MSDS # 000882

METHANOL
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MATERIAL SAFETY DATA SHEET

FISHER SCIENTIFIC
CHEMICAL DIVISION
1 REAGENT LANE
FAIR LAWN NJ 07410
(201) 796-7100

EMERGENCY NUMBER: (201) 796-7100
CHEMTREC ASSISTANCE: (800) 424-9300

SUBSTANCE IDENTIFICATION

CAS-NUMBER 67-56-1

SUBSTANCE: **METHANOL**

TRADE NAMES/SYNONYMS:
METHYL ALCOHOL; WOOD ALCOHOL; METHYL HYDROXIDE; CARBINOL; MONOHYDROXYMETHANE; WOOD SPIRIT; WOOD NAPHTHA; METHYLOL; COLONIAL SPIRIT; COLUMBIAN SPIRIT; PYROXYLIC SPIRIT; COULOMATIC (R) CONDITIONER SOLUTION; STANDARD WATER IN METHANOL; A454; A452; A936; A408; A947; A935; BP1105; A412; A411; A433P; SW2;; SC95; A452SK; A408SK; A412P; A434; A412SK; A450; A433S; A454SS; RCRA U154; UN 1230; STCC 4909230; CH4O; ACC14280

CHEMICAL FAMILY:
Hydroxyl, aliphatic

MOLECULAR FORMULA: C-H3-O-H

MOLECULAR WEIGHT: 32.04

CERCLA RATINGS (SCALE 0-3): HEALTH=3 FIRE=3 REACTIVITY=0 PERSISTENCE=0
NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=3 REACTIVITY=0

COMPONENTS AND CONTAMINANTS

COMPONENT: METHYL ALCOHOL (METHANOL) PERCENT: 100
CAS# 67-56-1

OTHER CONTAMINANTS: NONE

EXPOSURE LIMITS:
METHYL ALCOHOL (METHANOL):
200 ppm (262 mg/m3) OSHA TWA (skin); 250 ppm (328 mg/m3) OSHA STEL
200 ppm (262 mg/m3) ACGIH TWA (skin); 250 ppm (328 mg/m3) ACGIH STEL
200 ppm (262 mg/m3) NIOSH recommended TWA (skin);
250 ppm (328 mg/m3) NIOSH recommended STEL
200 ppm (262 mg/m3) DFG MAK TWA (skin);
400 ppm (524 mg/m3) DFG MAK 30 minute peak, average value, 4 times/shift

Measurement method: Silica gel tube; water; gas chromatography with flame ionization detection; (NIOSH Vol. III # 2000, Methanol).

5000 pounds CERCLA Section 103 Reportable Quantity
Subject to SARA Section 313 Annual Toxic Chemical Release Reporting

OSHA revoked the final rule limits of January 19, 1989 in response to the 11th Circuit Court of Appeals decision (AFL-CIO v. OSHA) effective June 30, 1993. See 29 CFR 1910.1000 (58 FR 35338)

PHYSICAL DATA

DESCRIPTION: Clear, colorless liquid with a characteristic alcoholic odor.

BOILING POINT: 149 F (65 C) MELTING POINT: -137 F (-94 C)

SPECIFIC GRAVITY: 0.7914 VAPOR PRESSURE: 97.25 mmHg @ 20 C

EVAPORATION RATE: (butyl acetate=1) 4.6 SOLUBILITY IN WATER: very soluble

ODOR THRESHOLD: 100 ppm VAPOR DENSITY: 1.11

SOLVENT SOLUBILITY: Ether, benzene, alcohol, acetone, chloroform, ethanol.

VISCOSITY: 0.59 cP @ 20 C

FIRE AND EXPLOSION DATA

FIRE AND EXPLOSION HAZARD:
Dangerous fire hazard when exposed to heat or flame.

Vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back.

Vapor-air mixtures are explosive.

FLASH POINT: 52 F (11 C) (CC) UPPER EXPLOSIVE LIMIT: 36.0%

LOWER EXPLOSIVE LIMIT: 6.0% AUTOIGNITION TEMP.: 725 F (385 C)

FLAMMABILITY CLASS(OSHA): IB

FIREFIGHTING MEDIA:
Dry chemical, carbon dioxide, water spray or alcohol-resistant foam (1993 Emergency Response Guidebook, RSPA P 5800.6).

