



MATERIAL SAFETY DATA SHEET

Winter Mining Additive

Section 1 – COMPANY IDENTIFICATION

DSG Saskatoon Diesel Services
230 29th Street East
Saskatoon, SK S7L 6Y6

Product Information: 1-800-667-6879

**IN CASE OF A DANGEROUS GOODS EMERGENCY
CALL CANUTEC AT THE 24-HOUR NUMBER
613-966-6666**

Section 2 – COMPOSITION/INFORMATION ON INGREDIENTS

<u>Hazardous Ingredients:</u>	<u>CAS Number</u>
Proprietary Polymers	N/A
Detergent	N/A
*Vinyl Acetate Monomer	108-05-4
Light Aromatic Naphtha	64742-95-6
*(1,2,4-Trimethylbenzene).....	95-63-6
Heavy Aromatic Naphtha	64742-94-5
*Ethylene Glycol N-Butyl Ether	111-76-
Light Ends of Polyethylbenzene Residue	178535-25-6
*(Triethylbenzene).....	102-25-0
*Xylene.....	1330-20-7
*(Ethylbenzene).....	100-41-4

*Disclosure as a toxic chemical is required under Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

Section 3 – HAZARDOUS IDENTIFICATION

Potential Health Effects

Skin contact with Light Aromatic Naphtha may cause skin irritation with discomfort or rash. Evidence suggests that skin permeation can occur in amounts capable of producing photosensitization. Eye contact may cause irritation with discomfort, tearing, or blurring of vision. Inhalation may cause irritation of upper respiratory passages with coughing and discomfort. Ingestion may cause nonspecific discomfort, such as nausea, headache, weakness or temporary nervous system depression with anesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness. Prolonged or repeated exposure to Ethylene Glycol N-Butyl Ether may cause skin irritation which may be slow to heal. A single prolonged exposure may result in the material being absorbed in harmful amounts. Excessive exposure may cause hemolysis, thereby impairing the blood's ability to transport oxygen. Repeated minor exposure may result in absorption of harmful amounts. May cause moderate eye irritation which may be slow to heal. May cause moderate corneal injury. Effects may be slow to heal.

Vapors of Ethylene Glycol N-Butyl Ether may irritate eyes. A single prolonged excessive inhalation exposure may cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract.

Observations in animals include blood and kidney effects. Single dose oral toxicity of Ethylene Glycol N-Butyl Ether is considered to be moderate. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury. One case of Massive Ingestion (i.e. attempted suicide) reported blood (hemolysis) and kidney effects.

Eye contact with the product ingredients may cause eye irritation with discomfort, tearing, or blurring of vision. Direct exposure may cause skin irritation (redness, swelling). A single prolonged exposure may result in the material being absorbed through the skin in harmful amounts.

Inhalation of fumes or vapors from heated product may cause skin, eye and respiratory tract irritation.

Skin contact with Detergent may cause skin sensitization upon extended contact. The compound may cause skin sensitization in susceptible individuals. Eye contact may cause eye irritation with discomfort, tearing, or blurring of vision. Inhalation may initially include irritation of the upper respiratory passages with coughing and discomfort. Individuals with preexisting diseases of the central nervous system may have increased susceptibility to the toxicity of excessive exposures to Detergent.

Inhalation or ingestion of Heavy Aromatic Naphtha may cause central nervous system depression with anesthetic effects, such as dizziness, headache, confusion, incoordination and loss of consciousness.

Higher exposures may result in fatality from gross overexposure. Ingestion may cause gastrointestinal irritation. Aspiration hazard! Small amounts aspirated into the lungs during ingestion or vomiting may cause lung injury, possibly leading to death. Symptoms of aspiration into the lungs include coughing, gasping, choking, shortness of breath, bluish discolored skin, rapid breathing and heart rate. Chemical pneumonitis from aspiration may result in fever. Pulmonary edema or bleeding, drowsiness, confusion, coma and seizures may occur in more serious cases. Symptoms may develop immediately or as late as 24 hours after the exposure, depending on how much chemical entered the lungs.

Skin contact may cause skin irritation with discomfort or rash. Xylene can penetrate the skin in amounts capable of causing systemic toxicity. Eye contact may cause eye irritation with discomfort, tearing or blurring of vision. Inhalation of Ethylbenzene may cause irritation of the upper respiratory passages with coughing and discomfort.

