RANKIN

# SAFETY DATA SHEET

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** 100% Reagent Alcohol
**SYNONYMS:** 100% RGA, Denatured Ethanol, Anhydrous Ethanol
**PRODUCT CODES:** 6200-4X1

**MANUFACTURER:** Rankin Biomedical
**ADDRESS:** 10399 Enterprise Dr. Davisburg, MI 48350
**CHEMTREC PHONE:** 800-424-9300

**SUPPORT:** 877-882-3679
**PRODUCT USE:** General purpose organic solvent, dehydrant, R&D, laboratory uses only
**PREPARED BY:** SB
**SECTION 1 NOTES:**

## SECTION 2: HAZARDS IDENTIFICATION

**GHS CLASSIFICATION:** Flammable liquid Category 2, Skin Corrosion/Irritation Category 2; Serious eye damage/irritation Category 2A; Acute Toxicity, Oral Category 4; Specific Target Organ Toxicity – single exposure (CNS, optic nerve, respiratory system) Category 1

***Signal Word:*** Danger!

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

| PRECAUTIONARY PHRASES | |
|---|---|
| P210 | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |
| P260 | Avoid breathing dust/fume/gas/mist/vapors/spray. |
| P280 | Wear protective gloves/ eye protection/ face protection. |
| P264 | Wash hands thoroughly after handling. |
| P302+P352 | IF ON SKIN: Wash with plenty of soap and water. |
| P301+P312 | IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell |
| P305+P351+P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |

**SECTION 2 NOTES:**

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| INGREDIENT: | CAS NO. | % VOL |
|---|---|---|
| Ethyl Alcohol | 64-17-5 | 89.5-91.5 |
| Isopropyl Alcohol | 67-63-0 | 4.5-5.5 |
| Methyl Alcohol | 67-56-1 | 4.0-5.0 |

**SECTION 3 NOTES:**

## SECTION 4: FIRST AID MEASURES

**EYES:** Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if irritation persists.

**SKIN:** In case of contact, flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If skin irritation occurs: Get medical attention/advice.

**INGESTION:** Call medical doctor or poison control center immediately. Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

**INHALATION:** Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if you feel unwell.

**SECTION 4 NOTES:**
Note to Physician: Symptoms will vary with alcohol level of blood. Mild alcohol intoxication occurs at blood levels between 0.05- 0.15%. Approximately 25% of individuals show signs of intoxication at these levels. Above .015% the person is definitely under the influence of ethanol; 50-95% of individuals are clinically intoxicated at these levels. Above 0.5% the individual will be comatose and death can occur. The unabsorbed ethanol should be removed by gastric lavage after intubating the patient to prevent aspiration. Avoid the use of depressant drugs and administering excessive amounts of fluids.

## SECTION 5: FIRE-FIGHTING MEASURES

**FLAMMABILITY OF THE PRODUCT:** OSHA/NFPA Class IB Flammable Liquid
**FLASH POINT:** 14°C (57°F) – closed cup
**AUTOIGNITION TEMPERATURE:** 363°C (685°F) – (100% Ethyl Alcohol)

**NFPA HAZARD CLASSIFICATION**

**HEALTH:2 FLAMMABILITY: 3 REACTIVITY: 0**
**OTHER:**

**HMIS HAZARD CLASSIFICATION**

**HEALTH:2 FLAMMABILITY: 3 REACTIVITY: 0**
**PROTECTION:**

**EXTINGUISHING MEDIA:** Small fire – use DRY chemical powder, CO2, water spray or alcohol-resistant foam. Large fire – use alcohol-resistant foam, water spray or fog. Cool all affected containers with flooding quantities of water.
**NOT SUITABLE:** Do not use water jet.
**SPECIAL FIRE FIGHTING PROCEDURES:** Wear self-contained breathing apparatus and protective clothing to protect contact with skin and eyes. Keep unopened containers cool by spraying with water. Alcohols burn with a pale blue flame which may be difficult to see under normal lighting conditions. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon monoxide, carbon dioxide
**UNUSUAL FIRE AND EXPLOSION HAZARDS:** May produce a floating fire hazard. Vapors may travel to source of ignition and flash back. Vapors may settle on low or confined spaces.

