prior to use. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. Avoid skin contact with used gloves. Appropriate techniques should be used to remove used gloves and contaminated clothing. Full body protection should be worn. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by

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a specialist before handling this product. Ensure that all personal protective equipment is approved by recognized national standards (or equivalent).

Respiratory Protection:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

General Hygienic Measures:

When handling chemical products, do not eat, drink or smoke. Wash hands after handling, before breaks, and at the end of the workday. Avoid contact with skin, eyes and clothing. Wash contaminated clothing before reuse. Perform routine housekeeping.

SECTION 9: Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Appearance	Liquid
Odor	Std.
Odor threshold	Not determined or not available.
pH	6
Melting point/freezing point	Not determined or not available.
Initial boiling point/range	Not determined or not available.
Flash point (closed cup)	Not determined or not available.
Evaporation rate	Not determined or not available.
Flammability (solid, gas)	Not determined or not available.
Upper flammability/explosive limit	Not determined or not available.
Lower flammability/explosive limit	Not determined or not available.
Vapor pressure	Not determined or not available.
Vapor density	Not determined or not available.
Density	Not determined or not available.
Relative density	Not determined or not available.
Solubilities	Not determined or not available.
Partition coefficient (n-octanol/water)	Not determined or not available.
Auto/Self-ignition temperature	Not determined or not available.
Decomposition temperature	Not determined or not available.
Dynamic viscosity	Not determined or not available.
Kinematic viscosity	Not determined or not available.
Explosive properties	Not determined or not available.
Oxidizing properties	Not determined or not available.

SECTION 10: Stability and Reactivity

Reactivity:

Not reactive under recommended handling and storage conditions.

Chemical Stability:

Stable under recommended handling and storage conditions.

Possibility of Hazardous Reactions:

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Hazardous reactions are not anticipated under recommended conditions of handling and storage.

Conditions to Avoid:

Extreme heat, open flames, hot surfaces, sparks, ignition sources and incompatible materials.

Incompatible Materials:

None known.

Hazardous Decomposition Products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological Information

Acute Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data: No data available.

Substance Data:

Name	Route	Result
Ethylene Glycol Monobutyl Ether	Dermal ATE	LD50 Rabbit: 1100 mg/kg
	Oral ATE	LD50 Rat: 1200 mg/kg (Annex VI to the CLP)
	Inhalation ATE	LC50 Rat: 3 mg/L (4 hr [Vapor] Annex VI to the CLP)
Proprietary ingredient 1	oral	LD50 Rat: 1000 - 2000 mg/kg
Proprietary ingredient 2	dermal	LD50 Rabbit: >2000 mg/kg
Proprietary ingredient 3	oral	LD50 Rat: >2000 mg/kg
	dermal	LD50 Rabbit: >2000 mg/kg
Quaternary ammonium compounds, dicoco alkyldimethyl, chlorides	Oral ATE	LD50 Rat: 500 mg/L
Ethane-1,2-diol	dermal	LD50 Mouse: > 3500 mg/kg
	Oral ATE	LD50 Rat: 500 mg/kg (Converted acute toxicity point estimate)
	inhalation	LC50 Rat: >2.5 mg/L (6 hr [Aerosol])
Ethylene oxide	Inhalation ATE	LC50 Rat: 700 ppmV (4 hr (Gas))
	Oral ATE	LD50 Rat: 100 mg/kg
1,4-dioxane	oral	LD50 Rat: 5150 mg/kg
	dermal	LD50 Rabbit: 7600 mg/kg
	inhalation	LC50 Rat: 9158 ppmV (4 hr - Vapor)
Acetaldehyde	oral	LD50 Rat: 660 mg/kg
	inhalation	LC50 Rat: 24.04 mg/L (4 hr [Vapor])
	dermal	LD50 Rabbit: 3540 mg/kg
Methyl chloride	inhalation	LC50 Rat: 21,800 mg/m ³ (4 hr [vapor])
	oral	LD50 Rat: 1800 mg/kg

Skin Corrosion/Irritation

Assessment:

Causes skin irritation.

Product Data:

No data available.

Substance Data:

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Name	Result
Quaternary ammonium compounds, dicoco alkyldimethyl, chlorides	Causes severe skin burns.
Ethylene Glycol Monobutyl Ether	Causes skin irritation.
Ethylene oxide	Causes severe skin burns.

Serious Eye Damage/Irritation

Assessment:

Causes serious eye damage.

Product Data:

No data available.

Substance Data:

Name	Result
Quaternary ammonium compounds, dicoco alkyldimethyl, chlorides	Causes serious eye damage.
Ethylene Glycol Monobutyl Ether	Causes serious eye irritation.
Ethylene oxide	Causes serious eye damage.
1,4-dioxane	Causes serious eye irritation.
Acetaldehyde	Causes serious eye irritation.