Inhalation or ingestion of Xylene or Ethylbenzene may cause nonspecific discomfort, such as nausea, headache, or weakness; or temporary nervous system depression with anesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness.

Inhalation or ingestion of Ethylbenzene may cause abnormal liver or kidney function. Aspiration of Ethylbenzene into the lungs during ingestion or vomiting may lead to chemical pneumonitis. Ingestion of Xylene or Ethylbenzene may cause gastrointestinal tract irritation. Higher exposure to Xylene may lead to cardiac stress; anemia and other blood changes; respiratory effects; possible liver and kidney damage; or fatality from gross overexposure.

Inhalation of Kerosene may cause nonspecific discomfort, such as nausea, headache, or weakness; temporary nervous system depression with anaesthetic effects such as dizziness, headache, confusion, incoordination, and loss of consciousness; or possibly modest initial symptoms of lung irritation, followed in hours by severe shortness of breath, requiring prompt medical attention. In general, overexposure to high atmospheric concentrations of alkyl-substituted aromatics may produce central nervous system depression, headache, dizziness, incoordination, nausea and loss of appetite. Aspiration (liquid enters the lung), may cause lung damage due to chemical pneumonia, a condition caused by petroleum-like solvents.

Minute amounts of petroleum hydrocarbons aspirated into the lungs during ingestion or vomiting may cause mild to severe pulmonary injury and possible death. Individuals with preexisting diseases of the kidneys or liver may have increased susceptibility to the toxicity of excessive exposures.

Carcinogenicity Information

Ethylbenzene and Vinyl Acetate Monomer have been classified by the Internal Agency for Research on Cancer (IARC) as possibly carcinogenic to humans (Group 2B). This IARC classification was based upon limited evidence of carcinogenicity to animals and inadequate evidence of carcinogenicity to humans.

Section 4 - FIRST AID MEASURES

Inhalation

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Skin Contact

Flush skin with water after contact. Wash contaminated clothing before reuse.

Eye Contact

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

Ingestion

If swallowed, do not induce vomiting. Allow victim to rinse his mouth and then to drink 2-4 cupfuls of water. Never give anything by mouth to an unconscious person. Call a physician.

Notes to Physicians

Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400-ml water and mix thoroughly. Administer 5 ml/kg or 350 ml for an average adult. Because of the danger of aspiration, emesis or gastric lavage should not be employed unless the risk is justified by the presence of additional toxic substances. Activated charcoal may induce vomiting, but may be given after emesis or lavage to absorb toxic additives. Steroid therapy in mild to moderate cases does not improve outcome. Bacterial pneumonia often occurs after exposure, but prophylactic antibiotics are not indicated and should be reserved for documented bacterial pneumonia.

Notes to Physicians

Activated charcoal mixture may be administered. To prepare activated charcoal mixture, suspend 50 grams activated charcoal in 400-ml water and mix thoroughly. Administer 5 ml/kg or 350 ml for an average adult. Because of the danger of aspiration, emesis or gastric lavage should not be employed unless the risk is justified by the presence of additional toxic substances. Activated charcoal may induce vomiting, but may be given after emesis or lavage to absorb toxic additives. Steroid therapy in mild to moderate cases does not improve outcome. Bacterial pneumonia often occurs after exposure, but prophylactic antibiotics are not indicated and should be reserved for documented bacterial pneumonia.

Section 5 - FIRE FIGHTING MEASURES

Flammable Properties

Flash Point 114°F (45°C)
Method..... PMCC

Extinguishing Media

Water Spray, Foam, Dry Chemical, CO₂.

Fire Fighting Instructions

Wear self-contained breathing apparatus. Wear full protective equipment.



Section 6 - ACCIDENTAL RELEASE MEASURES

Note: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) SECTIONS before proceeding with clean up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean up. Soak up with sawdust, sand, oil dry or other absorbent material. Remove source of heat, sparks, flame, impact, friction, or electricity. Dike spill. Prevent material from entering sewers, waterways, or low areas.

Spill Clean-Up

Soak up with sawdust, sand, oil dry or other absorbent material.

Accidental Release Measures

Spills are very slippery and should be cleaned up promptly.

Section 7 - HANDLING AND STORAGE

Handling (Personnel)

Avoid breathing vapors or mist. Avoid contact with eyes, skin, or clothing. Wash thoroughly after handling.

