MATERIAL SAFETY DATA SHEET

Bayer MaterialScience

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Product Safety & Regulatory Affairs
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USA

TRANSPORTATION EMERGENCY

CALL CHEMTREC:	(800) 424-9300
For TDI Products, call CANUTEC:	(613) 996-6666

NON-TRANSPORTATION

Emergency Phone, call CHEMTREC:	Call Chemtrec
Information Phone:	(800) 662-2927

1. Product and Company Identification

Product Name:	ECOBAY CC CAN
Material Number:	83354322
Chemical Family:	Polyol System
Product Use:	Refer to technical literature.

2. Hazards Identification

Emergency Overview

Warning

Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. May cause nausea or dizziness. Causes respiratory tract irritation. Vapor reduces oxygen available for breathing. Causes skin irritation. Causes eye irritation. May cause a temporary fogging of the eyes. When this product is sprayed, a full-face or hood-type supplied air respirator is required. May affect nervous system. May cause irregular heartbeat. May cause blood disorders. May cause kidney damage. May cause liver damage.

Potential Health Effects

Primary Routes of Entry:	Inhalation, Eye Contact, Skin Contact
Medical Conditions Aggravated by Exposure:	Respiratory disorders, Eye disorders, Skin disorders

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

Inhalation

Acute Inhalation

For Component: Hydrofluorocarbon

Overexposure to vapor may produce dizziness, drowsiness, or nausea. May induce cardiac arrhythmia (irregular heartbeat) in some individuals. Vapor can reduce oxygen available for breathing. May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

For Component: Glycol

Inhalation is unlikely due to the low vapor pressure. If misted or handled at elevated temperatures, high concentrations may cause respiratory tract irritation.

For Component: Tris-(2-chloroisopropyl)-phosphate
May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

For Component: 2-Butoxyethanol
Expected to be toxic by inhalation. May cause nervous system effects which can include symptoms of dizziness, incoordination, headache, numbness, and/or confusion.

For Component: Tertiary Amine
Corrosive with symptoms of coughing, burning, ulceration, and pain.

For Component: Ester derivative
May be harmful by inhalation. May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

Skin
Acute Skin
For Component: Polymer
Causes skin irritation with symptoms of reddening, itching, and swelling.

For Component: Hydrofluorocarbon
Slightly toxic by skin absorption. May cause slight irritation.

For Component: Glycol
May cause irritation with symptoms of reddening and itching.

For Component: Tris-(2-chloroisopropyl)-phosphate
May cause slight irritation.

For Component: 2-Butoxyethanol
Toxic by skin absorption. May cause irritation with symptoms of reddening and itching.

For Component: Tertiary Amine
Toxic by skin absorption. Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.

For Component: Ester derivative
May cause irritation with symptoms of reddening and itching. Slightly toxic by skin absorption.

Chronic Skin
For Component: 2-Butoxyethanol
May cause defatting of the skin with symptoms of dryness and cracking. Chronic exposure may cause symptoms similar to those described in chronic inhalation.

Eye
Acute Eye
For Component: Polymer
Causes irritation with symptoms of reddening, tearing, stinging, and swelling.

For Component: Hydrofluorocarbon
May cause slight irritation.

For Component: Glycol
May cause slight irritation.

For Component: Tris-(2-chloroisopropyl)-phosphate
Not expected to be irritating.

For Component: 2-Butoxyethanol
Causes irritation with symptoms of reddening, tearing, stinging, and swelling.

For Component: Tertiary Amine
Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage. Vapors can cause temporary corneal edema with symptoms of blurred vision or the appearance of halos around bright objects.

For Component: Ester derivative
May cause irritation with symptoms of reddening, tearing and stinging.

Ingestion
Acute Ingestion
For Component: Glycol
May cause nervous system effects which can include symptoms of dizziness, incoordination, headache, numbness, and/or confusion.

For Component: Tris-(2-chloroisopropyl)-phosphate
May be harmful if swallowed. Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea. Moderately toxic by ingestion.

For Component: 2-Butoxyethanol
Toxic by ingestion. Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea. May cause nervous system effects which can include symptoms of dizziness, incoordination, headache, numbness, and/or confusion.

For Component: Tertiary Amine
Moderately toxic by ingestion. Corrosive to the digestive tract with symptoms of burning and ulceration.

For Component: Ester derivative
Not expected to be harmful if swallowed.

Chronic Ingestion
For Component: Glycol
Chronic overexposure to this product may cause effects as noted under acute overexposure. May cause kidney damage. Repeated excessive exposures may cause liver or kidney effects If ingested the individual should be observed for signs of numbness, incoordination, headache, and confusion.

