

MATERIAL SAFETY DATA SHEET



Bayer MaterialScience

Bayer MaterialScience LLC
Product Safety & Regulatory Affairs
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USA

TRANSPORTATION EMERGENCY

CALL CHEMTREC: (800) 424-9300
INTERNATIONAL: (703) 527-3887

NON-TRANSPORTATION

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

1. Product and Company Identification

Product Name: BAYSEAL OC
Material Number: 82614401
Chemical Family: Polyol System

2. Hazards Identification

Emergency Overview

Warning Color: Yellow **Form:** liquid viscous **Odor:** Amine, ammoniacal.
Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Causes respiratory tract irritation. Causes skin irritation. May be harmful if absorbed through skin. Causes eye irritation. When this product is sprayed, a full-face or hood-type supplied air respirator is required. May be harmful if swallowed. May cause liver damage. May cause kidney damage. May cause adverse reproductive effects.

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: Tris-(2-chloroisopropyl)-phosphate

May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

For Component: Surfactant

May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

For Component: Tertiary Amine

May cause pulmonary edema with symptoms of breathing difficulty and tightness of chest. Causes respiratory tract irritation with symptoms of coughing, sore throat and runny nose.

Chronic Inhalation

For Component: Tertiary Amine

May cause pulmonary edema with symptoms of breathing difficulty and tightness of chest.

Skin

Acute Skin

For Component: Tris-(2-chloroisopropyl)-phosphate

May cause slight irritation.

For Component: Surfactant

May cause irritation with symptoms of reddening and itching. Slightly toxic by skin absorption.

For Component: Tertiary Amine

Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.

For Component: Tertiary Amine

If sufficient amounts are absorbed, systemic toxicity may occur with symptoms similar to those described in acute inhalation. Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage. May be harmful if absorbed through skin.

Chronic Skin

For Component: Surfactant

Prolonged or repeated skin contact may cause dermatitis with symptoms of red, itchy, dry skin.

Eye

Acute Eye

For Component: Tris-(2-chloroisopropyl)-phosphate

Not expected to be irritating.

For Component: Surfactant

Causes irritation with symptoms of reddening, tearing, stinging, and swelling. May cause corneal injury.

For Component: Tertiary Amine

Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.

For Component: Tertiary Amine

Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.

Chronic Eye

For Component: Surfactant

Prolonged vapor contact may cause conjunctivitis.

For Component: Tertiary Amine

Prolonged vapor contact may cause conjunctivitis.

Ingestion

Acute Ingestion

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: Surfactant

Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea. Ingestion and/or vomiting may cause aspiration into the lungs resulting in chemical pneumonitis (inflammation of the lungs). Moderately toxic by ingestion.

For Component: Tertiary Amine

Symptoms of ingestion may include abdominal pain, nausea, vomiting, and diarrhea. May be harmful if swallowed.

Chronic Ingestion

For Component: Tris-(2-chloroisopropyl)-phosphate

May cause liver damage. May cause kidney damage.

Carcinogenicity:

No carcinogenic substances as defined by IARC, NTP and/or OSHA

3. Composition/Information on Ingredients

Hazardous components

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
25 - 35%	Tris-(2-chloroisopropyl)-phosphate	13674-84-5
10 - 20%	Surfactant	CAS# is a trade secret
5 - 10%	Tertiary Amine	CAS# is a trade secret
1 - 5%	Tertiary Amine	CAS# is a trade secret

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

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

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.

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: 21.11 °C (70 °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.

Further Info on Storage Conditions

Store materials between 70°F to 80°F (21°C to 27°C) in a dry and well ventilated area for a minimum of 48 hours prior to application of material. The transit temperature range is 32°F to 100°F (0°C to 38°C).

8. Exposure controls/personal protection

When this product is heated or spray applied, amine vapors can be released.

Country specific exposure limits have not been established or are not applicable

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:	viscous
Color:	Yellow
Odor:	Amine, ammoniacal
pH:	8.5 - 10.5
Freezing Point:	< 0 °C (32 °F)
Boiling point/boiling range:	> 149 °C (300.2 °F)
Flash point:	> 93.33 °C (200 °F)
Specific Gravity:	1.08
Solubility in Water:	Partially soluble
Viscosity, dynamic:	165 - 180 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 (NO_x), dense black smoke., Hydrogen chloride gas, Oxides of phosphorus, Other hazardous decomposition products may be formed.

11. Toxicological information

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 Surfactant

Acute oral toxicity

LD50: 1,000 - 1,700 mg/kg (Rat)

LD50: 2,380 mg/kg (Rat)

Acute dermal toxicity

LD50: 1.4 - 3 ml/kg (rabbit)

Skin irritation

Mild skin irritation

Eye irritation

rabbit, Severely irritating

Sensitisation

dermal: non-sensitizer (Human)

Repeated dose toxicity

2 years, oral: NOAEL: 40 mg/kg, (Dog,)

2 years, oral: NOAEL: 200 mg/kg, (Rat,)

Carcinogenicity

Rat, oral, 2 years, daily,

Did not show carcinogenic effects in animal experiments.