Handling (Physical Aspects)

Keep away from heat, sparks and flames.

Storage

Store in a well-ventilated place. Keep container tightly closed. Store in accordance with National Fire Protection Association recommendations.

Section 8 - EXPOSURE CONTROLS

Engineering Controls

Use only with adequate ventilation. Keep container tightly closed.

Personal Protective Equipment

Eye/Face Protection

Wear overall chemical splash goggles or safety glasses.

Respirators

Where there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

Protective Clothing

Where there is potential for skin contact have available and wear as appropriate Impervious gloves, apron, pants, hood and jacket.

Exposure Limits

Light Aromatic Naphtha:

PEL (OSHA)None established
TLV (ACGIH)None established

1,2,4-Trimethylbenzene:

PEL (OSHA)25 ppm, 125 mg/m³, 8 hr TWA
TLV (ACGIH)25 ppm, 123 mg/m³, 8 hr TWA

Xylene:

PEL (OSHA)100 ppm, 435 ,mg/m³, 8 hr TWA
TLV (ACGIH)100 ppm, 434 mg/m³, 8 hr TWA



STEL 150 ppm, 651 mg/m³, A4;
BEI150 ppm, 15 minute TWA

Ethylbenzene:

PEL (OSHA)100 ppm, 435 mg/m³, 8 hr, TWA
TLV (ACGIH)100 ppm, 434 mg/m³, 8 hr, TWA, A3, BEI
STEL 125 ppm, 543 mg/m³

Vinyl Acetate Monomer:

PEL (OSHA)None established
TLV (ACGIH)10 ppm, 35 mg/m³, 8 hr, TWA, A3
STEL 15 ppm, 53 mg/m³, A3

Heavy Aromatic Naphtha:

PEL (OSHA)None established
TLV (ACGIH)None established

Ethylene Glycol N-Butyl Ether:

PEL (OSHA)25 ppm, skin
TLV (ACGIH)20 ppm, 8 hr TWA, A3

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical Data

Appearance..... Amber
Form..... Liquid
Odor..... Aromatic
Specific Gravity 0.915 @ 60/60°F (16/16°C)
Density..... 7.62 lbs./gal. @ 60°F (16°C)

Section 10 - STABILITY AND REACTIVITY

Chemical Stability

Stable at normal temperatures and storage conditions.

Incompatibility

Incompatible with strong oxidizers.

Decomposition

Decomposes with heat. Hazardous decomposition products include oxides of carbon.

Polymerization

Will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

Animal Data

Light Aromatic Naphtha:

Inhalation 6 hour LC50..... >14.4 mg/L in rats
Oral LD50..... ~5,000 mg/kg in rats

1,2,4-Trimethylbenzene:

Inhalation (Vapor) 4 hour LC50..... 18,000 mg/m³ in rats
Oral LD50 (Acute) 5,000 mg/kg in rats

Heavy Aromatic Naphtha:

Inhalation 6 hour LC50..... >11.67 mg/L in rats
Skin Absorption LD50 >3,160 mg/kg in rabbits
Oral LD50..... >5,000 mg/kg in rats

Xylene (mixed isomers):

Inhalation 4 hour LC50..... 6,700 ppm in rats
Skin absorption LD50..... 4,320 mg/kg in rabbits
Oral ALD 4,500 mg/kg in rats

Ethylbenzene:

Inhalation 4 hour LC50..... >4,000 ppm in rats
Skin absorption LD50..... ~15,000 mg/kg in mice
Oral LD50..... >3,500 mg/kg in rats

Vinyl Acetate Monomer:

Inhalation 4 hour LC50.....	4,000 ppm in rats
Skin Absorption LD50	2,335 mg/kg in rabbits
Oral LD50.....	2,920 mg/kg in rats

Detergent:

Skin absorption LD50.....	660 mg/kg in rabbits
Oral LD50.....	3,990 mg/kg in rats

Ethylene Glycol N-Butyl Ether:

Inhalation LC50.....	700 ppm in rats, 7 hours
Skin Absorption LD50	220 mg/kg in rabbits
Oral LD50.....	470 mg/kg in rats

Dermal absorption of Xylene in animals causes narcosis. Toxic effects described in animals by inhalation include upper respiratory irritation; central nervous system effects; behavioral effects; decreased weight gain; hearing loss; and effects on the blood, liver, kidneys, heart, spleen, lungs and bone marrow. By ingestion, xylene caused central nervous system effects; decreased body weight and liver effects. Tests of xylene in animals demonstrate no carcinogenic activity. Xylene does not produce heritable genetic damage in animals or genetic damage in bacterial or mammalian cell cultures. Although abnormal sperm were observed after an interperitoneal injection in rats, xylene did not produce reproductive effects.

