

Material Safety Data Sheet

Ethyl alcohol, denatured (A407)

ACC# 08701

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethyl alcohol, denatured (A407)

Catalog Numbers: A407-1, A407-20, A407-200, A407-20LC, A407-4, A407-500, A407-500LC, A407FB19, A407FB200, A407P-4, A407POPB19, A407POPB200, A407RB115, A407RB19, A407RB200, A407S-4, A407SK-4, NC9005755

Synonyms: Ethanol denatured; grain alcohol denatured; ethyl hydroxide denatured; ethyl hydrate denatured; algarin denatured

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
64-17-5	Ethyl alcohol	85 - 92	200-578-6
7732-18-5	Water	5	231-791-2
67-56-1	Methyl alcohol	3.6	200-659-6
108-10-1	Methyl isobutyl ketone	1.9	203-550-1
141-78-6	Ethyl acetate	1.3	205-500-4
308082-09-9	Gasoline, aviation	1	unlisted
108-88-3	Toluene	0.8	203-625-9
64742-89-8	Solvent naphtha (petroleum), light aliphatic	0.72-0.7	265-192-2
67-63-0	Isopropyl alcohol	.0025	200-661-7
75-07-0	Acetaldehyde	.001	200-836-8
67-64-1	Acetone	.0002	200-662-2
71-43-2	Benzene	trace	200-753-7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 13 deg C.

Danger! Flammable liquid. Causes severe eye irritation. May be absorbed through intact skin. May cause skin irritation. May cause central nervous system depression. May cause liver and kidney damage. May cause reproductive and fetal effects.

Target Organs: Kidneys, central nervous system, liver, eyes.

Potential Health Effects

Eye: Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. May cause painful sensitization to light. Vapors may cause eye irritation.

Skin: May cause skin irritation. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. May be absorbed through the skin.

Ingestion: May cause systemic toxicity with acidosis. May cause liver and kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May cause respiratory tract irritation. May cause effects similar to those described for ingestion. May cause narcotic effects in high concentration. May cause drowsiness, unconsciousness, and central nervous system depression.

Chronic: Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion. Prolonged or repeated skin contact may cause defatting and dermatitis. Prolonged or repeated exposure may cause adverse reproductive effects. May cause fetal effects.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Call a poison control center. If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor. May form explosive peroxides. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas.

Extinguishing Media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: 13 deg C (55.40 deg F)

Autoignition Temperature: 685 deg F (362.78 deg C)

Explosion Limits, Lower:3.3 (ethanol)

Upper: 19 (ethanol)

NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethyl alcohol	1000 ppm TWA	1000 ppm TWA; 1900 mg/m ³ TWA 3300 ppm IDLH	1000 ppm TWA; 1900 mg/m ³ TWA
Water	none listed	none listed	none listed
Methyl alcohol	200 ppm TWA; 250 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous route	200 ppm TWA; 260 mg/m ³ TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m ³ TWA
Methyl isobutyl ketone	50 ppm TWA; 75 ppm STEL	50 ppm TWA; 205 mg/m ³ TWA 500 ppm IDLH	100 ppm TWA; 410 mg/m ³ TWA
Ethyl acetate	400 ppm TWA	400 ppm TWA; 1400 mg/m ³ TWA 2000 ppm IDLH	400 ppm TWA; 1400 mg/m ³ TWA
Gasoline, aviation	none listed	none listed	none listed
Toluene	50 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous route	100 ppm TWA; 375 mg/m ³ TWA 500 ppm IDLH	200 ppm TWA; 300 ppm Ceiling
Solvent naphtha (petroleum), light aliphatic	none listed	none listed	none listed
Isopropyl alcohol	200 ppm TWA; 400 ppm STEL	400 ppm TWA; 980 mg/m ³ TWA 2000 ppm IDLH	400 ppm TWA; 980 mg/m ³ TWA
Acetaldehyde	25 ppm Ceiling	2000 ppm IDLH	200 ppm TWA; 360 mg/m ³ TWA
Acetone	500 ppm TWA; 750 ppm STEL	250 ppm TWA; 590 mg/m ³ TWA 2500 ppm IDLH	1000 ppm TWA; 2400 mg/m ³ TWA
Benzene	0.5 ppm TWA; 2.5 ppm STEL; Skin - potential significant contribution to overall exposure by the cutaneous route	0.1 ppm TWA 500 ppm IDLH	10 ppm TWA (apply only to exempt industry segments); 25 ppm Ceiling; 1 ppm PEL; 5 ppm STEL; 0.5 ppm Action Level (Cancer hazard, Flammable - see 29 C FR 1910.1028)