Toxicity to Reproduction/Fertility

Three generation study, oral, (Rat, Male/Female) NOAEL (parental): 200 ppm, NOAEL (F1): 200 ppm,

NOAEL (F2): 200 ppm

No effects on Reproductive parameters observed at doses tested.

Other method, oral, (Rat) NOAEL (parental): 2000 ppm,

Developmental Toxicity/Teratogenicity

Rat, oral, NOAEL (teratogenicity): 200 ppm, NOAEL (maternal): 200 ppm

Fetotoxicity seen only with maternal toxicity., No Teratogenic effects observed at doses tested.

Toxicity Data for Tertiary Amine

Acute oral toxicity

LD50: 2,000 - 5,000 mg/kg (rat)

Acute dermal toxicity

LD50: 1,000 - 2,000 mg/kg (rabbit)

Skin irritation

rabbit, Draize, Corrosive

Eye irritation

rabbit, Corrosive

Repeated dose toxicity

2 weeks, Inhalation: NOAEL: 11.5 mg/m3, LOAEL: 107 mg/m3, (rat, male, 6 hrs/day 5 days/week)

Toxicity Data for Tertiary Amine

Acute oral toxicity

LD50: 1,290 mg/kg (Rat)

Acute inhalation toxicity

LC50: > 2.63 mg/l, 1 h (Rat)

Acute dermal toxicity

LD50: 310 mg/kg (rabbit)

Skin irritation

rabbit, Corrosive

Eye irritation

OECD Test Guideline 405, Corrosive

Sensitisation

Skin sensitisation according to Magnusson/Kligmann (maximizing test):: negative (OECD Test Guideline 406)

Mutagenicity

Genetic Toxicity in Vitro:

Ames test: negative

12. Ecological information**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 Surfactant**Biochemical Oxygen Demand (BOD)**

11 - 23 %

20 Days, 45 - 48 %

Theoretical Biological Oxygen Demand (ThBOD)

2,300 mg/g

Acute and Prolonged Toxicity to Fish

LC50: 5 - 7.3 mg/l (Fathead minnow (*Pimephales promelas*), 96 h)

Acute Toxicity to Aquatic Invertebrates

LC50: 7.5 - 14.7 mg/l (Water flea (Daphnia magna), 48 h)

Toxicity to Microorganisms

IC50: > 1,000 mg/l, (Other bacteria, 17 h)

Ecological Data for Tertiary Amine

Acute and Prolonged Toxicity to Fish

LC50: 320 mg/l (Leuciscus idus (Golden orfe), 96 h)

Ecological Data for Tertiary Amine

Biodegradation

71.2 %, Exposure time: 28 d, i.e. readily biodegradable

Acute Toxicity to Aquatic Invertebrates

EC50: 24 mg/l (Daphnia magna (Water flea), 48 h)

Toxicity to Aquatic Plants

ErC50: 35 mg/l, (algae, 72 h)

Toxicity to Microorganisms

EC50: > 1,000 mg/l, (activated sludge, 72 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 (DOT)

Non-Regulated

Sea transport (IMDG)

Non-Regulated

Air transport (ICAO/IATA)

Non-Regulated

15. Regulatory information

United States Federal Regulations

OSHA Hazcom Standard Rating: Hazardous

US. Toxic Substances Control Act: Listed on the TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302):

Components

None

SARA Section 311/312 Hazard Categories:

Acute Health Hazard, Chronic Health Hazard

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):

Components

None

US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:

Components

None

US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes and Appendix VIII Hazardous Constituents (40 CFR 261)

Under RCRA, it is the responsibility of the person who generates a solid waste, as defined in 40 CFR 261.2, to determine if that waste is a hazardous waste.

State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
25 - 35%	Tris-(2-chloroisopropyl)-phosphate	13674-84-5
>=1%	Water	7732-18-5
>=1%	Polyether Polyol	CAS# is a trade secret
10 - 20%	Surfactant	CAS# is a trade secret
>=1%	Polyether Polyol	CAS# is a trade secret
5 - 10%	Tertiary Amine	CAS# is a trade secret
1 - 5%	Tertiary Amine	CAS# is a trade secret

Massachusetts Right to Know Extraordinarily Hazardous Substance List:

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
1 - 5 ppm	Ethylene Oxide	75-21-8
1 - 5 ppm	1,4-Dioxane	123-91-1

California Prop. 65:

Warning! This product contains chemical(s) known to the State of California to be Carcinogenic. - Developmental toxin. - Female reproductive toxin. - Male reproductive toxin.

<u>Weight percent</u>	<u>Components</u>	<u>CAS-No.</u>
1 - 5 ppm	Ethylene Oxide	75-21-8
1 - 5 ppm	1,4-Dioxane	123-91-1

16. Other information

NFPA 704M Rating

Health	2
Flammability	1
Reactivity	0
Other	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

HMIS Rating

Health	2*
Flammability	1
Physical Hazard	0

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

* = Chronic Health Hazard

The method of hazard communication for Bayer MaterialScience LLC is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by Bayer MaterialScience LLC as a customer service.

Contact person: Product Safety Department
Telephone: (412) 777-2835
MSDS Number: 112000042275
Version Date: 07/27/2014
Report version: 4.13

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|| Changes since the last version are highlighted in the margin. This version replaces all previous versions.