Safety Data Sheet

File version: 1

# Reagent alcohol, 100%(v/v)

SDS Date: 27 Nov 2016

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** 100%(v/v) Reagent alcohol
**SYNONYMS:** Ethyl alcohol, Ethanol
**PRODUCT CODES:** 1008428
1008429
**MANUFACTURER:** Rigaku Reagents
**ADDRESS:** 9009 New Trails Drive
The Woodlands, TX 77381
USA
**PHONE:** +1 (281) 362-2300
**EMAIL:** ReagentOrders@Rigaku.com

**CHEMICAL NAME:** Reagent alcohol
**CHEMICAL FAMILY:** Alcohol
**CHEMICAL FORMULA:** $CH_3CH_2OH$

**PREPARED BY:** Rigaku Reagents

**SECTION 1 NOTES:**

## SECTION 2: HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:**

**OSHA HAZARDS:** Flammable liquid, target organ effect, toxic by inhalation., toxic by ingestion, toxic by skin absorption, irritant, carcinogen

**TARGET ORGANS:** Nerves, liver, heart, eyes, kidney, central nervous system, cardiovascular system, gastrointestinal tract

**GHS CLASSIFICATION**

Flammable liquids (Category 2)
Acute toxicity, oral (Category 4)
Skin irritation (Category 2)
Eye irritation (Category 2B)
Specific target organ toxicity - single exposure (Category 1)
Specific target organ toxicity - single exposure (Category 3)

**GHS LABEL ELEMENTS, INCLUDING PRECAUTIONARY STATEMENTS**

**Signal word:** Danger

**Hazard statement(s):**

H225 Highly flammable liquid and vapor.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H370 Causes damage to organs.

**Precautionary statement(s):**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307 + P311 IF exposed: Call a POISON CENTER or doctor/ physician.

**POTENTIAL HEALTH EFFECTS**

**EYES:** Causes eye irritation.

**SKIN:** Toxic if absorbed through skin. Causes skin irritation.

**INGESTION:** Toxic if swallowed.

**INHALATION:** Toxic if inhaled. Causes respiratory tract irritation.

**SECTION 2 NOTES:**

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

**INGREDIENTS:** Reagent alcohol

**ETHANOL:**

| CAS NO. | % WT | % VOL |
|---|---|---|
| 64-17-5 | | < 100% |

| | ppm | mg/m3 |
|---|---|---|
| OSHA PEL-TWA: | 1000 | 1900 |
| OSHA PEL STEL : | | |
| ACGIH TLV-TWA: | 1000 | 1900 |
| ACGIH TLV STEL: | | |

**METHANOL:**

| CAS NO. | % WT | % VOL |
|---|---|---|
| 64-56-1 | | 5-10% |

| | ppm | mg/m3 |
|---|---|---|
| OSHA PEL-TWA: | 200 | 260 |
| OSHA PEL STEL : | 250 | 325 |
| ACGIH TLV-TWA: | 200 | |
| ACGIH TLV STEL: | 250 | |

**ISOPROPANOL:**

| CAS NO. | % WT | % VOL |
|---|---|---|
| 67-63-0 | | 5-10% |

| | ppm | mg/m3 |
|---|---|---|
| OSHA PEL-TWA: | 400 | 980 |
| OSHA PEL STEL : | 500 | 1225 |
| ACGIH TLV-TWA: | 200 | |
| ACGIH TLV STEL: | 400 | |

**SECTION 3 NOTES:**

## SECTION 4: FIRST AID MEASURES

**EYES:** Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**SKIN:** Wash off with soap and plenty of water. Consult a physician.

**INGESTION:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

**INHALATION:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

**NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:** 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.

**SECTION 4 NOTES:**

## SECTION 5: FIRE-FIGHTING MEASURES

**FLASH POINT:**
**F:** 61.9°
**C:** 16.6°

**AUTOIGNITION TEMPERATURE:**
**F:** 685.4°
**C:** 363.0°

**NFPA HAZARD CLASSIFICATION**
**HEALTH: 2** **FLAMMABILITY: 3** **REACTIVITY: 0**

**HMIS HAZARD CLASSIFICATION**
**HEALTH: 2** **FLAMMABILITY: 3** **REACTIVITY: 0**

**EXTINGUISHING MEDIA:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**SPECIAL FIRE FIGHTING PROCEDURES:** 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.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Hazardous decomposition products formed under fire conditions. - Carbon oxides

**SECTION 5 NOTES:** Use water spray to cool unopened containers.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS:** Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

**ENVIRONMENTAL PRECAUTIONS:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:** Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations

**SECTION 6 NOTES:**

## SECTION 7: HANDLING AND STORAGE

**HANDLING AND STORAGE:** Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**SECTION 7 NOTES:** Handle and store under inert gas. Hygroscopic.

