

**Material Safety Data Sheet**  
**Clarifier I**

**Section 1 - Chemical Product and Company Identification**

**MSDS Name:**

Clarifier I

**Catalog Numbers:**

220-107, 7401, 7441, 7441E

**Synonyms:**

None Known.

**Company Identification:**

Richard Allan Scientific  
4481 Campus Drive  
Kalamazoo, MI 49008

**Company Phone Number:**

800-522-7270

**Emergency Phone Number:**

800-424-9300

**CHEMTREC Phone Number, US:**

(800) 424-9300

**CHEMTREC Phone Number, Europe:**

(202) 483-7616

**Section 2 - Composition, Information on Ingredients**

CAS#	Chemical Name:	Percent	EINECS/ ELINCS	Hazard Symbols	Risk Phrases
64-17-5	Ethyl alcohol	70-76	200-578-6	F	11
7732-18-5	Water	5-10	231-791-2		
64-19-7	Acetic acid	5-9.9	200-580-7		
67-56-1	Methyl alcohol	4-5	200-659-6	F T	11 23/24/25 39/23/24/25
67-63-0	Isopropyl alcohol	4-5	200-661-7	F XI	11 36 67

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**Section 3 - Hazards Identification**

**EMERGENCY OVERVIEW**

*Appearance: Clear, colorless liquid*

*Danger! Poison! Causes severe eye irritation. Vapor harmful. Causes respiratory tract irritation. Flammable liquid and vapor. May be fatal or cause blindness if swallowed. This substance has caused adverse reproductive and fetal effects in humans. May be absorbed through intact skin. May cause central nervous system depression. May form explosive peroxides. May cause liver, kidney and heart damage. Cannot be made non-poisonous. Causes moderate skin irritation. Flash Point: 69°F.*

*Target Organs: Kidneys, Heart, Central nervous system, Liver, Gastrointestinal system, Cardiovascular system, Eyes*

**Potential Health Effects**

**Eye:**

Causes severe eye irritation. May cause painful sensitization to light. May cause chemical conjunctivitis and corneal damage.

**Skin:**

Causes moderate skin irritation. May be absorbed through the skin. May cause cyanosis of the extremities.

**Ingestion:**

May be fatal or cause blindness if swallowed. May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause systemic toxicity with acidosis. 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:**

Causes respiratory tract irritation. May cause visual impairment and possible permanent blindness. May cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation.

**Chronic:**

Prolonged or repeated skin contact may cause defatting and dermatitis. May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects. Animal studies have reported the development of tumors. Prolonged exposure may cause liver, kidney, and heart damage.

**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. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

**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.

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**Inhalation:**

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

**Notes to Physician:**

Effects may be delayed. Ethanol may inhibit methanol metabolism. Treat symptomatically and supportively. Persons with skin or eye disorders or liver, kidney, chronic respiratory diseases, or central and peripheral nervous system diseases may be at increased risk from exposure to this substance.

**Antidote:**

Ethanol may inhibit methanol metabolism.

**Section 5 - Fire Fighting Measures**

**General Information:**

Ethanol may inhibit methanol metabolism. 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. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. May form explosive peroxides. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Will be easily ignited by heat, sparks or flame.

**Extinguishing Media:**

For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, 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.

**Autoignition Temperature:**

Not applicable.

**Explosion Limits:**

Lower: Not available      Upper: Not available

**Flash Point:**

69°F ( 20.56°C)

**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. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

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**Section 7 - Handling and Storage**

**Handling:**

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. 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. Do not ingest or inhale. 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. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Do not store near perchlorates, peroxides, chromic acid or nitric acid.

**Section 8 - Exposure Controls, Personal Protection**

**Engineering Controls:**

Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use only under a chemical fume hood.

