

# AMSOIL Material Safety Data Sheet

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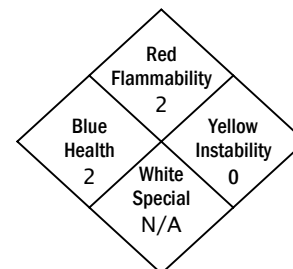
## Section 1: Product and Company Identification

Manufacturer: AMSOIL, Inc.  
925 Tower Avenue  
Superior, WI 54880

Telephone: CHEMTREC (Spill Emergency Only): 1-800-424-9300  
Information: 715-392-7101

AMSOIL Product Code ..... DFF  
Product Label Name ..... COLD FLOW IMPROVER  
Product Use ..... DISTILLATE FUEL FLOW IMPROVER

NFPA & HMIS Rating



## Section 2: Composition/Information on Ingredients

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

Comp	CAS No.	Percentage (by wt.)	Exposure Limits						
			OSHA		ACGIH		Others		Carcinogen
			TWA	STEL	TWA	STEL	TWA	STEL	
Petroleum naphtha	64742-94-5	32.3 – 38.7%	N/E	N/E	N/E	N/E	100 ppm (1)	N/E	N/E
Naphthalene	91-20-3	3.7%	10 ppm	15 ppm	10 ppm	15 ppm	N/E	N/E	IARC Suspect Carcinogen
Trimethylbenzene	25551-13-7	.6 – 3.2%	25 ppm	N/E	25 ppm	N/E	N/E	N/E	N/E
1, 2, 4 – Trimethylbenzene	95-63-6	11.3%	N/E	N/E	25 ppm	N/E	N/E	N/E	N/E
1, 3, 5 – Trimethylbenzene	108-67-8	2.0 – 3.2%	N/E	N/E	25 ppm	N/E	N/E	N/E	N/E
Diethylbenzene	25340-17-4	.3 - 1.40%	N/E	N/E	N/E	N/E	N/E	N/E	N/E
Xylene	1330-20-7	.4%	N/E	N/E	100 ppm	100 ppm	46 ppm	N/E	N/E
Isopropylbenzene	98-82-8	.4%	50 ppm	N/E	50 ppm	50 ppm	N/E	N/E	N/E
Ethylbenzene	100-41-4	0.1 - 0.3%	100 ppm	125 ppm	100 ppm	125 ppm	N/E	N/E	IARC Suspect Carcinogen
Ethylene Glycol Monobutyl Ether	111-76-2	6.3 – 6.5%	N/E	N/E	N/E	N/E	N/E	N/E	N/E

## Section 3: Hazards Identification

### POTENTIAL HEALTH EFFECTS:

#### WARNING:

- Harmful or fatal if swallowed
- Harmful if inhaled
- Causes eye irritation
- Causes respiratory tract irritation
- Harmful if absorbed through skin
- Flammable liquid
- May cause skin irritation
- Contains Components which may cause cancer
- May cause chronic health effects

**SYMPTOMS OF EXPOSURE:** Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: redness of the face and neck, stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), central nervous system excitation (giddiness, liveliness, light-headed feeling) followed by central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, temporary changes in behavior, effects on memory, muscle weakness, mild, temporary changes in the liver, respiratory depression (slowing of the breathing rate), shortness of breath, loss of coordination, confusion, irregular heartbeat, narcosis (dazed or sluggish feeling), respiratory failure, coma.

**TARGET ORGAN EFFECTS:** This material (or component) has been shown to lower activity of certain immune system cells in experimental animals. The significance of this effect with respect to human health is uncertain. Over-exposure to this material (its components) has been suggested as a cause of the following effects in laboratory animals: blood abnormalities, liver abnormalities, cataracts, kidney damage, effects on hearing. Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: liver abnormalities.

**DEVELOPMENTAL INFORMATION:** This material (or components) may be harmful to the human fetus based on positive test results with laboratory animals. Cumene (isopropylbenzene) did not cause harm to the unborn pup in laboratory animal studies, even at levels which were harmful to the pregnant animal.

**CANCER INFORMATION:** Ethylbenzene and naphthalene have been shown to cause cancer in laboratory animals. The relevance of this finding to humans is uncertain. The International Agency for Research on Cancer (IARC) has classified ethylbenzene and naphthalene as a possible human carcinogen.

**Section 4: First Aid Measures**

**EYE:** Flush with water for 15-20 minutes. Seek medical attention if irritation develops.

**SKIN:** Wash immediately with soap and water. Remove contaminated clothing and launder before reuse. If irritation persists, seek immediate medical attention. Launder contaminated clothing before reuse.

**INHALATION:** Remove exposed person to fresh air. If breathing is labored give oxygen. If breathing has stopped apply artificial respiration. If irritation persists or if toxic symptoms are observed, get medical attention.

**INGESTION:** DO NOT INDUCE VOMITING. If vomiting does occur, keep head below hips to reduce risk of aspiration. If conscious, give 2 glasses of water. Get immediate medical attention.

