SAFETY DATA SHEET

1. Identification

Covestro LLC
formerly Bayer MaterialScience LLC
1 Covestro Circle
Pittsburgh, PA 15205
USA

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

NON-TRANSPORTATION
Emergency Phone: Call Chemtrec
Information Phone: (844) 646-0545

Product Name: BAYSEAL OC
Material Number: 82614401
Chemical Family: Polyol System
Use: Polyol components for the production of polyurethanes

2. Hazards Identification

GHS Classification
Skin corrosion: Category 1A
Serious eye damage: Category 1

GHS Label Elements
Hazard pictograms:

Signal word: Danger

Hazard statements: Causes severe skin burns and eye damage.

Precautionary statements:

Prevention:
Wash skin and face thoroughly after handling.
Wear permeation resistant protective gloves and clothing. Wear eye and face protection.

Response:
IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Immediately call a doctor or emergency medical facility (i.e., 911).
Wash contaminated clothing before reuse.

Storage:
Store locked up.

Disposal:
Dispose of contents and container in accordance with existing federal, state, and local environmental control laws.

The following percentage of the mixture consists of ingredient(s) with unknown acute toxicity:
1 %

3. Composition/Information on Ingredients

Hazardous Components

Weight Percent	Components	CAS-No.	Classification
30 - 50%	Tris-(2-chloroisopropyl)-phosphate	13674-84-5	Acute toxicity Category 4 Oral. Eye irritation Category 2B.
10 - 20%	Surfactant	CAS# is a trade secret	Serious eye damage Category 1.
5 - 10%	Tertiary Amine	CAS# is a trade secret	Acute toxicity Category 4 Dermal. Skin corrosion Category 1A. Serious eye damage Category 1.
1 - 5%	Tertiary Amine	CAS# is a trade secret	Acute toxicity Category 4 Oral. Acute toxicity Category 3 Dermal. Skin corrosion Category 1A. Serious eye damage Category 1.
0.1 - 1%	Alkanolamine	CAS# is a trade secret	Acute toxicity Category 4 Oral. Skin irritation Category 2. Serious eye damage Category 1.

The specific chemical identity and/or exact percentage of component(s) have been withheld as a trade secret.

4. First Aid Measures

Most Important Symptom(s)/Effect(s)

Acute: Causes severe skin burns with symptoms of necrosis and possible scarring., Causes serious eye damage with symptoms of eye burns, corneal injury, and possible blindness., Corrosive to the digestive tract with symptoms of burning and ulceration.

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.

Unsuitable Extinguishing Media No Data Available

Fire Fighting Procedure
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.

Hazardous Decomposition Products
By Fire and Thermal Decomposition: Carbon dioxide (CO2), carbon monoxide (CO), oxides of nitrogen (NOx), dense black smoke., Hydrogen chloride gas, Oxides of phosphorus, Other hazardous decomposition products may be formed.

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 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

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.

Storage Period:
6 Months

Storage Temperature

Minimum:	21.11 °C (70 °F)
Maximum:	26.67 °C (80 °F)

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).

Substances to Avoid
Oxidizing agents, Isocyanates

8. Exposure Controls/Personal Protection

Exposure Limits

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

Any component which is listed in section 3 and is not listed in this section does not have a known ACGIH TLV, OSHA PEL or supplier recommended occupational exposure limit.

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 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

State of Matter:	liquid
Appearance:	viscous
Color:	Yellow
Odor:	Amine, ammoniacal
Odor Threshold:	No Data Available
pH:	8.5 - 10.5
Freezing Point:	< 0 °C (32 °F)
Boiling Point:	> 149 °C (300.2 °F)
Flash Point:	> 93.33 °C (200 °F)
Evaporation Rate:	No Data Available
Lower explosion limit:	No Data Available
Upper Explosion Limit:	No Data Available
Vapor Pressure:	No Data Available
Vapor Density:	No Data Available
Density:	No Data Available
Relative Vapor Density:	No Data Available
Specific Gravity:	1.08
Solubility in Water:	Partially soluble
Partition Coefficient: n-octanol/water:	No Data Available
Auto-ignition Temperature:	No Data Available
Decomposition Temperature:	No Data Available
Dynamic Viscosity:	165 - 180 cps @ 25 °C (77 °F)
Kinematic Viscosity:	No Data Available

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 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., Hydrogen chloride gas, Oxides of phosphorus, Other hazardous decomposition products may be formed.