## 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.

**RESPIRATORY PROTECTION:** Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**EYE PROTECTION:** Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**SKIN PROTECTION:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Wear complete suit protecting against chemicals, flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**OTHER PROTECTIVE CLOTHING OR EQUIPMENT:** Impervious clothing, flame retardant antistatic protective clothing, the type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**WORK HYGIENIC PRACTICES:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**SECTION 8 NOTES:**

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE:** clear, colorless

**PHYSICAL STATE:** liquid, clear

**pH AS SUPPLIED:** no data available
**pH (Other):** no data available
**BOILING POINT:**
**F:** 172.4 - 176.0°
**C:** 78.0-80.0°

**FREEZING POINT:**
**F:** -227.2°
**C:** -144.0°
**VAPOR PRESSURE (mmHg):** 44.6
@
**F:** 68.0°
**C:** 20.0°
**VAPOR DENSITY (AIR = 1):** 1.59

**SPECIFIC GRAVITY (H2O = 1):** 0.790
@
**F:** 68.0°
**C:** 20.0°
**EVAPORATION RATE:** no data available

**SOLUBILITY IN WATER:** completely soluble

**PERCENT SOLIDS BY WEIGHT:** not applicable

**MOLECULAR WEIGHT:** 46.07 g $mol^{-1}$
**VISCOSITY:** 0.0012 Pa s
@
**F:** 68 °
**C:** 20°

**SECTION 9 NOTES:**

## SECTION 10: STABILITY AND REACTIVITY

**STABILITY:** Stable under recommended storage conditions.

**CONDITIONS TO AVOID (STABILITY):** Heat, flames and sparks. Extremes of temperature and direct sunlight.

**INCOMPATIBILITY (MATERIAL TO AVOID):** Aluminum, acids, oxidizing agents, alkali metals, halogenated compounds, ammonia, acid chlorides, acid anhydrides, reducing agents, peroxides

**HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:** Other decomposition products - no data available; Hazardous decomposition products formed under fire conditions. - Carbon oxides

**SECTION 10 NOTES:**

## SECTION 11: TOXICOLOGICAL INFORMATION

**ACUTE TOXICITY**

**ORAL LD50:** No data available
**INHALATION LC50:** No data available
**DERMAL LD50:** No data available

**SKIN CORROSION/IRRITATION:** No data available

**SERIOUS EYE DAMAGE/EYE IRRITATION:** No data available

**RESPIRATORY OR SKIN SENSITIZATION:** No data available

**GERM CELL MUTAGENICITY:** No data available

**CARCINOGENICITY:**

**IARC:** 3 - Group 3: Not classifiable as to its carcinogenicity to humans (2-Propanol)
**NTP:** No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
**OSHA:** No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**REPRODUCTIVE TOXICITY:** No data available

**SECTION 11 NOTES:**

## SECTION 12: ECOLOGICAL INFORMATION

**TOXICITY**
No data available

**PERSISTENCE AND DEGRADABILITY**
No data available

**BIOACCUMULATIVE POTENTIAL**
No data available

**MOBILITY IN SOIL**
No data available

**PBT AND vPvB ASSESSMENT**
No data available

**SECTION 12 NOTES:**

## SECTION 13: DISPOSAL CONSIDERATIONS

**PRODUCT:** Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**CONTAMINATED PACKAGING:** Dispose of as unused product.

## SECTION 14: TRANSPORT INFORMATION

**U.S. DEPARTMENT OF TRANSPORTATION**

| | |
|---|---|
| **PROPER SHIPPING NAME:** | Ethanol solution |
| **HAZARD CLASS:** | 3 |
| **ID NUMBER:** | 1170 |
| **PACKING GROUP:** | II |
| **MARINE POLLUTANT:** | No |
| **POISON INHALATION HAZARD:** | No |

**WATER TRANSPORTATION**

| | |
|---|---|
| **PROPER SHIPPING NAME:** | ETHANOL SOLUTION |
| **HAZARD CLASS:** | 3 |
| **ID NUMBER:** | 1170 |
| **PACKING GROUP:** | II EMS-No: F-E, S-D |
| **MARINE POLLUTANT:** | No |

**AIR TRANSPORTATION**

| | |
|---|---|
| **PROPER SHIPPING NAME:** | Ethanol solution |
| **HAZARD CLASS:** | 3 |
| **ID NUMBER:** | 1170 |
| **PACKING GROUP:** | II |

**SECTION 14 NOTES:**

## SECTION 15: REGULATORY INFORMATION

**OSHA HAZARDS:** Flammable liquid, target organ effect, toxic by inhalation., toxic by ingestion, toxic by skin absorption, irritant, carcinogen

**SARA 302 COMPONENTS:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 COMPONENTS:** The following components are subject to reporting levels established by SARA Title III, Section 313:

| | |
|---|---|
| Methanol | CAS-No. 67-56-1 |
| 2-Propanol | CAS-No. 67-63-0 |

**SARA 311/312 HAZARDS:** Fire hazard, acute health hazard, chronic health hazard

**MASSACHUSETTS RIGHT TO KNOW COMPONENTS:**

| | **CAS-No.** |
|---|---|
| Methanol | 67-56-1 |
| Ethanol | 64-17-5 |
| 2-Propanol | 67-63-0 |

**PENNSYLVANIA RIGHT TO KNOW COMPONENTS:**

| | **CAS-No.** |
|---|---|
| Methanol | 67-56-1 |
| Ethanol | 64-17-5 |
| 2-Propanol | 67-63-0 |

**NEW JERSEY RIGHT TO KNOW COMPONENTS:**

| | **CAS-No.** |
|---|---|
| Methanol | 67-56-1 |
| Ethanol | 64-17-5 |
| 2-Propanol | 67-63-0 |

**CALIFORNIA PROP. 65 COMPONENTS:** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**SECTION 15 NOTES:**

## SECTION 16: OTHER INFORMATION

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**DISCLAIMER:** The above information is believed to be correct but does not necessarily include all information and should be used only as a guide. The information in this document is based on our current knowledge and applies to the product with regard to appropriate safety precautions. This document does not represent any guarantee of the properties of the product. Rigaku Reagents will not be held liable for any damage resulting from handling or contact with the above product.