**NOTE TO PHYSICIANS:** Treat symptomatically

**Section 5: Fire Fighting Measures**

<b>FLAMMABILITY PROPERTIES:</b>	Flash Point .....	115°F(46°C)
	Method .....	PMCC ASTM D-93
	LFL/UFL .....	Not Determined
	Auto-ignition Temperature .....	Not Determined

**EXTINGUISHING MEDIA:** Carbon dioxide, dry chemical, and alcohol foam. Water can be used to protect exposed materials

**FIRE & EXPLOSION HAZARDS:** Vapors are heavier than air and may travel along the ground and be ignited by heat, pilot lights, other flames and ignition sources at locations near point of release. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.

**FIREFIGHTING EQUIPMENT:** Full bunker gear recommended including a positive pressure self-contained breathing apparatus.

**Section 6: Accidental Release Measures**

**SMALL SPILLS:** Absorb liquid on vermiculite, floor absorbent, or other absorbent material and transfer to hood.

**LARGE SPILL:** Eliminate all ignition sources (flares, flames including pilot lights, electrical sparks). Persons not wearing protective equipment should be excluded form area of spill until clean-up has been completed. Stop spill at source. Prevent from entering drains, sewers, streams or other bodies of water. Prevent from spreading. If runoff occurs, notify authorities as required. Pump vacuum transfer spilled product to clean containers for recovery. Absorb unrecoverable product. Transfer contaminate absorbent, soil and other materials to containers for disposal. Prevent run-off to sewers, streams or other bodies of water. If run-off occurs, notify proper authorities as required.

**Section 7: Handling and Storage**

**HANDLING:** Keep away from potential sources of ignition. Open container in a well ventilated area. Avoid breathing vapors. Keep containers closed when not in use. Do not discharge into drains or the environment, dispose to an authorized waste collection point. Use appropriate containment to avoid environmental contamination. Wash thoroughly after handling. Empty containers retain material residue. Do not cut, weld, braze, drill, grind or expose containers to heat, flame, spark or other sources of ignition.

**STORAGE:** Keep away from heat, flame, or source of ignition. Store in a cool, dry, ventilated area out of sunlight.

**Section 8: Exposure Controls/Personal Protection**

**VENTILATION:** Use adequate general or local exhaust ventilation to keep airborne concentrations below exposure limits.

**RESPIRATORY:** Use a NIOSH approved respirator when necessary.

**SKIN:** Use Viton or Nitrile gloves to avoid prolonged or repeated skin contact. Long sleeve shirt is recommended. Wear either a chemical protective suit or apron when potential for contact with material exists. Launder contaminated clothing before reuse

**EYE:** Use splash goggles or face shield where splashing is expected or can occur.

**Section 9: Physical and Chemical Properties**

Physical State .....	Liquid
Freezing/Melting Point .....	-17
Vapor Pressure .....	Not Determined
Vapor Density (Air=1) .....	Not Determined
Evaporation Rate .....	Not Determined
Solubility in Water .....	Insoluble
Specific Gravity (Water=1) .....	Unknown
Density, lb./gal .....	Unknown
Volatility (Volume) .....	Unknown
VOC .....	Unknown
pH .....	Not Determined
Coefficient of Water/Oil Distribution .....	Not Determined
Odor .....	Aromatic, Hydrocarbon Odor
Odor Threshold .....	Not Determined
Appearance .....	Clear Brown Liquid
Viscosity, cSt @ 100°C .....	Not Applicable
Viscosity, cSt @ 40°C .....	10.48
Viscosity Index .....	Not Applicable

**Section 10: Stability and Reactivity**

**STABILITY:** Stable under moderately elevated temperatures and pressures.

**INCOMPATIBILITY:** Avoid contact with strong oxidants, sulfuric acid.

**HAZARDOUS POLYMERIZATION:** Will not occur.

**HAZARDOUS DECOMPOSITION OF PRODUCT:** Toxic oxides of carbon, aldehydes and other products of incomplete combustion.

Section 11: Toxicological InformationACUTE EXPOSURE

- Eye Irritation: Moderate to strong eye irritation. Based on data from components or similar material.
- Skin Irritation: Skin irritant. Based on data from components or similar material. Prolonged or repeated skin contact as from clothing wet with material may cause dermatitis. Symptoms may include redness, edema, drying, defatting, and cracking of the skin.
- Respiratory Irritation: Nose, throat, and lung irritant. Based on data from components or similar materials. Exposure to a high concentration of vapor or mist is irritation to the respiratory tract.
- Dermal Toxicity: The LD50 in rabbits >2000 mg/Kg. Based on data from components or similar materials. Prolonged or widespread contact with this material could result in the absorption of potentially harmful amounts.
- Inhalation Toxicity: High concentrations may cause headaches, dizziness, nausea, stupor, and other central nervous system effects leading to visual impairment, difficulty breathing and convulsions.
- Oral Toxicity: The LD50 in rats is between 2000 mg/kg and 5000 mg/kg. Based on data from components or similar materials. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.
- Dermal Sensitization: May cause allergic reaction in susceptible individuals.