For Component: Tris-(2-chloroisopropyl)-phosphate
May cause liver damage. May cause kidney damage.

For Component: 2-Butoxyethanol
May cause blood disorders. May cause kidney damage. May cause liver damage.

General Effects of Exposure
Acute Effects of Exposure
For Component: 2-Butoxyethanol
Absorption may cause acute toxic effects, specifically damage to red blood cells.

Carcinogenicity:

2-Butoxyethanol	**IARC** - Overall evaluation: 3 Not classifiable as to carcinogenicity to humans. **ACGIH** - Hazard Designation: Group A3 Confirmed animal carcinogen with unknown relevance to humans.

3. Composition/Information on Ingredients

Hazardous components

Weight percent	Components	CAS-No.
15 - 40%	Polymer	CAS# is a trade secret
7 - 13%	Hydrofluorocarbon	460-73-1
5 - 10%	Glycol	CAS# is a trade secret
5 - 10%	Tris-(2-chloroisopropyl)-phosphate	13674-84-5
1 - 5%	2-Butoxyethanol	111-76-2
1 - 5%	Tertiary Amine	CAS# is a trade secret
1 - 5%	Ester derivative	CAS# is a trade secret
0.1 - 1%	Ethylene Glycol	107-21-1

4. First aid measures

Eye contact
In case of contact, flush eyes with plenty of water for at least 15 minutes. Call a physician immediately.

Skin contact
In case of skin contact, wash affected areas with soap and water. Immediately remove contaminated clothing and shoes. Get medical attention.

Inhalation
If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

Ingestion
If ingested, do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

5. Firefighting measures

Conditions of Flammability Not Available

Suitable extinguishing media: Carbon dioxide (CO2), Dry chemical, Foam, water spray for large fires.

Unsuitable extinguishing media Not Available

Special Fire Fighting Procedures
Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture.

Unusual Fire/Explosion Hazards
The reaction of this product with polymeric MDI ("A" side) will release heat (e.g., it is an exothermic reaction). Thus, spraying foam too thickly in a single lift, or not allowing sufficient time between lifts, can result in excessive heat generation to the point where the foam may char, smolder or burn. Refer to the appropriate BaySystems technical datasheet for application instructions.

Flash point: > 93.34 °C (200.01 °F)

Lower Flammable Limit Not Available

Upper Flammable Limit Not Available

Auto-ignition temperature Not Available

Hazardous Combustion Products
By Fire and Thermal Decomposition: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke., other potentially toxic fumes

Sensitivity to Static Discharge Not Available

6. Accidental release measures

Spill and Leak Procedures
Evacuate and keep unnecessary people out of spill area. Remove ignition sources. Notify management. Put on protective equipment. Control source of the leak. Ventilate. Contain the spill. Cover spill with inert material (e.g., dry sand or earth) and collect for proper disposal.

7. Handling and storage

Storage temperature:
minimum: 18.33 °C (65 °F)
maximum: 26.67 °C (80 °F)

Storage period
6 Months

Handling/Storage Precautions
Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Keep container closed when not in use. Material is hygroscopic and may absorb small amounts of atmospheric moisture. If contamination with isocyanates is suspected, do not reseal containers. Do not get on skin or clothing. Do not get in eyes. Do not breathe vapours or spray mist.

8. Exposure controls/personal protection

2-Butoxyethanol (111-76-2)
US. ACGIH Threshold Limit Values
Time Weighted Average (TWA): 20 ppm
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
PEL: 50 ppm, 240 mg/m3
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)
Skin designation: Can be absorbed through the skin.
US. ACGIH Threshold Limit Values
Hazard Designation: Group A3 Confirmed animal carcinogen with unknown relevance to humans.

Industrial Hygiene/Ventilation Measures
When handling this product, ventilation of the work area is recommended.

Respiratory protection
When this product is sprayed in combination with polymeric MDI ("A" side), a full-face or hood-type supplied air respirator operated in the positive pressure or continuous flow mode is required. For exterior spray applications where the use of supplied air respiratory protection may create a safety hazard (e.g., roof applications), an air purifying respirator with combination organic vapor/particulate (P100) cartridges may be substituted for a supplied air respirator. When handling the liquid product, particularly if heated or in a confined area, an air purifying respirator with combination organic vapor/particulate (P100) cartridges is recommended. The respiratory protection selected must comply with the requirements set forth in OSHA's Respiratory Protection Standard (29 CFR 1910.134). When APRs are used, (a) the cartridges must be equipped with end-of-service life indicators (ESLI) certified by NIOSH, or (b) a change out schedule, based on objective information or data that will ensure that the cartridges are changed out before the end of their service life, must be developed and implemented. The basis for the change out schedule must be described in the written respirator program.