11. Toxicological Information

Likely Routes of Exposure: Inhalation

Eye Contact
Skin Contact

Health Effects and Symptoms

Acute: Causes severe skin burns with symptoms of necrosis and possible scarring., Causes serious eye damage with symptoms of eye burns, corneal injury, and possible blindness., Corrosive to the digestive tract with symptoms of burning and ulceration.

Toxicity Data for: BAYSEAL OC

Acute Oral Toxicity
Acute toxicity estimate: 3110 mg/kg (Calculation method)

Acute Dermal Toxicity
Acute toxicity estimate: 2845 mg/kg (Calculation method)

Toxicity Data for Tris-(2-chloroisopropyl)-phosphate
Acute Oral Toxicity
LD50: >= 1150 mg/kg (rat)

Acute Inhalation Toxicity
LC50: > 7.14 mg/l, 4 h, dust/mist(rat, 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

Sensitization
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: > 8000 mg/kg (rat)

Skin Irritation
Mild skin irritation

Eye Irritation
rabbit, Severely irritating

Sensitization
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: 2337 mg/kg (rat)

Acute Dermal Toxicity
LD50: 1349 mg/kg (rabbit)
assuming density = 0.957 g/cm3

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: 1290 mg/kg (rat)

Acute Dermal Toxicity
LD50: 260.71 mg/kg (rabbit)

Skin Irritation
rabbit, Corrosive

Eye Irritation
OECD Test Guideline 405, Corrosive

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

Mutagenicity
Genetic Toxicity in Vitro:
Ames test: negative

Toxicity Data for Alkanolamine
Acute Oral Toxicity
LD50: 1360 mg/kg (rat)

Acute Dermal Toxicity
LD50: 5700 mg/kg (rabbit)

Skin Irritation
rabbit, Draize, Severely irritating

Eye Irritation
rabbit, Draize, Severely irritating

Sensitization
Buehler Test: non-sensitizer (Guinea pig)

Carcinogenicity:

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

12. Ecological Information

Ecological Data for: BAYSEAL OC

No data available for this product.

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)

Ecological Data for Alkanolamine
Biodegradation
Not readily biodegradable.

Acute and Prolonged Toxicity to Fish
LC50: > 320 mg/l (fish (pisces), 96 h)

Acute Toxicity to Aquatic Invertebrates
EC50: 72 mg/l (Daphnia magna (Water flea), 48 h)

Toxicity to Aquatic Plants
ErC50: 69.3 mg/l, (Desmodesmus subspicatus (Green algae), 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. Transportation Information

Land transport (DOT)
Non-Regulated

Sea transport (IMDG)
Non-Regulated

Air transport (ICAO/IATA)
Non-Regulated

15. Regulatory Information

United States Federal Regulations
US. Toxic Substances Control Act: Listed on the TSCA Inventory.

No substances are subject to TSCA 12(b) export notification requirements.

US. EPA CERCLA Hazardous Substances (40 CFR 302) Components:
None

SARA Section 311/312 Hazard Categories:
Acute 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 SDS 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:

Weight percent	Components	CAS-No.
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:

Weight percent	Components	CAS-No.
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.

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

Based on information provided by our suppliers, this product is considered “DRC Conflict Free” as defined by the SEC Conflict Minerals Final Rule (Release No. 34-67716; File No. S7-40-10; Date: 2012-08-22).

16. Other Information

The method of hazard communication for Covestro LLC is comprised of Product Labels and Safety Data Sheets.

Contact:	Product Safety Department
Telephone:	(412) 413-2835
SDS Number:	112000042275
Version Date:	08/28/2015
SDS Version:	2.0

This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of Covestro LLC. The information in this SDS relates only to the specific material designated herein. Covestro LLC assumes no legal responsibility for use of or reliance upon the information in this SDS.

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