# Safety Data Sheet

# OR93BL+ (Flak Jacket) Part B

## Section 1 – Identification

**Product name:** OR93BL+ (Flak Jacket) Part B

**Recommended use of the chemical and restrictions on use**
**Identified uses:** For industrial use. Component(s) for the manufacture of urethane polymers. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

**COMPANY IDENTIFICATION**
Oak Ridge Foam & Coating Systems, Inc
575 Commercial Ave
Green Lake, WI 54941

**Customer Information Number:** 800-625-9577

**EMERGENCY TELEPHONE NUMBER**
**24-Hour Emergency Contact:** CHEMTREC 800-424-9300

## Section 2 – Hazards Identification

**Hazard classification**
This material is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29CFR 1910.1200.
Acute toxicity - Category 4 - Oral
Eye irritation - Category 2B
Carcinogenicity – Category 2
Specific target organ toxicity - repeated exposure - Category 2 – Oral

**Label elements**

**Hazard pictograms**



Signal word: Warning

**Hazards**
Harmful if swallowed.
Causes eye irritation.
Suspected of causing cancer.
May cause damage to organs through prolonged or repeated exposure if swallowed.

**Precautionary statements**

**Prevention**
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.

Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use personal protective equipment as required.

**Response**

IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Get medical advice/ attention.
If eye irritation persists: Get medical advice/ attention.

**Storage**

Store locked up.

**Disposal**

Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

no data available

## Section 3 – Hazards Identification

This product is a mixture

### Hazardous Components

| Component | CASRN | Concentration |
|---|---|---|
| Polyether Polyols | Trade Secret | >=60.0 - <=10.0% |
| Polyethylene Glycol | 25322-68-3 | >= 1.0 - <= 10.0 % |
| Diethyltoluenediamine (DETDA) | 68479-98-1 | >= 7.0 - <= 13.0 % |
| Diethylene Glycol | 111-46-6 | >= 5.0 - <= 10.0 % |
| Castor Oil | 8001-79-4 | >= 1.0 - <= 5.0 % |
| Carbon Black | 1333-86-4 | >= 0.1 - <=1.0% |

## Section 4 – First Aid Measures

**Description of first aid measures**

**General advice:** First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.
**Inhalation:** Move person to fresh air; if effects occur, consult a physician.
**Skin contact:** Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Destroy contaminated leather items such as shoes, belts, and watchbands.
**Eye contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
**Ingestion:** Do not induce vomiting. Seek medical attention immediately. If person is fully conscious give 1 cup or 8 ounces (240 ml) of water. If medical advice is delayed and if an adult has swallowed several ounces of chemical, then give 3-4 ounces (1/3-1/2 Cup) (90-120 ml) of hard liquor such as 80 proof whiskey. For children, give proportionally less liquor at a dose of 0.3 ounce (1 1/2 tsp.) (8 ml) liquor for each 10 pounds of body weight, or 2 ml per kg body weight [e.g., 1.2 ounce (2 1/3 tbsp.) for a 40-pound child or 36 ml for an 18 kg child].

**Most important symptoms and effects, both acute and delayed:** Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

**Indication of any immediate medical attention and special treatment needed**

**Notes to physician:** Due to structural analogy and clinical data, this material may have a mechanism of intoxication similar to ethylene glycol. On that basis, treatment similar to ethylene glycol intoxication may be of benefit. In cases where several ounces (60 - 100 ml) have been ingested, consider the use of ethanol and hemodialysis in the treatment. Consult standard literature for details of treatment. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol (Brent, J. et al., New England Journal of Medicine, Feb. 8, 2001, 344:6, p. 424-9): loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

## Section 5 – Fire Fighting Measures

**Suitable extinguishing media:** Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

**Unsuitable extinguishing media:** Do not use direct water stream. May spread fire.

**Special hazards arising from the substance or mixture**

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

**Unusual Fire and Explosion Hazards:** Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

**Advice for firefighters**

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

## Section 6 – Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures:** Isolate area. Refer to section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.
**Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.
**Methods and materials for containment and cleaning up:** Contain spilled material if possible. Absorb with materials such as: Dirt. Sand. Sawdust. Collect in suitable and properly labeled containers. Wash the spill site with water. See Section 13, Disposal Considerations, for additional information.