CHRONIC EXPOSURE

- Chronic Toxicity: Repeated over exposure to petroleum naphtha can cause nervous system damage. Repeated overexposure to naphthalene may cause destruction of red blood cells with anemia, fever, jaundice and kidney and liver damage.
- Carcinogenicity: A two-year national toxicology Program (NTP) study found an increased incidence of tumors of the nose in rats exposed to ethylbenzene and naphthalene by inhalation. In mice similarly exposed, increased incidences of alveolar/bronchiolar adenomas were observed. Naphthalene and ethylbenzene have been classified by the International Agency for Research on Cancer (IARC) as a possible human carcinogen (Group 2B) on the basis of sufficient evidence of carcinogenicity in experimental animals but inadequate evidence in exposed humans.
- Mutagenicity: No data available to indicate product present at greater than 0.1% present a mutagenic or genotoxic hazard.
- Reproductive Toxicity: No data available to indicate product present at greater than 0.1% present a reproductive hazard.
- Teratogenicity: No data available to indicate product present at greater than 0.1% present a reproductive hazard.

Section 12: Ecological Information

- Freshwater Fish Toxicity: The acute LC50 is 1-10 mg/L based on component data
- Freshwater Invertebrates: The acute LC50 is 1-10 mg/L based on component data
- Algal Inhibition: The acute LC50 is 1-10 mg/L based on component data
- Biodegradation: At least 25% of the components in this product show limited biodegradation based on OECD 301-type test
- Bioaccumulation: 25% or greater of the components potentially bioconcentrate, based on octanol/water Coefficients
- Soil Mobility: Not determined.

**Section 13: Disposal Considerations**

This material, if discarded, is hazardous waste under RCRA Regulations 40 CFR 261. Waste management should be in compliance with federal, state and local laws. 0.006% Benzene, CAS # 71-43-2, D018

**Section 14: Transport Information**

ICAO/IATA (US)	Not Regulated
ICAO/IATA (International)	Environmentally hazardous substance, liquid, n.o.s. (petroleum naphtha), Class 9, UN3082, PG III, Marine pollutant
IMDG	Environmentally hazardous substance, liquid, n.o.s. (petroleum naphtha), Class 9, UN3082, PG III, Marine pollutant
IMDG EMS Fire	F-A
IMDG EMS Spill	S-A
IMDG MFAG	None
IMO Marine Vessel	DO NOT TRANSPORT – ADDITIONAL INFORMATION REQUIRED
USCG Compatibility	Not determined
U.S. DOT Bulk	Combustible liquid, n.o.s. (acrylic polymer, petroleum naphtha), NA1993, PG III, RQ (Benzene, dimethyl-, Naphthalene), Marine Pollutant (Petroleum naphtha)
U.S. DOT Non-Bulk	Not Regulated
DOT NAERG	128
TDG Bulk	Environmentally hazardous substance, liquid, n.o.s. (petroleum naphtha), Class 9, UN3082, PG III, Marine pollutant
TDG Non-Bulk	Not Regulated
Mexico	Environmentally hazardous substance, liquid, n.o.s. (petroleum naphtha), Class 9, UN3082, PG III, Marine pollutant
Mexico Non-Bulk	Not regulated
Bulk Quantity	85000 liters, 22457 gal.
Non-Bulk Quantity	207.8 liters, 55 gal.

**Section 15: Regulatory Information**

U.S. Federal Regulations

OSHA Table Z .....	Petroleum Distillates
TSCA .....	Not Applicable

CERCLA 40 CFR 302.4

Components	RQ
Xylenes (O-, M-, P- Isomers)	100 lbs
Cumene	5000 lbs
Ethylbenzene	1000 lbs
Naphthalene	231 gal
Benzene, dimethyl	1671 gal

SARA Title III

Section 302 Extremely Hazardous.....	None
Section 311/312	
Fire Hazard .....	Yes
Reactive Hazard.....	No
Release of Pressure.....	No
Acute Health Hazard.....	Yes
Chronic Health Hazard.....	Yes

Section 313 Components – 40 CFR 372.65

Components	CAS NO	Wgt %
1, 2, 4 Trimethylbenzene	95-63-6	11.3%
Xylenes (Mixed Isomers)	1330-20-7	0.4%
Ethylbenzene	100-41-4	0.1 – 0.3%
Naphthalene	91-20-3	3.7%

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U.S. State & Local Regulations..... California Proposition 65

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the state of California to cause cancer and/or birth defects:

- ETHYL BENZENE
- BENZENE
- NAPHTHALENE
- TOLUENE

International Regulations

WHMIS .....All components listed

**Section 16: Other Information**

The information and recommendations contained herein are, to the best of AMSOIL's knowledge and belief, accurate and reliable as of the date issued. AMSOIL makes no warranty or guarantee, expressed or implied, of their accuracy or reliability, and AMSOIL shall not be liable for any loss or damage based upon the criteria supplied by the developers of these rating systems, together with AMSOIL's interpretation of the available data.