Respiratory or Skin Sensitization

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data: No data available.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

Product Data: No data available.

Substance Data:

Name	Species	Result
Ethylene oxide		May cause cancer.
1,4-dioxane		May cause cancer. 1,4-dioxane is characterized as "likely to be carcinogenic to humans." This characterization is based on the following findings: (1) inadequate evidence of carcinogenicity in humans, and (2) sufficient evidence in animals (i.e., hepatic tumors in multiple species [three strains of rats, two strains of mouse, and in guinea pigs] mesotheliomas of the peritoneum, mammary, and nasal tumors have also been observed in rats following 2 years of oral exposure to 1,4- dioxane). U.S. Environmental Protection Agency's Integrated Risk Information System (IRIS).

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Name	Species	Result
Acetaldehyde	Rat	IARC has concluded that there is inadequate evidence in humans for the carcinogenicity of acetaldehyde and that there is sufficient evidence in experimental animals for the carcinogenicity of acetaldehyde. The overall conclusion was that acetaldehyde is possible carcinogenic to humans (Group 2B).
Methyl chloride		Suspected of causing cancer by inhalation.

International Agency for Research on Cancer (IARC):

Name	Classification
Quaternary ammonium compounds, dicoco alkyldimethyl, chlorides	Not Applicable
Ethylene Glycol Monobutyl Ether	Group 3
Ethane-1,2-diol	Not Applicable
Ethylene oxide	Group 1
1,4-dioxane	Group 2B
Acetaldehyde	Group 2B
Methyl chloride	Group 3

National Toxicology Program (NTP):

Name	Classification
Quaternary ammonium compounds, dicoco alkyldimethyl, chlorides	Not Applicable
Ethylene Glycol Monobutyl Ether	Not Applicable
Ethane-1,2-diol	Not Applicable
Ethylene oxide	Known to be human carcinogens
1,4-dioxane	Reasonably anticipated to be human carcinogens
Acetaldehyde	Reasonably anticipated to be human carcinogens
Methyl chloride	Reasonably anticipated to be human carcinogens

OSHA Carcinogens: Not applicable

Germ Cell Mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data:

Name	Result
Ethylene oxide	May cause genetic defects.
Acetaldehyde	Suspected of causing genetic defects.

Reproductive Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

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Substance Data:

Name	Result
Ethylene oxide	May damage fertility. Suspected of damaging the unborn child.
Methyl chloride	Suspected of damaging fertility by inhalation.

Specific Target Organ Toxicity (Single Exposure)

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data:

Name	Result
Ethylene oxide	May cause respiratory irritation.
	May cause drowsiness or dizziness.
1,4-dioxane	May cause respiratory irritation.
Acetaldehyde	May cause respiratory irritation.

Specific Target Organ Toxicity (Repeated Exposure)

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data:

Name	Result
Ethane-1,2-diol	May cause damage to Kidney through prolonged or repeated oral exposure.
Ethylene oxide	Studies on the effects of Ethylene oxide have concluded not only neurotoxic symptoms in humans, but also measured effects on nerve conduction velocities indicative of sensorimotor neuropathy, and axonal degeneration observed in nerve biopsies of exposed workers.
Methyl chloride	May causes damage to organs through prolonged or repeated exposure by inhalation.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available.

Substance Data: No data available.

Information on Likely Routes of Exposure:

No data available.

Symptoms Related to the Physical, Chemical, and Toxicological Characteristics:

No data available.

Other Information:

No data available.

SECTION 12: Ecological Information

Acute (Short-Term) Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data: No data available.

Substance Data:

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Name	Result
Ethylene Glycol Monobutyl Ether	Aquatic Invertebrates EC50 Daphnia magna: 1550 mg/L (48 hr [mobility])
	Fish LC50 Oncorhynchus mykiss: 1474 mg/L (96 hr)
	Aquatic Plants EC50 Raphidocelis subcapitata: 1840 mg/L (72 hr [Growth rate])
Ethane-1,2-diol	Aquatic Plants EC50 Raphidocelis subcapitata: 6500 - 13,000 mg/L (96 hr [growth rate])
	Aquatic Invertebrates EC50 Daphnia magna: > 100 mg/L (48 hr)
	Fish LC50 Pimephales promelas: 72,860 mg/L (96 hr)
Ethylene oxide	Aquatic Plants EC50 Pseudokirchneriella subcapitata: 240 mg/L (96 h, read-across substance data)
	Aquatic Invertebrates LC50 Daphnia magna: 212 mg/L (48 h)
	Fish LC50 Pimephales promelas: 84 mg/L (96 h)
1,4-dioxane	Fish LC50 Pimephales promelas: 9850 mg/L (96 hr)
	Aquatic Invertebrates EC50 Daphnia magna: >1000 mg/L (48 hr)
	Aquatic Plants EC50 Pseudokirchneriella subcapitata: >1000 mg/L (72 hr)
Acetaldehyde	Aquatic Plants EC50 Pseudokirchneriella subcapitata: >100 mg/L (72 hr [growth rate])
	Aquatic Invertebrates EC50 Daphnia magna: 57.4 mg/L (48 hr [mobility])
	Fish LC50 Lepomis macrochirus: 53 mg/L (96 hr)
Methyl chloride	Fish LC50 Freshwater fish: 396 mg/L (96 hr [QSAR substance data])
	Aquatic Invertebrates EC50 Daphnia magna: 200 mg/L (48 hr [mobility])
	Aquatic Plants EC50 Freshwater green algae: 231 mg/L (96 hr [growth rate, QSAR substance data])

Chronic (Long-Term) Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data: No data available.

Substance Data:

Name	Result
Ethylene Glycol Monobutyl Ether	Fish NOEC Danio rerio: > 100 mg/L (21 d [markers for endocrine disruptive effects])
	Aquatic Invertebrates NOEC Daphnia magna: 100 mg/L (21 d [reproduction])
Ethane-1,2-diol	Fish NOEC Menidia peninsulae: > 40 mg/L (28 d [mortality])
	Aquatic Invertebrates NOEC Daphnia magna: > 15,000 mg/L (21 d [reproduction])
1,4-dioxane	Fish NOEC Pimephales promelas: 145 mg/L (32 d)
	Aquatic Invertebrates NOEC Daphnia magna: 1000 mg/L (21 d)
Acetaldehyde	Fish LC50 Poecilia reticulata: 35 mg/L (14 d)

Persistence and Degradability

Product Data: No data available.

Substance Data:

Name	Result
Ethylene Glycol Monobutyl Ether	The substance is readily biodegradable. 90.4% degradation, measured by CO2 evolution, after 28 days.

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Name	Result
Ethane-1,2-diol	The substance is Readily biodegradable. 90-100% degradation in water, measured by DOC removal, after 10 days.
Ethylene oxide	Readily biodegradable (96% degradation after 28 days, measured by TOC removal).
1,4-dioxane	Not readily biodegradable (< 10 % degradation after 29 days, measured by CO2 evolution).
Acetaldehyde	The substance is readily biodegradable. 80% degradation [BOD], after 14 days.
Methyl chloride	The substance is readily biodegradable. 77% degradation in water, measured by O2 consumption, after 28 days.

Bioaccumulative Potential

Product Data: No data available.

Substance Data:

Name	Result
Ethylene Glycol Monobutyl Ether	The substance is not expected to bioaccumulate (log Kow = 0.83).
Ethane-1,2-diol	The substance is not expected to bioaccumulate (log Pow=: -1.93).
Ethylene oxide	Low potential for bioaccumulation (logKow = -0.3).
1,4-dioxane	Does not accumulate in aquatic organisms (mean BCF: 0.45).
Methyl chloride	The substance is not expected to bioaccumulate (log Pow:0.91).

Mobility in Soil

Product Data: No data available.

Substance Data:

Name	Result
Ethane-1,2-diol	Adsorption to the solid soil phase is not expected.
1,4-dioxane	Significant adsorption to solid soil phase is not expected (calculated log Koc: 0.51 at 25 °C).
Methyl chloride	The substance is mobile, therefore, there is low potential for adsorption to soil and sediment (log Koc: 1.121, QSAR substance data).

Results of PBT and vPvB assessment

Product Data:

PBT assessment: This product does not contain any substances that are assessed to be a PBT.

vPvB assessment: This product does not contain any substances that are assessed to be a vPvB.

Substance Data:

PBT assessment:

Ethylene Glycol Monobutyl Ether	The substance is not PBT.
Ethane-1,2-diol	The substance is not PBT.
Ethylene oxide	This substance is not PBT.
1,4-dioxane	Under assessment as Persistent, Bioaccumulative and Toxic (PBT list).
Acetaldehyde	The substance is not PBT.
Methyl chloride	The substance is not PBT.

vPvB assessment:

Ethylene Glycol Monobutyl Ether	The substance is not vPvB.
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Ethane-1,2-diol	The substance is not vPvB.
Ethylene oxide	This substance is not vPvB.
1,4-dioxane	This substance is not vPvB.
Acetaldehyde	The substance is not vPvB.
Methyl chloride	The substance is not vPvB.

