

Bachman Drilling & Production Specialties, Inc.

2220 S. Prospect
Oklahoma City, OK 73143

Emergency Response: 800-535-5053
Information: 405-677-8296

MATERIAL SAFETY DATA SHEET

1. Chemical Identification

Product: DC-305
General Description: Corrosion Inhibitor
Chemical Family: Phosphonate
Revision Date: March 16, 2005
Primary Hazard: RQ Component

Hazard Rating		Rating Scale
Health	1	4 = Extreme
Fire	0	3 = High
Reactivity	0	2 = Moderate
Personal Protection	B	1 = Slight
		0 = Insignificant

2. Hazardous Ingredients

Our hazard evaluation has identified the following chemical ingredient(s) as hazardous. One or more component is being claimed as a trade secret under OSHA's Hazard Communication Rule, 29 CFR 1910.1200. Consult section 14 for the nature of the hazard(s).

Ingredient(s)	CAS Number	Approximate Wt. %
Ethylene Glycol	107-21-1	20

3. Handling Precautions

CAUTION! Contains ethylene glycol. May be harmful if inhaled. Use with adequate ventilation. Do not take internally. Avoid prolonged or repeated breathing of vapor. Avoid contact with skin, eyes or clothing. Keep container closed when not in use. Empty containers may contain residual product. Do not reuse container unless properly reconditioned.

4. First Aid Information

EYES: Remove victim from exposure and into fresh air. Immediately flush with water for at least 15 minutes while holding eyelids open. Call a physician at once.

SKIN: Remove contaminated clothing. Immediately wash exposed area with soap and water for at least 15 minutes. For a large splash flood body under a shower. If symptoms persist, seek medical attention. Launder clothes before reuse.

INGESTION: If victim is conscious and alert, induce vomiting by giving syrup of ipecac or by gently stimulating victim's uvula. Give water. Call a physician at once. If victim is drowsy or unconscious, do not induce vomiting or give anything by mouth; place victim on the left side with the head down. If possible, do not leave victim unattended.

INHALATION: Remove to fresh air. If breathing is difficult, administer oxygen. Treat symptoms. Keep victim warm and quiet. Seek immediate medical attention.

CAUTION: If unconscious, having trouble breathing or in convulsions, do not induce vomiting or give water.

Note To Physicians

This product contains ethylene glycol. Ethanol decreases the metabolism of ethylene glycol to toxic metabolites. Ethanol should be administered as soon as possible in cases of severe poisoning since the elimination half-life of ethylene glycol is 3 hours. If medical care will be delayed several hours, use three to four 1-ounce oral "shots" of 86-proof or higher whiskey before or during transport to the hospital. Hemodialysis effectively removes ethylene glycol and its metabolites from the body. Effects of acute ethylene glycol poisoning appear in three fairly distinct stages. The initial stage occurs shortly after exposure, lasts 6-12 hours, and is characterized by central nervous system effects (transient exhilaration, nausea, vomiting, and in severe cases coma, convulsions and possible death). The second stage lasts from 12-36 hours after exposure and is initiated by the onset of coma. This phase is characterized by tachypnea, tachycardia, mild hypotension, cyanosis and in severe cases, pulmonary edema, bronchopneumonia, cardiac enlargement and congestive failure. The final stage occurs 24-72 hours post-exposure and is characterized by renal failure ranging from a mild increase in blood urea nitrogen and creatinine followed by recovery to complete anuria with acute tubular necrosis that can lead to death. Oxaluria is found in most cases. The most significant laboratory finding in ethylene glycol intoxication is severe metabolic acidosis.

5. Health Effects Information

Primary Route(s) Of Exposure: Eye, Ingestion, Inhalation

Eye Contact: Irritating to the eyes. Symptoms may include stinging, tearing, redness and swelling.

Skin Contact: Exposure may cause mild skin irritation. Symptoms may include redness and burning. Skin adsorption possible, but harmful effects are not expected from this route of exposure under normal conditions of handling and use.

Ingestion: Single dose oral toxicity is low. Swallowing small amounts during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. See note to physician, above.

Inhalation: Short-term inhalation toxicity is low. Breathing small amounts during normal handling is not likely to cause harmful effects. Breathing large amounts in excess of the recommended exposure limits can be harmful, causing nausea, irritation, dizziness, light-headedness, vomiting, fatigue, headache or unconsciousness depending on the length of exposure and the first aid action given.

Symptoms

Of Exposure: In addition to symptoms listed above, excessive exposure can cause cyanosis (characterized by bluish discoloration of the skin and nails), pulmonary edema (swelling and collection of fluid in the lungs), kidney damage, liver damage, convulsions, coma and death if not properly treated.

Aggravation Of Existing Conditions: A review of available data indicates that ethylene glycol may aggravate pre-existing disorders of the kidney and liver.

6. Toxicological Information

Toxicity Studies: No toxicity studies have been conducted on this product. However, this product contains ethylene glycol, which has been proven to cause liver, kidney and brain damage in humans as a result of overexposure. Ethylene glycol may also cause birth defects in humans based on positive test results with laboratory animals. This material is not listed as a carcinogen by IARC, NTP or OSHA.

7. Physical & Chemical Properties

Appearance:	Clear, Amber Liquid	Pour Point:	-20°F
Odor:	Mild	Initial	
Specific Gravity:	1.073	Boiling Point:	212 °F
Density:	8.95	Flash Point:	240 °F TCC
pH (neat):	6.5 – 7.5	Vapor Pressure:	0.6 mm HG @ 100 °F
Viscosity:	4 cst @ 100°F	Vapor Density:	> 1.0 (Air=1.0)
Solubility:	Water Soluble	Evaporation Rate:	1.0 (Butyl Acetate = 1.0)

Note: These physical properties are typical values for this product and not specifications.