Hand protection
When this product is sprayed in combination with polymeric MDI ("A" side), fabric gloves coated in nitrile, neoprene, butyl or PVC are recommended. When handling liquid product, nitrile, neoprene, butyl or PVC gloves are recommended.

Eye protection
When this product is sprayed in combination with polymeric MDI ("A" side), eye protection will be provided by the full-face or hood-type air supplied respirator as mentioned above in the respiratory protection section. When handling liquid product, chemical safety goggles or safety glasses with side-shields are required.

Skin and body protection
When this product is sprayed in combination with polymeric MDI ("A" side), a disposable full body suit (e.g., Tyvek, Kleenguard, etc.) with attached hood and disposable over-boots are required. When handling liquid product, wear cloth work clothing including long pants and long-sleeved shirts. If the potential for splash to the body exists, impermeable protective clothing is recommended.

Additional Protective Measures
Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product.

9. Physical and chemical properties

Form:	liquid
Appearance	Not Available
Color:	Teal
Odor:	Amine
Odor Threshold:	Not Available
pH:	8.5 - 10.5
Freezing Point:	Not Available
Boiling point/boiling range:	not established
Vapour pressure	Not Available
Vapor Density:	Not Available
Specific Gravity:	1.14 - 1.16
Solubility in Water:	Partially soluble
Viscosity, dynamic:	450 - 500 cps @ 25 °C (77 °F)

10. Stability and reactivity

Hazardous Reactions

Hazardous polymerisation does not occur.The reaction of this product with polymeric MDI ("A" side) will release heat (e.g., it is an exothermic reaction). Thus, spraying foam too thickly in a single lift, or not allowing sufficient time between lifts, can result in excessive heat generation to the point where the foam may char, smolder or burn. Refer to the appropriate BaySystems technical datasheet for application instructions.

Stability

Stable

Materials to avoid

Oxidizing agents, Isocyanates

Hazardous decomposition products

By Fire and Thermal Decomposition: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke., other potentially toxic fumes

11. Toxicological information

Toxicity Data for Polymer

Toxicity Note

Toxicity data is based on a similar product.

Acute oral toxicity

LD50: 1,370 mg/kg (rat)

Acute dermal toxicity

LD50: 12800 (rabbit)

Toxicity Data for Hydrofluorocarbon

Acute inhalation toxicity

LC50: > 200000 ppm, 4 h (Rat)

Acute dermal toxicity

LD50: > 2,000 mg/kg (rat)

Skin irritation

Non-irritating

Eye irritation

rabbit, Mild eye irritation

Sensitisation

Skin sensitisation:: non-sensitizer

Repeated dose toxicity

28 d, inhalation: NOAEL: 50,000 ppm, (Rat)
90 d, Inhalation: NOAEL: 2000 ppm, (Rat)

Mutagenicity

Genetic Toxicity in Vitro:
Cytogenetic assay: ambiguous (human lymphocytes, Metabolic Activation: with/without)
Ames: negative (Metabolic Activation: with/without)

Genetic Toxicity in Vivo:
Micronucleus Assay: negative (mouse)
negative

Developmental Toxicity/Teratogenicity

No Teratogenic effects observed at doses tested.

Toxicity Data for Glycol
Acute oral toxicity
LD50: > 5,000 mg/kg (Rat)
Lowest lethal dose: 1 ml/kg (Human) (Case Report)

Acute dermal toxicity
LD50: 11.2 l/kg (rabbit)

Skin irritation
human skin, Slightly irritating

Eye irritation
rabbit, Non-irritating

Sensitisation
Maximisation Test (GPMT): negative (guinea pig)

Repeated dose toxicity
90 Days, Oral: NOAEL: 200 mg/kg, (Rat,)
6 months, Inhalation: NOAEL: < 0.02 mg/l, (rat,)
225 days, Oral: NOAEL: 100 mg/kg, (Rat, male/female, daily)