## Section 7 – Storage and Handling

**Precautions for safe handling:** Avoid contact with eyes. Do not swallow. Wash thoroughly after handling. Keep container closed. This material is hygroscopic in nature. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.
Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.
**Conditions for safe storage:** Protect from atmospheric moisture. Store in a dry place. Avoid prolonged exposure to heat and air. Store in the following material(s): Carbon steel. Stainless steel. Polypropylene. Polyethylene-lined container. Teflon. Glass-lined container. Aluminum. Plasite 3066 lined container. Plasite 3070 lined container. 316 stainless steel. See Section 10 for more specific information.
**Storage stability**

**Storage temperature: Storage Period:**
15 - 25 °C (59 - 77 °F) 12 Month

## Section 8 – Exposure Controls/Personal Protection

**Control parameters**
Exposure limits are listed below, if they exist.

| Component | Regulation | Type of listing | Value/Notation |
|---|---|---|---|
| Polyethylene glycol | US WEEL | TWA aerosol | 10 mg/m3 |
| Diethyltoluenediamine (DETDA) | Dow IHG | TWA | 0.02 ppm |
| | Dow IHG | TWA | Absorbed via skin |
| Diethylene glycol | US WEEL | TWA | 10 mg/m3 |
| Castor oil | OSHA Z-1 | TWA mist, respirable | 5 mg/m3 |

| | | | |
|---|---|---|---|
| | | fraction | |
| | OSHA Z-1 | TWA mist, total dust | 15 mg/m3 |
| Carbon black | ACGIH | TWA Inhalable fraction | 3 mg/m3 |
| | OSHA Z-1 | TWA | 3.5 mg/m3 |

**Exposure controls**

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

**Individual protection measures**

**Eye/face protection:** Use safety glasses (with side shields).

**Skin protection**

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Examples of acceptable glove barrier materials include: Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full-body suit will depend on the task.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

## Section 9 – Physical Properties

| | |
|---|---|
| **Appearance** | |
| **Physical state** | Liquid. |
| **Color** | Black |
| **Odor** | pungent |
| **Odor Threshold** | No test data available |
| **pH** | *Not applicable* |
| **Melting point/range** | No test data available |
| **Freezing point** | No test data available |
| **Boiling point (760 mmHg)** | > 100°C (>212°F) Literature |
| **Flash point** | **closed cup** > 150 °C ( > 302 °F) *Literature* |
| **Evaporation Rate (Butyl Acetate= 1)** | No test data available |
| **Flammability (solid, gas)** | Not applicable to liquids |
| **Lower explosion limits** | No test data available |

| | |
|---|---|
| **Upper explosion limits** | No test data available |
| **Vapor Pressure** | < 1 mmHg at 25 °C (77 °F) Estimated |
| **Relative Vapor Density (air = 1)** | No test data available |
| **Relative Density (water = 1)** | 1.03 at 25 °C (77 °F) / 25 °C *ASTM D891* |
| **Water solubility** | Negligible |
| **Partition coefficient: noctanol/water** | No data available |
| **Auto-ignition temperature** | No test data available |
| **Decomposition temperature** | No test data available |
| **Dynamic Viscosity** | 650 mPa.s at 25 °C (77 °F) *ASTM D4287* |
| **Kinematic Viscosity** | No test data available |
| **Explosive properties** | Not explosive |
| **Oxidizing properties** | No |
| **Molecular weight** | No test data available |

NOTE: The physical data presented above are typical values and should not be construed as a specification.

## Section 10 – Stability and Reactivity

**Reactivity:** no data available
**Chemical stability:** Stable under recommended storage conditions. See Storage, Section 7.
**Possibility of hazardous reactions:** Will not occur by itself.
**Conditions to avoid:** Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.
**Incompatible materials:** Avoid contact with oxidizing materials. Avoid contact with: Strong acids. Strong bases. Avoid contact with metals such as: Brass. Zinc. Copper. Avoid unintended contact with isocyanates. The reaction of polyols and isocyanates generates heat.
**Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon dioxide. Alcohols. Ethers. Hydrocarbons. Ketones. Polymer fragments.