OSHA Vacated PELs: Ethyl alcohol: 1000 ppm TWA; 1900 mg/m³ TWA Water: No OSHA Vacated PELs are listed for this chemical. Methyl alcohol: 200 ppm TWA; 260 mg/m³ TWA Methyl isobutyl ketone: 50 ppm TWA; 205 mg/m³ TWA Ethyl acetate: 400 ppm TWA; 1400 mg/m³ TWA Gasoline, aviation: No OSHA Vacated PELs are listed for this chemical. Toluene: 100 ppm TWA; 375 mg/m³ TWA Solvent naphtha (petroleum), light aliphatic: No OSHA Vacated PELs are listed for this chemical. Isopropyl alcohol: 400 ppm TWA; 980 mg/m³ TWA Acetaldehyde: 100 ppm TWA; 180 mg/m³ TWA Acetone: 750 ppm TWA; 1800 mg/m³ TWA Benzene: 10 ppm TWA (unless specified in 1910.1028)

Personal Protective Equipment

Eyes: Wear chemical splash goggles and face shield.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear, colorless
Odor: aromatic odor
pH: No data
Vapor Pressure: 40.9 mm Hg @ 20 deg C
Vapor Density: 1.6 (ethanol)
Evaporation Rate: 2.0
Viscosity: Not available.
Boiling Point: 173.3 deg F
Freezing/Melting Point: -90 deg C
Decomposition Temperature: Not available.
Solubility: Soluble in water.
Specific Gravity/Density: 0.7905
Molecular Formula: Mixture.
Molecular Weight: Not available.

Section 10 - Stability and Reactivity

Chemical Stability: Stable. This material may be sensitive to peroxide formation.
Conditions to Avoid: This material may be sensitive to peroxide formation., incompatible materials, ignition sources.
Incompatibilities with Other Materials: Acids (mineral, non-oxidizing, e.g. hydrochloric acid, hydrofluoric acid, muriatic acid, phosphoric acid), acids (mineral, oxidizing, e.g. chromic acid, hypochlorous acid, nitric acid, sulfuric acid), acids (organic, e.g. acetic acid, benzoic acid, formic acid, methanoic acid, oxalic acid), azo, diazo, and hydrazines (e.g. dimethyl hydrazine, hydrazine, methyl hydrazine), isocyanates (e.g. methyl isocyanate), metals (alkali and alkaline, e.g. cesium, potassium, sodium), nitrides (e.g. potassium nitride, sodium nitride), peroxides and hydroperoxides (organic, e.g. acetyl peroxide, benzoyl peroxide, butyl peroxide, methyl ethyl ketone peroxide), epoxides (e.g. butyl glycidyl ether), oxidizing agents (strong, e.g. bromine, hydrogen peroxide, nitrogen dioxide, potassium nitrate), reducing agents (strong, e.g. aluminum carbide, chlorosilane, hydrogen phosphide, lithium hydride), water reactive substances (e.g. acetic anhydride, alkyl aluminum chloride, calcium carbide, ethyl dichlorosilane),.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 64-17-5: KQ6300000
CAS# 7732-18-5: ZC0110000
CAS# 67-56-1: PC1400000
CAS# 108-10-1: SA9275000
CAS# 141-78-6: AH5425000
CAS# 308082-09-9 unlisted.
CAS# 108-88-3: XS5250000
CAS# 64742-89-8 unlisted.
CAS# 67-63-0: NT8050000
CAS# 75-07-0: AB1925000
CAS# 67-64-1: AL3150000
CAS# 71-43-2: CY1400000