Developmental toxicity was observed in animals exposed to xylene but only at concentrations that were maternally toxic.

Light Aromatic Naphtha is a moderate skin irritant, a slight eye irritant and a skin photosensitizer in animals. Toxic effects of a single inhalation exposure to very high concentrations include hyperactivity, salivation, incoordination, tremors, irregular respiration and nonspecific effects such as weight loss and irritation. Long-term inhalation exposure produced no significant effects from exposure up to concentrations of 400 ppm for one year. No animal test reports are available to define carcinogenic, mutagenic, developmental or reproductive hazards.

Vinyl Acetate is a slight skin and a severe eye irritant, but is untested for animal sensitization. No effects from repeated exposure to Vinyl Acetate by inhalation were observed at 100 ppm in rats. Exposure to higher concentrations of Vinyl Acetate by inhalation caused eye irritation and lacrimation, reduced weight gain, and irritation of the respiratory tract with breathing difficulty. The effects observed in rats and mice exposed by inhalation to 200 and 600 ppm for two years include reduced body weight. Repeated exposures by administration of Vinyl Acetate in the drinking water caused decreased weight gain, and low liver weights. Reduced body weight occurred in rats administered 5000 ppm in their drinking water for two years. Vinyl acetate is weakly carcinogenic in rats, but not in mice. The compound does not have an adverse effect on the development of rats and its effect on reproduction is not considered significant. The genotoxicity of vinyl acetate is equivocal. Genetic damage was produced in some types of cell cultures and in animals, but was negative in other studies. No tests for heritable genetic damage were available.

The detergent is a severe skin and eye irritant and is a skin sensitizer in animals. Effects of long term dermal exposures include hyperkeratosis and necrosis of the epidermis but no evidence of increased incidences of tumors. Repeated dietary administration of high doses produced depressed liver weights and body weight loss. Tests in animals demonstrate no carcinogenic activity. No animal test reports are available to define developmental or reproductive hazards. The Detergent does produce genetic damage in bacterial and mammalian cell cultures but has not been tested in animals.

Heavy Aromatic Naphtha is a severe skin irritant, and is an eye irritant, but is not a skin sensitizer in animals. Repeated inhalation exposures caused reduced growth rate, respiratory tract irritation, congestion in liver and spleen, changes in blood tests and equilibrium disturbances. No animal test reports are available to define carcinogenic, mutagenic, developmental or reproductive hazards.



Section 12 - ECOLOGICAL INFORMATION

Light Aromatic Naphtha:

The LC50 in white crappie is approximately 4.2 mg/L.

Xylene:

96 hour LC50 fathead minnow: 27-42 mg/L

Heavy Aromatic Naphtha:

96 hour LC50, fathead minnows: 4.2 – 20.8 mg/L

Section 13 - DISPOSAL CONSIDERATIONS

Waste Disposal

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial and Local regulations.

Section 14 - SHIPPING INFORMATION

DOT

Proper Shipping Name..... Combustible Liquid, n.o.s. (Aromatic Hydrocarbons)
Hazard Class 3
I.D. No. (UN/NA)NA 1993
Packing Group..... III
Special Information..... Flash Point: 45°C
Marine PollutantNo
Reportable Quantity..... Xylene 100 lbs.
DOT Label(s)Combustible Liquid

IMO

Proper Shipping Name..... Flammable Liquid, n.o.s. (Aromatic Hydrocarbons)
Hazard Class 3
I.D. No. (UN)1993
Packing Group III
Special Information Flash Point: 45°C
Marine PollutantNo
IMO LabelFlammable Liquid



Section 15 - OTHER INFORMATION

NPCA-HMIS Rating

Health..... 2* (Chronic Health Effects)

Flammability..... 2

Reactivity 0

Personal Protection rating to be supplied by user depending on use conditions

The data in this Material Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

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Responsibility for MSDS:

MSDS Coordinator
DSG Canada
Saskatoon, SK S7L 6Y6
(800) 667-6879 or
(306) 242-7644

Revised September, 2007