## Section 11 – Toxicological Information

*Toxicological information appears in this section when such data is available.*

**Acute toxicity**

**Acute oral toxicity**

Oral toxicity is expected to be moderate in humans due to diethylene glycol even though tests with animals show a lower degree of toxicity. Ingestion of quantities (approximately 65 mL (2 oz.) for diethylene glycol or 100 mL (3 oz.) for ethylene glycol) has caused death in humans. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. The data presented are for the following material: Diethylene glycol. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure. May cause nausea and vomiting. May cause abdominal discomfort or diarrhea.
As product: Single dose oral LD50 has not been determined.

**Acute dermal toxicity**

Prolonged skin contact is unlikely to result in absorption of harmful amounts. Repeated skin exposure to large quantities may result in absorption of harmful amounts.
As product: The dermal LD50 has not been determined.

**Acute inhalation toxicity**

At room temperature, exposure to vapor is minimal due to low volatility. With good ventilation, single exposure is not expected to cause adverse effects. If material is heated or areas are poorly ventilated, vapor/mist may accumulate and cause respiratory irritation and symptoms such as headache and nausea. For narcotic effects: No relevant data found.

As product: The LC50 has not been determined.

**Skin corrosion/irritation**

Prolonged contact may cause slight skin irritation with local redness.

**Serious eye damage/eye irritation**

May cause slight eye irritation.

**Sensitization**

For skin sensitization:

No relevant data found.

For respiratory sensitization:

No relevant data found.

**Specific Target Organ Systemic Toxicity (Single Exposure)**

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

**Specific Target Organ Systemic Toxicity (Repeated Exposure)**

Contains component(s) which have been reported to cause effects on the following organs in humans:
Kidney.
Gastrointestinal tract.

Contains component(s) which have been reported to cause effects on the following organs in animals:
Liver.
Pancreas.
Eye.
Thyroid.

**Carcinogenicity**

Lung fibrosis and tumors have been observed in rats exposed to high concentrations of very fine carbon black particles for their lifetime. Effects are believed to be due to overloading of the normal respiratory clearance mechanisms caused by the extreme study conditions. Rats may be particularly susceptible to particle clearance overload, resulting in lung injury and tumors. No increases in tumors were observed in male or female mice exposed under the same conditions. Diethylene glycol has been tested for carcinogenicity in animal studies and is not believed to pose a carcinogenic risk to man.

**Teratogenicity**

Diethylene glycol has caused toxicity to the fetus and some birth defects at maternally toxic, high doses in animals. Other animal studies have not reproduced birth defects even at much higher doses that caused severe maternal toxicity.

**Reproductive toxicity**

Diethylene glycol did not interfere with reproduction in animal studies except at very high doses.

**Mutagenicity**

For the component(s) tested: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

**Aspiration Hazard**

Based on physical properties, not likely to be an aspiration hazard.

**COMPONENTS INFLUENCING TOXICOLOGY:**

**<u>Polyethylene glycol</u>**

**Acute oral toxicity**

LD50, Rat, > 10,000 mg/kg

**Acute dermal toxicity**

LD50, Rabbit, > 20,000 mg/kg

**Acute inhalation toxicity**

Typical for this family of materials. LC50, Rat, 6 Hour, Aerosol, > 2.5 mg/l No deaths occurred at this concentration.

**Diethyltoluenediamine (DETDA)**

**Acute oral toxicity**

LD50, Rat, 500 - 1,000 mg/kg

**Acute dermal toxicity**

LD50, Rabbit, > 1,000 mg/kg

**Acute inhalation toxicity**

The LC50 value is greater than the Maximum Attainable Concentration.