LD50/LC50:

CAS# 64-17-5:
Draize test, rabbit, eye: 500 mg Severe;
Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, mouse: LC50 = 39 gm/m³/4H;
Inhalation, rat: LC50 = 20000 ppm/10H;
Oral, mouse: LD50 = 3450 mg/kg;
Oral, rabbit: LD50 = 6300 mg/kg;
Oral, rat: LD50 = 7060 mg/kg;
Oral, rat: LD50 = 9000 mg/kg;

CAS# 7732-18-5:

Oral, rat: LD50 = >90 mL/kg;

CAS# 67-56-1:

Draize test, rabbit, eye: 40 mg Moderate;
Draize test, rabbit, eye: 100 mg/24H Moderate;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, rabbit: LC50 = 81000 mg/m³/14H;
Inhalation, rat: LC50 = 64000 ppm/4H;
Oral, mouse: LD50 = 7300 mg/kg;
Oral, rabbit: LD50 = 14200 mg/kg;
Oral, rat: LD50 = 5600 mg/kg;

Skin, rabbit: LD50 = 15800 mg/kg;

CAS# 108-10-1:

Draize test, rabbit, eye: 40 mg Severe;
Draize test, rabbit, eye: 100 uL/24H Moderate;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, mouse: LC50 = 23300 mg/m³;
Inhalation, mouse: LC50 = 23300 mg/m³;
Inhalation, rat: LC50 = 100 gm/m³;
Oral, mouse: LD50 = 1900 mg/kg;
Oral, mouse: LD50 = 2850 mg/kg;
Oral, rat: LD50 = 2080 mg/kg;
Oral, rat: LD50 = 4600 mg/kg;

CAS# 141-78-6:

Inhalation, mouse: LC50 = 45 gm/m³/2H;
Inhalation, rat: LC50 = 200 gm/m³;
Oral, mouse: LD50 = 4100 mg/kg;
Oral, rabbit: LD50 = 4935 mg/kg;
Oral, rat: LD50 = 5620 mg/kg;
Skin, rabbit: LD50 = >20 mL/kg;

CAS# 308082-09-9:

CAS# 108-88-3:

Draize test, rabbit, eye: 870 ug Mild;
Draize test, rabbit, eye: 2 mg/24H Severe;
Draize test, rabbit, skin: 435 mg Mild;
Draize test, rabbit, skin: 500 mg Moderate;
Draize test, rabbit, skin: 20 mg/24H Moderate;
Inhalation, mouse: LC50 = 400 ppm/24H;
Inhalation, mouse: LC50 = 30000 mg/m³/2H;
Inhalation, mouse: LC50 = 19900 mg/m³/7H;
Inhalation, mouse: LC50 = 10000 mg/m³;
Inhalation, rat: LC50 = 49 gm/m³/4H;
Oral, rat: LD50 = 636 mg/kg;
Skin, rabbit: LD50 = 14100

CAS# 64742-89-8:

CAS# 67-63-0:

Draize test, rabbit, eye: 100 mg Severe;
Draize test, rabbit, eye: 10 mg Moderate;
Draize test, rabbit, eye: 100 mg/24H Moderate;
Draize test, rabbit, skin: 500 mg Mild;
Inhalation, mouse: LC50 = 53000 mg/m³;
Inhalation, rat: LC50 = 16000 ppm/8H;
Inhalation, rat: LC50 = 72600 mg/m³;
Oral, mouse: LD50 = 3600 mg/kg;
Oral, mouse: LD50 = 3600 mg/kg;
Oral, rabbit: LD50 = 6410 mg/kg;
Oral, rat: LD50 = 5045 mg/kg;
Oral, rat: LD50 = 5000 mg/kg;
Skin, rabbit: LD50 = 12800