Other Adverse Effects: No data available.

SECTION 13: Disposal Considerations

Disposal Methods:

It is the responsibility of the waste generator to characterize all waste material according to regulatory entities.

Contaminated packages:

Not determined or not applicable.

SECTION 14: Transport Information

United States Transportation of Dangerous Goods (49 CFR DOT)

UN Number	Not Regulated
UN Proper Shipping Name	Not regulated
UN Transport Hazard Class(es)	None
Packing Group	None
Environmental Hazards	None
Special Precautions for User	None

International Maritime Dangerous Goods (IMDG)

UN Number	Not regulated
UN Proper Shipping Name	Not regulated
UN Transport Hazard Class(es)	None
Packing Group	None
Environmental Hazards	None
Special Precautions for User	None

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN Number	Not regulated
UN Proper Shipping Name	Not regulated
UN Transport Hazard Class(es)	None
Packing Group	None
Environmental Hazards	None
Special Precautions for User	None

SECTION 15: Regulatory Information

United States Regulations

Inventory Listing (TSCA): All ingredients are listed-active or exempt.

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Significant New Use Rule (TSCA Section 5): None of the ingredients are listed.

Export Notification under TSCA Section 12(b): None of the ingredients are listed.

SARA Section 302 Extremely Hazardous Substances:

75-21-8	Ethylene oxide	Listed
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SARA Section 313 Toxic Chemicals:

111-76-2	Ethylene Glycol Monobutyl Ether	Listed
107-21-1	Ethane-1,2-diol	Listed
75-21-8	Ethylene oxide	Listed
123-91-1	1,4-dioxane	Listed
75-07-0	Acetaldehyde	Listed
74-87-3	Methyl chloride	Listed

CERCLA:

111-76-2	Ethylene Glycol Monobutyl Ether	Listed	N/A
107-21-1	Ethane-1,2-diol	Listed	5000 lbs
75-21-8	Ethylene oxide	Listed	10 lbs
123-91-1	1,4-dioxane	Listed	100 lbs
75-07-0	Acetaldehyde	Listed	1000 lbs
74-87-3	Methyl chloride	Listed	100 lbs

RCRA:

75-21-8	Ethylene oxide	Listed	U115
123-91-1	1,4-dioxane	Listed	U108
75-07-0	Acetaldehyde	Listed	U001
74-87-3	Methyl chloride	Listed	U045, F025

Section 112(r) of the Clean Air Act (CAA):

107-21-1	Ethane-1,2-diol	Listed
75-21-8	Ethylene oxide	Listed
75-07-0	Acetaldehyde	Listed
74-87-3	Methyl chloride	Listed

Massachusetts Right to Know:

111-76-2	Ethylene Glycol Monobutyl Ether	Listed
107-21-1	Ethane-1,2-diol	Listed
75-21-8	Ethylene oxide	Listed
123-91-1	1,4-dioxane	Listed
75-07-0	Acetaldehyde	Listed
74-87-3	Methyl chloride	Listed

New Jersey Right to Know:

111-76-2	Ethylene Glycol Monobutyl Ether	Listed
107-21-1	Ethane-1,2-diol	Listed
75-21-8	Ethylene oxide	Listed
123-91-1	1,4-dioxane	Listed
75-07-0	Acetaldehyde	Listed
74-87-3	Methyl chloride	Listed

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New York Right to Know:

111-76-2	Ethylene Glycol Monobutyl Ether	Listed
107-21-1	Ethane-1,2-diol	Listed
75-21-8	Ethylene oxide	Listed
123-91-1	1,4-dioxane	Listed
75-07-0	Acetaldehyde	Listed
74-87-3	Methyl chloride	Listed

Pennsylvania Right to Know:

111-76-2	Ethylene Glycol Monobutyl Ether	Listed
107-21-1	Ethane-1,2-diol	Listed
75-21-8	Ethylene oxide	Listed
123-91-1	1,4-dioxane	Listed
75-07-0	Acetaldehyde	Listed
74-87-3	Methyl chloride	Listed

California Proposition 65:

⚠️WARNING: This product can expose you to chemicals including 1,4-dioxane and Acetaldehyde; which are known to the State of California to cause cancer; and Ethane-1,2-diol and Methyl chloride, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

⚠️WARNING: This product can expose you to Ethylene oxide; which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Additional information: Not determined.

SECTION 16: Other Information

Abbreviations and Acronyms: None

Disclaimer:

This product has been classified in accordance with OSHA HCS 2012 guidelines. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation and disposal and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

NFPA: 0-0-0

HMIS: 0-0-0

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End of Safety Data Sheet