Mutagenicity
Genetic Toxicity in Vitro:
Ames: Negative results were reported in various in vitro studies. (Salmonella typhimurium, Metabolic Activation: with/without)
Chromosome aberration test: Negative results were reported in various in vitro studies. (Chinese hamster ovary (CHO) cells, Metabolic Activation: with/without)
Genetic Toxicity in Vivo:
Cytogenetic assay: (hamster,)
positive
Cytogenetic assay: (hamster,)
negative
In vivo micronucleus test: (mouse, male, intraperitoneal)
negative

Carcinogenicity
rat, male/female, Oral, 108, daily,
Animal testing did not show any carcinogenic effects.
rat, male/female, Oral, 108, ad libitum,

Toxicity to Reproduction/Fertility
One generation study, oral, (mouse) NOAEL (parental): 3.5%,
Fertility and mating indices were decreased. The survival and growth rates were reduced.
Fertility Screening, oral, daily, (mouse, male/female) NOAEL (parental): 3,060 mg/kg,

Developmental Toxicity/Teratogenicity

mouse, oral, NOAEL (maternal): 1,250 mg/kg,
Fetotoxicity seen only with maternal toxicity.
mouse, oral, NOAEL (maternal): 1,250 mg/kg,
Fetotoxicity seen only with maternal toxicity.
rabbit, female, oral, GD 7-19, daily, NOAEL (teratogenicity): 1,000 mg/kg, NOAEL (maternal): 1,000 mg/kg,

Toxicity Data for Tris-(2-chloroisopropyl)-phosphate

Acute oral toxicity
LD50: 632 mg/kg (rat)

Acute inhalation toxicity
LC50: > 17,800 mg/l, 1 h (rat, Male/Female)
aerosol

Acute dermal toxicity
LD50: > 5,000 mg/kg (rabbit, Male/Female)

Skin irritation
human skin, Patch Test, Non-irritating
human skin, Patch Test, Non-irritating

Eye irritation
rabbit, OECD Test Guideline 405, Exposure Time: 24 h, Slightly irritating

Sensitisation
dermal: non-sensitizer (guinea pig, Maximization Test)
dermal: non-sensitizer (Human, Patch Test)

Repeated dose toxicity
90 Days, oral: NOAEL: 36 mg/kg, (Rat, male)
13 weeks, oral: NOAEL: 2500 ppm, LOAEL: 800 ppm, (Rat, male, daily)

Mutagenicity
Genetic Toxicity in Vitro:
Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)
Positive and negative results were reported.
Mammalian cell - gene mutation assay: positive (Mouse lymphoma cells (L5178Y/TK), Metabolic Activation: with)
Positive and negative results were reported.
Genetic Toxicity in Vivo:
Micronucleus test: negative (mouse, male/female, intraperitoneal)
negative

Toxicity to Reproduction/Fertility
Other method, inhalation, daily, (rat, male)
Reproductive effects have been observed in animal studies.
Two-generation study, (feeding study) oral, daily, (rat, male/female) NOAEL (parental): 85 mg/kg,

Developmental Toxicity/Teratogenicity
rat, female, oral, gestation, daily, NOAEL (teratogenicity): > 1%, NOAEL (maternal): > 1%
No Teratogenic effects observed at doses tested., No fetotoxicity observed at doses tested.
rat, female, oral, gestation, NOAEL (teratogenicity): 1,000 mg/kg, NOAEL (maternal): 1,000 mg/kg,

Toxicity Data for 2-Butoxyethanol

Acute oral toxicity
LD50: 470 mg/kg (rat)
LD50: 300 mg/kg (rabbit)

Acute inhalation toxicity
LC50: 2.21 - 2.39 mg/l, 4 h (Rat)

Acute dermal toxicity
LD50: 220 mg/kg (rabbit)

Skin irritation
rabbit, Exposure Time: 4 h, irritating

Eye irritation
rabbit, OECD Test Guideline 405, irritating

Sensitisation
dermal: non-sensitizer (Guinea pig, Maximization Test)
dermal: non-sensitizer (Human, Patch Test)
Skin sensitisation according to Magnusson/Kligmann (maximizing test):: negative (guinea pig, OECD Test Guideline 406)

Repeated dose toxicity
90 Days, inhalation: NOAEL: 0.121 mg/kg, (Rat, Male/Female, daily)
30 Days, inhalation: NOAEL: < 0.27 mg/kg, (Rat, Male/Female, daily)
90 days, dermal: NOAEL: 150 mg/kg, (rabbit, Male/Female, daily)
90 Days, Oral: NOAEL: 0.45 mg/l, (Rat, Male/Female, daily)
14 weeks, inhalation: (Rat, Male/Female, 6 hrs/day 5 days/week)

Mutagenicity
Genetic Toxicity in Vitro:
Ames: Negative results were reported in various in vitro studies. (Salmonella typhimurium, Metabolic Activation: with/without)
Mammalian cell - gene mutation assay: Negative results were reported in various in vitro studies. (Chinese hamster ovary (CHO) cells, Metabolic Activation: with/without)
Genetic Toxicity in Vivo:
Micronucleus Assay: negative (mouse,)
negative
Micronucleus Assay: negative (rat, male, intraperitoneal)
negative

Carcinogenicity
mouse, Male/Female, inhalation, 2 years, daily,
Animal experiments showed a statistically significant number of tumours.