**Diethylene glycol**

**Acute oral toxicity**

Oral toxicity is expected to be moderate in humans due to ethylene glycol even though tests with animals show a lower degree of toxicity. Ingestion of quantities (approximately 65 mL (2 oz.) for diethylene glycol or 100 mL (3 oz.) for ethylene glycol) has caused death in humans. May cause nausea and vomiting. May cause abdominal discomfort or diarrhea. Excessive exposure may cause central nervous system effects, cardiopulmonary effects (metabolic acidosis), and kidney failure. LD50, Rat, male, 19,600 mg/kg
Lethal Dose, Human, adult, 2 Ounces Estimated.

**Acute dermal toxicity**

LD50, Rabbit, 13,330 mg/kg

**Acute inhalation toxicity**

LC50, Rat, 4 Hour, dust/mist, > 4.6 mg/l The LC50 value is greater than the Maximum Attainable Concentration. No deaths occurred at this concentration.

**Castor oil**

**Acute oral toxicity**

May cause abdominal discomfort or diarrhea. May cause nausea and vomiting. The stimulant effects of this material are reportedly strong enough to induce uterine contractions in pregnant women. LD50, Guinea pig, > 50,000 mg/kg

**Acute dermal toxicity**

LD50, Rat, > 2,000 mg/kg

**Acute inhalation toxicity**

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous.
The LC50 has not been determined.

**Carbon black**

**Acute oral toxicity**

LD50, Rat, > 8,000 mg/kg

**Acute dermal toxicity**

LD50, Rabbit, > 3,000 mg/kg No deaths occurred at this concentration.

**Acute inhalation toxicity**

LC50, Rat, 1 Hour, dust/mist, 27 mg/l No deaths occurred at this concentration.

**Polyether polyol 1**

**Acute oral toxicity**

Typical for this family of materials. LD50, Rat, > 2,000 mg/kg Estimated. No deaths occurred at this concentration.

**Acute dermal toxicity**

Typical for this family of materials. LD50, Rabbit, > 2,000 mg/kg Estimated.

**Acute inhalation toxicity**

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Vapor from heated material or mist may cause respiratory irritation.
For narcotic effects: No relevant data found.
The LC50 has not been determined.

**Polyether polyol 2**

**Acute oral toxicity**

Typical for this family of materials. LD50, Rat, >1,000 mg/kg Estimated.

**Acute dermal toxicity**

Typical for this family of materials. LD50, Rat, > 2,000 mg/kg No deaths occurred at this concentration.

**Acute inhalation toxicity**

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Vapor from heated material or mist may cause respiratory irritation. The LC50 has not been determined.

**Polyether polyol 3**

**Acute oral toxicity**

Typical for this family of materials. LD50, Rat, > 4,000 mg/kg Estimated. No deaths occurred at this concentration.

**Acute dermal toxicity**

Typical for this family of materials. LD50, Rabbit, > 10,000 mg/kg

**Acute inhalation toxicity**

At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Vapor from heated material or mist may cause respiratory irritation. The LC50 has not been determined.

**Carcinogenicity**

| Component | List | Classification |
|---|---|---|
| **Carbon black** | IARC | Group 2B: Possibly carcinogenic to humans |
| | ACGIH | A3: Confirmed animal carcinogen with unknown relevance to humans. |

## Section 12 – Ecological Information

*Ecotoxicological information appears in this section when such data is available.*

**Toxicity**

**Polyethylene glycol**

**Acute toxicity to fish**

Material is practically non-toxic to aquatic invertebrates on an acute basis (LC50/EC50 > 100 mg/L).

LC50, Pimephales promelas (fathead minnow), static test, 96 Hour, > 73,000 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

LC50, Daphnia magna (Water flea), static test, 48 Hour, > 10,000 mg/l, OECD Test Guideline 202 or Equivalent

**Diethyltoluenediamine (DETDA)**

**Acute toxicity to fish**

Material is highly toxic to aquatic organisms on an acute basis (LC50/EC50 between 0.1 and 1 mg/L in the most sensitive species tested).