CAS# 75-07-0:

Draize test, rabbit, eye: 40 mg Severe;
Inhalation, mouse: LC50 = 23 gm/m³/4H;
Inhalation, mouse: LC50 = 20300 mg/m³/2H;
Inhalation, rat: LC50 = 13300 ppm/4H;
Inhalation, rat: LC50 = 25000 mg/m³;
Oral, mouse: LD50 = 900 mg/kg;
Oral, rat: LD50 = 661 mg/kg;
Oral, rat: LD50 = 1930 mg/kg;
Skin, rabbit: LD50 = 3540 mg/kg;

CAS# 67-64-1:

Dermal, guinea pig: LD50 = >9400 uL/kg;
Draize test, rabbit, eye: 20 mg Severe;
Draize test, rabbit, eye: 20 mg/24H Moderate;
Draize test, rabbit, eye: 10 uL Mild;
Draize test, rabbit, skin: 500 mg/24H Mild;
Inhalation, mouse: LC50 = 44 gm/m³/4H;
Inhalation, rat: LC50 = 50100 mg/m³/8H;
Oral, mouse: LD50 = 3 gm/kg;
Oral, rabbit: LD50 = 5340 mg/kg;
Oral, rat: LD50 = 5800 mg/kg;

CAS# 71-43-2:

Dermal, guinea pig: LD50 = >9400 uL/kg;

Draize test, rabbit, eye: 88 mg Moderate;
 Draize test, rabbit, eye: 2 mg/24H Severe;
 Draize test, rabbit, skin: 20 mg/24H Moderate;
 Inhalation, mouse: LC50 = 9980 ppm;
 Inhalation, mouse: LC50 = 24 mL/kg/2H;
 Inhalation, rat: LC50 = 10000 ppm/7H;
 Inhalation, rat: LC50 = 34 mL/kg/2H;
 Inhalation, rat: LC50 = 6.5 mL/kg/4H;
 Oral, mouse: LD50 = 4700 mg/kg;
 Oral, rat: LD50 = 930 mg/kg;
 Oral, rat: LD50 = 1 mL/kg;
 Oral, rat: LD50 = 1800

Carcinogenicity:

CAS# 64-17-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
 CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
 CAS# 67-56-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
 CAS# 108-10-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
 CAS# 141-78-6: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
 CAS# 308082-09-9: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
 CAS# 108-88-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
 CAS# 64742-89-8: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
 CAS# 67-63-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
 CAS# 75-07-0:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** carcinogen, initial date 4/1/88
- **NTP:** Suspect carcinogen
- **IARC:** Group 2B carcinogen

CAS# 67-64-1: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
 CAS# 71-43-2:

- **ACGIH:** A1 - Confirmed Human Carcinogen
- **California:** carcinogen, initial date 2/27/87
- **NTP:** Known carcinogen
- **IARC:** Group 1 carcinogen

Epidemiology: Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the "fetal alcohol syndrome".

Teratogenicity: Repeated ingestion of ethanol by pregnant mothers has been shown to adversely affect the central nervous system of the fetus, producing a collection of effects which together constitute the fetal alcohol syndrome.

Reproductive Effects: Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have been collectively termed the fetal alcohol syndrome. Among the characteristics of this syndrome are intrauterine and postnatal growth deficiency, a distinctive pattern of physical malformation, and behavioral/cognitive impairment such as fine motor dysfunction and mental retardation. Not all affected children have all of the features of the syndrome. This syndrome has been associated with alcoholic women who drank heavily and chronically during pregnancy

Mutagenicity: No data available.