8. Fire & Explosion Information

Flash Point:	240°F
Lower Explosive Limit:	3.2%
Upper Explosive Limit:	15.3%

Extinguishing Media: Based on NFPA guide, use water fog, dry chemical, foam, carbon dioxide or other extinguishing agent suitable for Class B fires. Use water to cool containers exposed to fire. For large fires, use water spray or fog, thoroughly drench the burning material.

Unusual Fire And Explosion Hazards: May evolve carbon dioxide and carbon monoxide under fire conditions. Containers exposed in a fire should be cooled with water to prevent vapor pressure buildup leading to rupture.

9. Reactivity Information

Incompatibility: Avoid contact with strong oxidizers (eg. Chlorine, peroxides, chromates, nitric acid, perchlorates, concentrated oxygen, permanganates) which can generate heat, fires, explosions and the release of toxic fumes.

Thermal Decomposition Products: In the event of combustion CO, CO₂ and/or NO_x may be formed. Do not breathe smoke or fumes. Wear suitable protective equipment.

10. Personal Protection Equipment

Respiratory Protection: If it is possible to generate significant levels of vapors or mists, a NIOSH approved or equivalent respirator is recommended. For large spills, entry into large tanks, vessels or enclosed small spaces with inadequate ventilation, a positive pressure, self-contained breathing apparatus is recommended.

Ventilation: General ventilation is recommended. Additionally, local exhaust ventilation is recommended where vapors, mists or aerosols may be released.

Protective Equipment: Wear impermeable gloves, boots, apron and face shield with chemical splash goggles. A full slicker suit is recommended if gross exposure is possible.

The availability of an eye wash fountain and safety shower are recommended. If clothing is contaminated, remove clothing and thoroughly wash the affected area. Launder contaminated clothing before reuse.

11. Spill & Disposal Information

In case of transportation accident, call the emergency response phone number: 800-535-5053

Spill Control And Recovery:

Small Spills: Contain with absorbent material, such as clay, soil or any commercially available absorbent. Shovel reclaimed liquid and absorbent into recovery or salvage drums for disposal. Refer to CERCLA in Section 14.

Large Spills: Dike and prevent further movement and reclaim into recovery or salvage drums or tank truck for disposal. Refer to CERCLA in Section 14.

For large indoor spills, evacuate employees and ventilate area. Those responsible for control and recovery should wear the protective equipment specified in Section 10. Ventilate area and evacuate employees from exposure if the airborne concentration exceeds the TLV. Refer to Section 14.

Prevent flow/discharge into lakes, ponds, streams, waterways or public water supplies.

Disposal: If this product becomes a waste, it meets the criteria of a hazardous waste as defined under the Resources Conservation and Recovery Act (RCRA) 40 CFR 261. Hazardous Waste D001.

As a hazardous liquid waste, it must be solidified with stabilizing agents (such as sand, fly ash, or cement) so that no free liquid remains before disposal to a licensed industrial waste landfill (Hazardous Waste Treatment, Storage and Disposal facility). A hazardous liquid waste can also be incinerated in accordance with local, state and federal regulations.

12. Environmental Information

If released into the environment, see CERCLA in Section 14.

13. Transportation Information

The proper shipping name and/or hazard class for this product may vary according to packaging, properties and mode of transportation. Typical proper shipping names for this product are:

All Transportation Modes:	Chemicals N.O.S.
UN/ID Number:	None
Hazard Class:	Not D.O.T. Regulated
Packing Group:	III
Flash Point:	240°F
Hazardous Components:	Ethylene Glycol
RQ lbs:	26,450
RQ Component(s):	Ethylene Glycol

14. Regulatory Information

The following regulations apply to this product:

Federal Regulations:

OSHA's Hazard Communication Rule, 29 CFR 1910.1200:

Based on our hazard evaluation, the following ingredients in this product are hazardous and the reasons are shown below.

Ethylene Glycol – Systemic effects (refer to Section 5)

Ethylene Glycol = 100 mg/m³ Ceiling as an aerosol ACGIH/TLV

Ethylene Glycol = 50 ppm OSHA/PEL

CERCLA/Superfund, 40 CFR 117, 302:

This product contains ethylene glycol, a Reportable Quantity (RQ) substance and if 26,450 pounds of the product are released, it requires notification to the NATIONAL RESPONSE CENTER, WASHINGTON, D.C. at 1-800-424-8802.

SARA/Superfund Amendments And Reauthorization Act Of 1986

(Title III) – Sections 302, 311, 312 and 313:

Section 302 – Extremely Hazardous Substance (40 CFR 355):

This product does not contain ingredients listed in Appendix A and B as an Extremely Hazardous Substance

Section 311 and 312 – Material Safety Data Sheet Requirements (40 CFR 370):

Our hazard evaluation has found this product to be hazardous. The product should be reported under the following EPA hazard categories.

- ***** Immediate (acute) health hazard
- ***** Delayed (chronic) health hazard
- Fire
- Sudden Release Of Pressure
- Reactive

***** Indicates Primary Hazards

Under SARA 311 and 312, the EPA has established threshold quantities for the reporting of a hazardous chemical. The current thresholds are: 500 pounds or the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

Section 313 – List Of Toxic Chemicals (40 CFR 372):

This product contains the following ingredient(s), (with CAS# and % range) which appear(s) on the List Of Toxic Chemicals:

Ethylene Glycol 102-21-1 20%

Toxic Substance Control Act (TSCA) (40 CFR 710):

The chemical ingredients in this product are on the 8 (b) inventory list.