**Exposure Limits**

Chemical Name:	ACGIH	NIOSH	OSHA
Ethyl alcohol	1000 ppm TWA	1000 ppm TWA; 1900 mg/m3 TWA 3300 ppm IDLH	1000 ppm TWA; 1900 mg/m3 TWA;
Water	None listed	None listed	None listed
Acetic acid	10 ppm TWA;15 ppm STEL	10 ppm TWA; 25 mg/m3 TWA 50 ppm IDLH	10 ppm TWA; 25 mg/m3 TWA;
Methyl alcohol	200 ppm TWA;250 ppm STEL;Skin - potential significant contribution to overall exposure by the cutaneous route	200 ppm TWA; 260 mg/m3 TWA 6000 ppm IDLH	200 ppm TWA; 260 mg/m3 TWA;
Isopropyl alcohol	200 ppm TWA;400 ppm STEL	400 ppm TWA; 980 mg/m3 TWA 2000 ppm IDLH	400 ppm TWA; 980 mg/m3 TWA;

**OSHA Vacated PELs**

Ethyl alcohol: 1000 ppm TWA; 1900 mg/m3 TWA  
Acetic acid: 10 ppm TWA; 25 mg/m3 TWA  
Methyl alcohol: 200 ppm TWA; 260 mg/m3 TWA  
Isopropyl alcohol: 400 ppm TWA; 980 mg/m3 TWA

**Personal Protective Equipment**

**Eyes:**

Wear chemical splash goggles.

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**Skin:**

Wear appropriate protective gloves to prevent skin exposure.

**Clothing:**

Wear appropriate protective clothing to prevent skin exposure.

**Respirators:**

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

**Section 9 - Physical and Chemical Properties**

**Physical State:** Liquid

**Color:** Clear, colorless

**Odor:** Aromatic odor

**pH:** No data

**Vapor Pressure:** No information found

**Vapor Density:** No information found

**Evaporation Rate:** No data

**Viscosity:** No information found

**Boiling Point:** No information found

**Freezing/Melting Point:** No information found

**Decomposition Temperature:** No information found

**Solubility in water:** Soluble.

**Specific Gravity/Density:** No information found

**Molecular Formula:** Solution

**Molecular Weight:** No information found

**Section 10 - Stability and Reactivity**

**Chemical Stability:**

Stability unknown. This material may be sensitive to peroxide formation.

**Conditions to Avoid:**

Ignition sources, excess heat

**Incompatibilities with Other Materials**

Strong oxidizing agents, strong acids, acid chlorides, active metals, alkali metals, aluminum, ammonia, halogens, hydrazine, nitric acid, peroxides, isocyanates, aliphatic amines, sodium, caustics (e.g. ammonia, ammonium hydroxide, calcium hydroxide, potassium hydroxide, sodium hydroxide), acid anhydrides, calcium hypochlorite, cyanuric chloride, chromyl chloride, nitrosyl perchlorate, diethyl zinc, bromine pentafluoride, perchloric acid, silver nitrate, chromic anhydride, mercuric nitrate, phosphorus trioxide, potassium tert-butoxide, magnesium perchlorate, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, Oxidants (such as barium perchlorate, bromine, chlorine, hydrogen peroxide, lead perchlorate, perchloric acid, sodium hypochlorite), acetyl bromide, alkyl aluminum salts, beryllium dihydride, Attacks some forms of plastics, rubbers, and coatings., acetyl chloride, disulfur dichloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, potassium dioxide

**Hazardous Decomposition Products**

Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide

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**Hazardous Polymerization**

Has not been reported.

**Section 11 - Toxicological Information**

**RTECS:**

CAS# 64-17-5: KQ6300000  
CAS# 7732-18-5: ZC0110000  
CAS# 64-19-7: AF1225000  
CAS# 67-56-1: PC1400000  
CAS# 67-63-0: NT8050000

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**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/m<sup>3</sup>/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# 64-19-7:

Draize test, rabbit, skin: 50 mg/24H Mild  
Inhalation, mouse: LC50 = 5620 ppm/1H  
Oral, rat: LD50 = 3310 mg/kg  
Skin, rabbit: LD50 = 1060 uL/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/m<sup>3</sup>/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# 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/m<sup>3</sup>  
Inhalation, rat: LC50 = 16000 ppm/8H  
Inhalation, rat: LC50 = 72600 mg/m<sup>3</sup>  
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 mg/kg.