Neurotoxicity: No data available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: LC50 = 12900-15300 mg/L; 96 Hr; Flow-through @ 24-24.3°C Fish: Rainbow trout: LC50 = 11200 mg/L; 24 Hr; Fingerling (Unspecified) Bacteria: Phytobacterium phosphoreum: EC50 = 34900 mg/L; 5-30 min; Microtox test 250 ppm/6hr/goldfish/lethal/fresh water

Environmental: Ethanol: In water, will volatilize and probably degrade.

Physical: No information available.

Other: Not expected to bioconcentrate in fish.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series:

CAS# 67-56-1: waste number U154 (Ignitable waste).
 CAS# 108-10-1: waste number U161 (Ignitable waste).
 CAS# 141-78-6: waste number U112 (Ignitable waste).
 CAS# 108-88-3: waste

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	ETHANOL	ETHANOL
Hazard Class:	3	3(6.1)
UN Number:	UN1170	UN1170
Packing Group:	II	II

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 64-17-5 is listed on the TSCA inventory.
CAS# 7732-18-5 is listed on the TSCA inventory.
CAS# 67-56-1 is listed on the TSCA inventory.
CAS# 108-10-1 is listed on the TSCA inventory.
CAS# 141-78-6 is listed on the TSCA inventory.
CAS# 308082-09-9 is not listed on the TSCA inventory. It is for research and development use only.
CAS# 108-88-3 is listed on the TSCA inventory.
CAS# 64742-89-8 is listed on the TSCA inventory.
CAS# 67-63-0 is listed on the TSCA inventory.
CAS# 75-07-0 is listed on the TSCA inventory.
CAS# 67-64-1 is listed on the TSCA inventory.
CAS# 71-43-2 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 108-10-1: Effective 10/4/82, Sunset 10/4/92 CAS# 108-88-3: Effective 10/4/82, Sunset 10/4/92 CAS# 67-63-0: Effective 12/15/86, Sunset 12/15/96

Chemical Test Rules

CAS# 108-10-1: Test for Health Effects CAS# 141-78-6: Test for Health Effects CAS# 67-64-1: Test for Health Effects

Section 12b

CAS# 108-10-1: Section 4 (applies only to those companies that signed an Enforceable Consent Agreement)

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ CAS# 108-10-1: 5000 lb final RQ; 2270 kg final RQ CAS# 141-78-6: 5000 lb final RQ; 2270 kg final RQ
CAS# 108-88-3: 1000 lb final RQ; 454 kg final RQ CAS# 75-07-0: 1000 lb final RQ; 454 kg final RQ
CAS# 67-64-1: 5000 lb final RQ; 2270 kg final RQ CAS# 71-43-2: 10 lb final RQ (receives an adjustable RQ of 10 lbs based on potential carcinogen)

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 64-17-5: immediate, delayed, fire.
CAS # 67-56-1: immediate, fire.
CAS # 108-10-1: immediate, delayed, fire, reactive.
CAS # 141-78-6: fire.
CAS # 108-88-3: immediate, fire.
CAS # 64742-89-8: immediate, fire.
CAS # 67-63-0: immediate, delayed, fire.
CAS # 75-07-0: immediate, delayed, fire, reactive.
CAS # 67-64-1: immediate, fire.
CAS # 71-43-2: immediate, delayed, fire.

Section 313

This material contains Methyl alcohol (CAS# 67-56-1, 3.6%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

This material contains Methyl isobutyl ketone (CAS# 108-10-1, 1.9%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

Toluene is not at a high enough concentration to be reportable under Section 313.

Isopropyl alcohol is not at a high enough concentration to be reportable under Section 313.

Acetaldehyde is not at a high enough concentration to be reportable under Section 313.

This material contains Benzene (CAS# 71-43-2, trace%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 67-56-1 is listed as a hazardous air pollutant (HAP).

CAS# 108-10-1 is listed as a hazardous air pollutant (HAP).