Toxicity to Reproduction/Fertility
Other method, oral, daily, (Rat, Male/Female) NOAEL (parental): 304 mg/kg,
Reproductive effects have been observed in animal studies.
Two generation study, oral, (mouse, Male/Female) NOAEL (parental): 720 mg/kg, NOAEL (F1): 720 mg/kg, NOAEL (F2): 720 mg/kg,

Developmental Toxicity/Teratogenicity
Rat, female, inhalation, gestation, daily, NOAEL (teratogenicity): 0.97 mg/kg, NOAEL (maternal): 0.24 mg/kg,

Teratogenic effects seen only with maternal toxicity.
rabbit, female, gestation, daily, NOAEL (teratogenicity): 0.97 mg/kg, NOAEL (maternal): 0.48 mg/kg,
Rat, Female, dermal, gestation, daily, NOAEL (teratogenicity): 5,400 mg/kg, NOAEL (maternal): < 1,800 mg/kg,
rabbit, female, inhalation, gestation, 6 hours/day, NOAEL (maternal): 50 ppm

Toxicity Data for Tertiary Amine

Acute oral toxicity
LD50: 1,045 mg/kg (Rat)

Acute inhalation toxicity
LC50: 2.09 mg/l, 6 h (Rat)

Acute dermal toxicity
LD50: 230 mg/kg (rabbit)

Skin irritation
Severely irritating

Eye irritation
severe irritant

Other Relevant Toxicity Information
May cause irritation of respiratory tract.

Toxicity Data for Ester derivative

Acute oral toxicity
LD50: > 5,000 mg/kg (Rat)

Acute inhalation toxicity
LC50: 4.53 - 6.1 mg/l, 4 h (Rat)

Acute dermal toxicity
LD50: > 3,400 mg/kg (rabbit)

Skin irritation
OECD Test Guideline 404, Non-irritating

Eye irritation
rabbit, Draize, Moderately irritating

Sensitisation
non-sensitizer (Guinea pig)
Skin sensitization (local lymph node assay (LLNA)):: negative (mouse, OECD Test Guideline 429)

Repeated dose toxicity
Inhalation: NOAEL: < 0.16 mg/l, (Rat, Male/Female)
2 weeks, dermal: NOAEL: 1,000 mg/kg, (Rat, Male/Female, 6 hrs/day 7 days/week)

Mutagenicity
Genetic Toxicity in Vitro:
Ames: negative (Salmonella typhimurium, Metabolic Activation: with/without)
Chromosome aberration test in vitro: negative (Metabolic Activation: with/without)
In vitro mammalian cell gene mutation test: positive (Human lymphocytes, Metabolic Activation: with)
In vitro mammalian cell gene mutation test: negative (Human lymphocytes, Metabolic Activation: without)
Genetic Toxicity in Vivo:
Micronucleus Assay: negative (mouse, Male/Female, inhalation)

negative

Toxicity to Reproduction/Fertility
One generation study, inhalation, (rat, Male/Female) NOAEL (parental): 1 mg/l, NOAEL (F1): 0.4 mg/l,

Developmental Toxicity/Teratogenicity
rat, female, inhalation, NOAEL (teratogenicity): 1 mg/l, NOAEL (maternal): 0.16 mg/l,
No fetotoxicity observed at doses tested.

12. Ecological information

Ecological Data for ECOBAY CC CAN
Additional Ecotoxicological Remarks
No data available for this product.