LC50, Leuciscus idus (Golden orfe), static test, 48 Hour, 194 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), static test, 48 Hour, 0.5 mg/l, OECD Test Guideline 202 or Equivalent

**Acute toxicity to algae/aquatic plants**

ErC50, Desmodesmus subspicatus (green algae), static test, 72 Hour, Growth rate, 100 mg/l, OECD Test Guideline 201

**Toxicity to bacteria**

EC10, Bacteria, 16 Hour, 170 mg/l

**Diethylene glycol**

**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Pimephales promelas (fathead minnow), flow-through test, 96 Hour, 75,200 mg/l, OECD Test Guideline 203 or Equivalent

**Toxicity to bacteria**

EC50, activated sludge, 3 Hour, > 1,000 mg/l, OECD 209 Test

**Castor oil**

**Acute toxicity to fish**

Not expected to be acutely toxic to aquatic organisms.

**Carbon black**

**Acute toxicity to fish**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

LC50, Leuciscus idus (Golden orfe), static test, 96 Hour, > 1,000 mg/l, OECD Test Guideline 203 or Equivalent

**Acute toxicity to aquatic invertebrates**

EC50, Daphnia magna (Water flea), 24 Hour, > 5,600 mg/l, OECD Test Guideline 202 or Equivalent

**Polyether polyol 1**

**Acute toxicity to fish**

For this family of materials:

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Polyether polyol 2**

**Acute toxicity to fish**

For this family of materials:

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Chronic toxicity to aquatic invertebrates**

NOEC, Daphnia magna (Water flea), semi-static test, 21 d, mortality, >= 10 mg/l

LOEC, Daphnia magna (Water flea), semi-static test, 21 d, mortality, > 10 mg/l

**Polyether polyol 3**

**Acute toxicity to fish**

Based on information for a similar material:

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).

**Persistence and degradability**

**Polyethylene glycol**

**Biodegradability:** Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).

**Theoretical Oxygen Demand:** 1.71 mg/mg

**Chemical Oxygen Demand:** 1.76 mg/mg

**Biological oxygen demand (BOD)**

| **Incubation Time** | **BOD** |
|---|---|
| 5 d | 3 % |
| 10 d | 28 % |
| 20 d | 64 % |

**Diethyltoluenediamine (DETDA)**

**Biodegradability:** Material is not readily biodegradable according to OECD/EEC guidelines.
10-day Window: Fail
**Biodegradation:** < 1 %
**Exposure time:** 28 d
**Method:** OECD Test Guideline 301D or Equivalent
**Theoretical Oxygen Demand:** 3.23 mg/mg

**Diethylene glycol**

**Biodegradability:** Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).
10-day Window: Pass
**Biodegradation:** 90 - 100 %
**Exposure time:** 20 d
**Method:** OECD Test Guideline 301A or Equivalent
10-day Window: Not applicable
**Biodegradation:** 82 - 98 %
**Exposure time:** 28 d
**Method:** OECD Test Guideline 302C or Equivalent
**Theoretical Oxygen Demand:** 1.51 mg/mg Estimated.

**Castor oil**

**Biodegradability:** For the major component(s): Biodegradation may occur under aerobic conditions (in the presence of oxygen).

**Carbon black**

**Biodegradability:** Biodegradation is not applicable.

**Polyether polyol 1**

**Biodegradability:** For this family of materials: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

**Polyether polyol 2**

**Biodegradability:** For this family of materials: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

**Polyether polyol 3**

**Biodegradability:** Based on information for a similar material: Biodegradation under aerobic laboratory conditions are below detectable limits (BOD20 or BOD28/ThOD < 2.5%).

**Bioaccumulative potential**

**Polyethylene glycol**

**Bioaccumulation:** No bioconcentration is expected because of the relatively high water solubility.

**Diethyltoluenediamine (DETDA)**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
**Partition coefficient: n-octanol/water (log Pow):** 1.17 Measured
**Bioconcentration factor (BCF):** 3 Estimated.

**Diethylene glycol**

**Bioaccumulation:** Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
**Partition coefficient: n-octanol/water (log Pow):** -1.98 at 20 °C Estimated.
**Bioconcentration factor (BCF):** 100 Fish. Measured

**Castor oil**

**Bioaccumulation:** No data available for this product. For the major component(s): Bioconcentration potential is low (BCF < 100 or Log Pow < 3).