For larger fires, use water spray, fog or alcohol-resistant foam (1993 Emergency Response Guidebook, RSPA P 5800.6).

FIREFIGHTING:
Move container from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Stay away from ends of tanks. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank due to fire. Isolate for 1/2 mile in all directions if tank, rail car or tank truck is involved in fire (1993 Emergency Response Guidebook, RSPA P 5800.6, Guide Page 28).

Extinguish only if flow can be stopped; use water in flooding amounts as fog, solid streams may not be effective. Cool containers with flooding quantities of water, apply from as far a distance as possible. Avoid breathing toxic vapors, keep upwind.

TRANSPORTATION DATA

U.S. DEPARTMENT OF TRANSPORTATION SHIPPING NAME-ID NUMBER, 49 CFR 172.101:
Methanol-UN 1230

U.S. DEPARTMENT OF TRANSPORTATION HAZARD CLASS OR DIVISION, 49 CFR 172.101:
3 - Flammable liquid

U.S. DEPARTMENT OF TRANSPORTATION PACKING GROUP, 49 CFR 172.101:
PG II

U.S. DEPARTMENT OF TRANSPORTATION LABELING REQUIREMENTS, 49 CFR 172.101 AND SUBPART E:
FOR DOMESTIC TRANSPORTATION:
Flammable liquid

FOR INTERNATIONAL TRANSPORTATION:
Flammable liquid, poison

U.S. DEPARTMENT OF TRANSPORTATION PACKAGING AUTHORIZATIONS:
EXCEPTIONS: 49 CFR 173.150
NON-BULK PACKAGING: 49 CFR 173.202
BULK PACKAGING: 49 CFR 173.242

U.S. DEPARTMENT OF TRANSPORTATION QUANTITY LIMITATIONS 49 CFR 172.101:
PASSENGER AIRCRAFT OR RAILCAR: 1 L
CARGO AIRCRAFT ONLY: 60 L

TOXICITY

METHYL ALCOHOL (METHANOL):
IRRITATION DATA: 20 mg/24 hours skin-rabbit moderate; 40 mg eye-rabbit moderate; 100 mg/24 hours eye-rabbit moderate.
TOXICITY DATA: 86000 mg/m3 inhalation-human TCLo; 300 ppm inhalation-human TCLo; 64000 ppm/4 hours inhalation-rat LC50; 1000 ppm inhalation-monkey LCLo; 50 gm/m3/2 hours inhalation-mouse LCLo; 44 gm/m3/6 hours inhalation-cat LCLo; 50 mg/m3/12 hours/13 weeks-intermittent inhalation-rat TCLo; 15800 mg/kg skin-rabbit LD50; 393 mg/kg skin-monkey LDLo; 428 mg/kg oral-human LDLo; 143 mg/kg oral-human LDLo; 6422 mg/kg oral-man LDLo; 3429 mg/kg oral-man TDLo; 4 gm/kg oral-woman TDLo; 7 gm/kg oral-monkey LD50; 5628 mg/kg oral-rat LD50; 7300 mg/kg oral-mouse LD50; 14200 mg/kg oral-rabbit LD50; 7500 mg/kg oral-dog LDLo; 9800 mg/kg subcutaneous-mouse LD50; 2131 mg/kg intravenous-rat LD50; 4710 mg/kg intravenous-mouse LD50; 8907 mg/kg intravenous-rabbit LD50; 4641 mg/kg intravenous-cat LDLo; 7529 mg/kg intraperitoneal-rat LD50; 10765 mg/kg intraperitoneal-mouse LD50; 1826 mg/kg intraperitoneal-rabbit LD50; 3556 mg/kg intraperitoneal-guinea pig LD50; 8555 mg/kg intraperitoneal-hamster LD50; 868 mg/kg unreported-man LDLo; mutagenic data (RTECS); reproductive effects data (RTECS).
CARCINOGEN STATUS: None.
LOCAL EFFECTS: Irritant- skin, eye.
ACUTE TOXICITY LEVEL: Slightly toxic by dermal absorption and ingestion; relatively non-toxic by inhalation.