CAS# 108-88-3 is listed as a hazardous air pollutant (HAP).

CAS# 75-07-0 is listed as a hazardous air pollutant (HAP).

CAS# 71-43-2 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 108-88-3 is listed as a Hazardous Substance under the CWA. CAS# 75-07-0 is listed as a Hazardous Substance under the CWA.

CAS# 71-43-2 is listed as a Hazardous Substance under the CWA. CAS# 108-88-3 is listed as a Priority Pollutant under the Clean Water Act.

CAS# 71-43-2 is listed as a Priority Pollutant under the Clean Water Act. CAS# 108-88-3 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

CAS# 75-07-0 is considered highly hazardous by OSHA.

STATE

CAS# 64-17-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

CAS# 67-56-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 108-10-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota,

Massachusetts.

CAS# 141-78-6 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 308082-09-9 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

CAS# 108-88-3 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 64742-89-8 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

CAS# 67-63-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 75-07-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 67-64-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

CAS# 71-43-2 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

WARNING: This product contains Acetaldehyde, a chemical known to the state of California to cause cancer. WARNING: This product contains Benzene, a chemical known to the state of California to cause cancer. WARNING: This product contains Benzene, a chemical known to the state of California to cause male reproductive toxicity.

California No Significant Risk Level: CAS# 75-07-0: 90 $\mu\text{g}/\text{day}$ NSRL (inhalation) CAS# 71-43-2: 6.4 $\mu\text{g}/\text{day}$ NSRL (oral); 13 $\mu\text{g}/\text{day}$ NSRL (inhalation)

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

F

Risk Phrases:

R 11 Highly flammable.

Safety Phrases:

- S 16 Keep away from sources of ignition - No smoking.
- S 33 Take precautionary measures against static discharges.
- S 7 Keep container tightly closed.
- S 9 Keep container in a well-ventilated place.

WGK (Water Danger/Protection)

- CAS# 64-17-5: 0
- CAS# 7732-18-5: No information available.
- CAS# 67-56-1: 1
- CAS# 108-10-1: 1
- CAS# 141-78-6: 1
- CAS# 308082-09-9: No information available.
- CAS# 108-88-3: 2
- CAS# 64742-89-8: No information available.
- CAS# 67-63-0: 1
- CAS# 75-07-0: 1
- CAS# 67-64-1: 0
- CAS# 71-43-2: 3

Canada - DSL/NDSL

- CAS# 64-17-5 is listed on Canada's DSL List.
- CAS# 7732-18-5 is listed on Canada's DSL List.
- CAS# 67-56-1 is listed on Canada's DSL List.
- CAS# 108-10-1 is listed on Canada's DSL List.
- CAS# 141-78-6 is listed on Canada's DSL List.
- CAS# 108-88-3 is listed on Canada's DSL List.
- CAS# 64742-89-8 is listed on Canada's DSL List.
- CAS# 67-63-0 is listed on Canada's DSL List.
- CAS# 75-07-0 is listed on Canada's DSL List.
- CAS# 67-64-1 is listed on Canada's DSL List.
- CAS# 71-43-2 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D1A, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

- CAS# 64-17-5 is listed on the Canadian Ingredient Disclosure List.
- CAS# 67-56-1 is listed on the Canadian Ingredient Disclosure List.
- CAS# 108-10-1 is listed on the Canadian Ingredient Disclosure List.
- CAS# 141-78-6 is listed on the Canadian Ingredient Disclosure List.
- CAS# 108-88-3 is listed on the Canadian Ingredient Disclosure List.
- CAS# 67-63-0 is listed on the Canadian Ingredient Disclosure List.
- CAS# 75-07-0 is listed on the Canadian Ingredient Disclosure List.
- CAS# 67-64-1 is listed on the Canadian Ingredient Disclosure List.
- CAS# 71-43-2 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 10/12/1998

Revision #6 Date: 6/13/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any

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