**Carbon black**

**Bioaccumulation:** No relevant data found.

**Polyether polyol 1**

**Bioaccumulation:** For this family of materials: No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

**Polyether polyol 2**

**Bioaccumulation:** For this family of materials: No bioconcentration is expected because of the relatively high water solubility.

**Polyether polyol 3**

**Bioaccumulation:** No bioconcentration is expected because of the relatively high molecular weight (MW greater than 1000).

**Mobility in soil**

**Polyethylene glycol**

No data available.

**Diethyltoluenediamine (DETDA)**

Potential for mobility in soil is low (Koc between 500 and 2000).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

**Partition coefficient(Koc):** 551.2 Estimated.

**Diethylene glycol**

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Potential for mobility in soil is very high (Koc between 0 and 50).

**Partition coefficient(Koc):** < 1 Estimated.

**Castor oil**

For the major component(s):

Potential for mobility in soil is low (Koc between 500 and 2000).

Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

**Carbon black**

No relevant data found.

**Polyether polyol 1**

No data available.

**Polyether polyol 2**

No relevant data found.

**Polyether polyol 3**

No data available.

## Section 13 – Disposal Consideration

**Disposal methods:** DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. For additional information, refer to: Handling & Storage Information, MSDS Section 7 Stability & Reactivity Information, MSDS Section10 Regulatory Information, MSDS Section 15

## Section 14 – Transportation Information

**DOT**

Not regulated for transport

**Classification for SEA transport (IMO-IMDG):**

| | |
|---|---|
| **Proper shipping name** | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Diethylmethylbenzenediamine) |
| **UN number** | UN 3082 |
| **Class** | 9 |
| **Packing group** | III |
| **Marine pollutant** | Diethylmethylbenzenediamine |
| **Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code** | Consult IMO regulations before transporting ocean bulk |

**Classification for AIR transport (IATA/ICAO):**

| | |
|---|---|
| **Proper shipping name** | Environmentally hazardous substance, liquid, n.o.s.(Diethylmethylbenzenediamine) |
| **UN number** | UN 3082 |
| **Class** | 9 |
| **Packing group** | III |

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

## Section 15 – Regulatory Information

**OSHA Hazard Communication Standard**
This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312**
Acute Health Hazard
Chronic Health Hazard
**Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313**
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
**Pennsylvania Worker and Community Right-To-Know Act:**
The following chemicals are listed because of the additional requirements of Pennsylvania law:

| **Components** | **CASRN** |
|---|---|
| Diethylene glycol | 111-46-6 |
| Castor oil | 8001-79-4 |

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**
WARNING: This product contains a chemical(s) known to the State of California to cause cancer.

| **Components** | **CASRN** |
|---|---|
| Carbon black | 1333-86-4 |

| | |
|---|---|
| 1,4-Dioxane | 123-91-1 |
| Formaldehyde | 50-00-0 |
| Acetaldehyde | 75-07-0 |
| Ethylene oxide | 75-21-8 |
| Propylene oxide | 75-56-9 |

**California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)**

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

| **Components** | **CASRN** |
|---|---|
| Ethylene oxide | 75-21-8 |
| Ethylene glycol monomethyl ether | 109-86-4 |

**United States TSCA Inventory (TSCA)**

All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

## Section 16 – Other Information

**Product Literature**

Additional information on this product may be obtained by calling your sales or customer service contact.

**Revision**

Identification Number: 101207274 / A001 / Issue Date: 04/21/2015 / Version: 2.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

| | |
|---|---|
| Absorbed via skin | Absorbed via skin |
| ACGIH | USA. ACGIH Threshold Limit Values (TLV) |
| Dow IHG | Dow Industrial Hygiene Guideline |
| OSHA Z-1 | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants |
| TWA | 8-hour, time-weighted average |
| US WEEL | USA. Workplace Environmental Exposure Levels (WEEL) |

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

Oak Ridge Foam & Coating Systems, Inc. urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.