Ecological Data for Hydrofluorocarbon
Acute and Prolonged Toxicity to Fish
LC50: > 81.8 mg/l (Rainbow trout (Salmo gairdneri), 48 h)

Acute Toxicity to Aquatic Invertebrates
EC50: > 97.9 mg/l (Water flea (Daphnia magna), 96 h)

Ecological Data for Glycol
Biochemical Oxygen Demand (BOD)
5 Days, 4 %
20 Days, 53 %

Acute and Prolonged Toxicity to Fish
LC50: > 10,000 mg/l (Fathead minnow (Pimephales promelas), 48 h)
LC0: > 1,000 mg/l (Bluegill (Lepomis macrochirus), 96 h)

Acute Toxicity to Aquatic Invertebrates
EC50: > 10,000 mg/l (Water flea (Daphnia magna), 24 h)

Toxicity to Aquatic Plants
NOEC: 100 mg/l, End Point: growth (other: algae, 7 d)

Toxicity to Microorganisms
> 10,000 mg/l, (Other bacteria)

Ecological Data for Tris-(2-chloroisopropyl)-phosphate
Biodegradation
Aerobic, 0 %, Exposure time: 28 Days, Not readily biodegradable.

Bioaccumulation
Cyprinus carpio (Carp), Exposure time: 42 Days, ca. 0.8 - 2.8 BCF

Acute and Prolonged Toxicity to Fish
LC50: ca. 84 mg/l (Bluegill (Lepomis macrochirus), 96 h)
LC50: 51 mg/l (Fathead minnow (Pimephales promelas), 96 h)
LC50: 30 mg/l (Guppy (Poecilia reticulata), 96 h)

Acute Toxicity to Aquatic Invertebrates
EC50: ca. 131 mg/l (Water flea (Daphnia magna), 48 h)

Toxicity to Aquatic Plants
EC50: 45 mg/l, End Point: biomass (Green algae (Scenedesmus subspicatus), 72 h)
EC50: 41 - 55 mg/l, End Point: biomass (Green algae (Selenastrum capricornutum), 96 h)

Toxicity to Microorganisms
EC50: 295 mg/l, (Photobacterium phosphoreum, 30 min)
EC50: 784 mg/l, (Activated sludge microorganisms, 3 h)

Ecological Data for 2-Butoxyethanol
Biodegradation
aerobic, 100 %, Exposure time: 28 Days

Biochemical Oxygen Demand (BOD)
5 Days, 1,300 mg/g
20 Days, 1,800 mg/g

Chemical Oxygen Demand (COD)
2,180 mg/g

Theoretical Biological Oxygen Demand (ThBOD)
2,300 mg/g

Bioaccumulation
ca. 2.5 BCF

Acute and Prolonged Toxicity to Fish
LC50: 1,490 mg/l (Bluegill (Lepomis macrochirus), 96 h)
1,250 mg/l (Silverside Minnow (Menidia peninsulae), 96 h)
LC50: 2,137 mg/l (Fathead minnow (Pimephales promelas), 96 h)

Acute Toxicity to Aquatic Invertebrates
EC50: 1,720 - 1,850 mg/l (Water flea (Daphnia magna), 24 h)
LC50: 800 mg/l (Common shrimp (Crangon crangon), 48 h)

Toxicity to Aquatic Plants
EC50: > 1,000 mg/l, (Green algae (Selenastrum capricornutum), 7 Days)

Toxicity to Microorganisms
IC50: > 1,000 mg/l, (Activated sludge microorganisms, 16 h)

Ecological Data for Tertiary Amine
Biodegradation
Not readily biodegradable.

Acute and Prolonged Toxicity to Fish
LC50: 220 mg/l (Golden orfe (Leuciscus idus), 96 h)

Ecological Data for Ester derivative
Biodegradation
aerobic, 75 %, Exposure time: 28 d, i.e. readily biodegradable

Acute and Prolonged Toxicity to Fish
LC50: 33.6 mg/l (Fathead minnow (Pimephales promelas), 96 h)

Acute Toxicity to Aquatic Invertebrates
EC50: 122.1 - 163.5 mg/l (Water flea (Daphnia magna), 48 h)

Toxicity to Microorganisms
EC10: 62.5 mg/l, (Pseudomonas putida, 18 h)

13. Disposal considerations

Waste Disposal Method
Waste disposal should be in accordance with existing federal, state and local environmental control laws.

Empty Container Precautions
Recondition or dispose of empty container in accordance with governmental regulations.

14. Transport information

Land transport (TDG)
Non-Regulated

15. Regulatory information

DSL Status This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.

WHMIS Classification:
D2A, D2B Controlled

SNAC Components:

Weight percent	Components	CAS-No.
7 - 13%	Hydrofluorocarbon	460-73-1

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

16. Other information

Contact person:	Product Safety Department
Telephone:	(412) 777-2835
MSDS Number:	112000042578
Version Date:	10/24/2014
Report version:	1.0

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