**Carcinogenicity:**

CAS# 64-17-5: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
CAS# 7732-18-5: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
CAS# 64-19-7: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
CAS# 67-56-1: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.  
CAS# 67-63-0: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

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**Epidemiology:**

Methanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Specific developmental abnormalities include cardiovascular, musculoskeletal, and urogenital systems. Ethanol has been shown to produce fetotoxicity in the embryo or fetus of laboratory animals. Prenatal exposure to ethanol is associated with a distinct pattern of congenital malformations that have collectively been termed the "fetal alcohol syndrome". Methanol and phenol have been shown to produce fetotoxicity in the embryo or fetus in laboratory animals. Specific developmental abnormalities for methanol include the musculoskeletal, urogenital, and cardiovascular systems.

**Teratogenicity:**

CAS# 64-17-5: Oral, Human - woman: TDLo = 41 gm/kg (female 41 week(s) after conception) Effects on Newborn - Apgar score (human only) and Effects on Newborn - other neonatal measures or effects and Effects on Newborn - drug dependence.

**Reproductive:**

CAS# 64-17-5: Intrauterine, Human - woman: TDLo = 200 mg/kg (female 5 day(s) pre-mating) Fertility - female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated).

**Mutagenicity:**

CAS# 64-17-5: DNA Inhibition: Human, Lymphocyte = 220 mmol/L.; Cytogenetic Analysis: Human, Lymphocyte = 1160 gm/L.; Cytogenetic Analysis: Human, Fibroblast = 12000 ppm.; Cytogenetic Analysis: Human, Leukocyte = 1 pph/72H (Continuous).; Sister Chromatid Exchange: Human, Lymphocyte = 500 ppm/72H (Continuous).

**Neurotoxicity:**

No information found

**Other:**

Standard Draize Test(Skin, rabbit) = 20 mg/24H (Moderate) Standard Draize Test: Administration into the eye (rabbit) = 500 mg (Severe). The hazards associated with methanol may be seen in this product.

**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

CAS# 64-17-5: When spilled on land it is apt to volatilize, biodegrade, and leach into the ground water, but no data on the rates of these processes could be found. Its fate in ground water is unknown. When released into water it will volatilize and probably biodegrade. It would not be expected to adsorb to sediment or bioconcentrate in fish.

**Environmental:**

CAS# 64-17-5: When released to the atmosphere it will photodegrade in hours (polluted urban atmosphere) to an estimated range of 4 to 6 days in less polluted areas. Rainout should be significant.

**Physical:**

No information found

**Other:**

No information found

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**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 Part 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

**RCRA P Series Wastes**

None of the components are on this list.

**RCRA U Series Wastes**

CAS# 67-56-1: waste number U154 (Ignitable waste).

**Section 14 - Transport Information**

US DOT	Canadian TDG
<p><b>Proper Shipping Name:</b> FLAMMABLE LIQUIDS, N.O.S. (ETHANOL, METHANOL, METHYL ISOBUTYL)</p> <p><b>Hazard Class:</b> 3</p> <p><b>UN Number:</b> UN1993</p> <p><b>Packing Group:</b> II</p> <p><b>Additional Info:</b></p>	<p>FLAMMABLE LIQUIDS, N.O.S.</p> <p>3</p> <p>UN1993</p> <p>II</p> <p>(ETHANOL, METHANOL, METHYL ISOBUTYL)</p>

USA RQ: CAS# 64-19-7: 5000 lb final RQ; 2270 kg final RQ

USA RQ: CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

**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# 64-19-7 is listed on the TSCA Inventory.
- CAS# 67-56-1 is listed on the TSCA Inventory.
- CAS# 67-63-0 is listed on the TSCA Inventory.

**Health and Safety Reporting List**

CAS# 67-63-0: Effective 12/15/86, Sunset 12/15/96

**Chemical Test Rules**

CAS# 67-63-0: 40 CFR 799.2325

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**TSCA Section 12b**

None of the components are on this list.

**TSCA Significant New Use Rule (SNUR)**

None of the components are on this list.

**CERCLA Hazardous Substances and corresponding RQs**

CAS# 64-19-7: 5000 lb final RQ; 2270 kg final RQ

CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

**SARA Section 302 Extremely Hazardous Substances**

None of the components are on this list.

**SARA Hazard Categories**

CAS# 64-17-5: immediate, delayed, fire.

CAS# 64-19-7: immediate, delayed, fire.

CAS# 67-56-1: immediate, fire.

CAS# 67-63-0: immediate, delayed, fire.

**SARA Section 313**

This material contains Methyl alcohol (CAS# 67-56-1, 4-5%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

This material contains Isopropyl alcohol (CAS# 67-63-0, 4-5%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

**Clean Air Act - Hazardous Air Pollutants (HAPs)**

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

**Clean Air Act - Class 1 Ozone Depletors**

None of the components are on this list.

**Clean Air Act - Class 2 Ozone Depletors**

None of the components are on this list.

**Clean Water Act - Hazardous Substances**

CAS# 64-19-7 is listed as a Hazardous Substance under the CWA.

**Clean Water Act - Priority Pollutants**

None of the components are on this list.

**Clean Water Act - Toxic Pollutants**

None of the components are on this list.

**OSHA - Highly Hazardous**

None of the components are on this list.

**OSHA - Specifically Regulated Chemicals**

None of the components are on this list.

**US State**

**State Right to Know**

Ethyl alcohol can be found on the following state Right-to-Know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

Acetic acid can be found on the following state Right-to-Know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

Methyl alcohol can be found on the following state Right-to-Know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

Isopropyl alcohol can be found on the following state Right-to-Know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

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**California Prop 65**

None of the components are on this list.

**California No Significant Risk Level**

None of the components are on this list.  
None of the components are on this list.  
None of the components are on this list.  
None of the components are on this list.  
None of the components are on this list.

**European/International Regulations**

**European Labelling in Accordance with EC Directives:**

Hazard Symbols: F XN

Risk Phrases: R 11 Highly flammable.

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 68/20/21/22 Harmful : possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

Safety Phrases: S 7 Keep container tightly closed.

S 16 Keep away from sources of ignition - No smoking.

S 36/37 Wear suitable protective clothing and gloves.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**WGK (Water Danger/Protection)**

No information found

**United Kingdom Occupational Exposure Limits**

No information found

**United Kingdom Maximum Exposure Limits**

No information found

**Canadian 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# 64-19-7 is listed on Canada's DSL List.

CAS# 67-56-1 is listed on Canada's DSL List.

CAS# 67-63-0 is listed on Canada's DSL List.

**Canadian WHMIS Classifications**

This product has a WHMIS classification of B2, D1B, D2A, 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# 64-19-7 is listed on the Canadian Ingredient Disclosure List.

CAS# 67-56-1 is listed on the Canadian Ingredient Disclosure List.

CAS# 67-63-0 is listed on the Canadian Ingredient Disclosure List.

**Section 16 - Other Information**

No information found

MSDS Creation Date: July 6, 2006

Revision Date: September 25, 2008

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**Revisions were made in Sections:**

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*This MSDS is intended for review and guidance in the receipt, storage, handling, use and disposal of product purchased from us, and for no other purpose. Use this product only as directed and in accordance with applicable instructions and warnings provided with the product. Please consult your institution's policies regarding use of this product. If you have obtained this MSDS other than in connection with the supply of this product from us, this MSDS should be consulted for general information only, and should not be relied upon for any purpose. As with the use of all hazardous materials, you should in all instances follow the guidance of the MSDS provided or available with the specific product purchased.*