**SECTION 5 NOTES:** Static ignition hazard can result from handling and use. Keep away from sparking tools.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**ACCIDENTAL RELEASE MEASURES:**
Small spill and leak: Ensure adequate ventilation. Remove all sources of ignition. Dilute with water and mop, or absorb with an inert dry material and place in appropriate waste disposal container. Large spill and leak: Keep away from heat and ignition sources. Stop leak if without risk. Absorb with DRY earth, sand, or other non-combustible material. Avoid skin and eye contact. Prevent entry into sewers, basements or confined areas; dike if needed. Additional protective equipment such as full-face respirator, full body suit and boots may be required.
**SECTION 6 NOTES:**

## SECTION 7: HANDLING AND STORAGE

HANDLING: Do not get in eyes or on skin. Do not breathe vapor or mist. If potential for splashing exists, protect skin by using sleeve protectors, aprons and face-shield. Immediately remove contaminated clothing. Wash thoroughly after handling.
STORAGE: Keep away from sources of ignition. Keep containers closed and out of reach of children. Ground all equipment containing material. Containers which are opened must be resealed and kept upright to prevent leakage. Store at room temperature.
**SECTION 7 NOTES:**

## SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

**ENGINEERING CONTROLS:** General mechanical ventilation or laboratory fume hood. Ensure that eyewash stations and quick drench showers are close to the workstation.
**PERSONAL PROTECTIVE MEASURES:** Wear gloves, lab coat, eye protection and impervious footwear. Approved/certified respirator if airborne concentrations exceed exposure limits
**ENVIRONMENTAL EXPOSURE CONTROLS:** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
**WORK HYGIENIC PRACTICES:** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.
**EXPOSURE GUIDELINES:**
**OSHA Permissible Exposure Limits (PELs):**

| Reagent | CAS# | OSHA PEL TWA | Note |
|---|---|---|---|
| Ethyl Alcohol | 64-17-5 | 1000 ppm (1,900 mg/m3) | 29 CFR 1910.1000 Table Z-1 Limits for Air Containments |
| Isopropyl Alcohol | 67-63-0 | 400ppm | |
| Methyl Alcohol | 67-56-1 | 200 ppm (260 mg/m3) | Absorbed through skin |

**ACGIH Threshold Limit values (TLVs):**

| Reagent | CAS# | ACGIH PEL TWA | ACGIH STEL | Note |
|---|---|---|---|---|
| Ethyl Alcohol | 64-17-5 | | 1000 ppm | Upper respiratory tract irritation. Confirmed animal carcinogen with unknown relevance to humans |
| Isopropyl Alcohol | 67-63-0 | 200 ppm | 400 ppm | |
| Methyl Alcohol | 67-56-1 | 200 ppm (260 mg/m3) | 250 ppm (328 mg/m3) | Absorbed through skin |

**SECTION 8 NOTES:**

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE:** Clear **ODOR:** Sweet, alcohol like
**PHYSICAL STATE:** liquid
**pH AS SUPPLIED:** Not available

**BOILING POINT:** 78°C (173°F) (for 100% Ethyl alcohol)
**MELTING POINT/FREEZING POINT:** -114°C (-173°F) (for 100% Ethyl alcohol)

**VAPOR PRESSURE (mmHg):** 44.6 mmHg @ 20°C (for 100% Ethyl alcohol)
**VAPOR DENSITY (AIR = 1):** 1.6 (for 100% Ethyl alcohol)
**EVAPORATION RATE:** Specific data not available, expected to be rapid.

**SOLUBILITY IN WATER:** Soluble in water
**MOLECULAR WEIGHT:** Mixture
**VISCOSITY:** Not established

**SECTION 9 NOTES:**

## SECTION 10: EXPOSURE CONTROL/PERSONAL PROTECTION

**STABILITY:** Product is stable under normal conditions of use.
**CONDITIONS TO AVOID (STABILITY):** Avoid heat, sparks, flames, and all other sources of ignition.
**INCOMPATIBILITY (MATERIAL TO AVOID):** Ammonia, Peroxides, Alkali metals, Reducing agents, Strong inorganic acids, Oxidizing agents
**HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:** Vapors may from explosive mixture with air. Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: oxides of carbon.
**HAZARDOUS POLYMERIZATION:** No hazardous polymerization
**CONDITIONS TO AVOID:** Heat, open flame
**SECTION 10 NOTES:**

## SECTION 11: TOXICOLOGICAL INFORMATION

**ACUTE TOXICITY:**

**Oral:** Methyl Alcohol: LD50 (oral, mouse) = 0.4 g/kg, LD50 (oral, rat) = 6.2-13 g/kg LD50 (oral, rabbit) = 14.4 g/kg
LDlo (Oral, human) 143 mg/kg (Signs and symptoms of dyspnea and GI disturbances such as nausea, vomiting and diarrhea)
Ethyl alcohol: LC50 (Oral, rat) = 7060 mg/kg BWT, LDlo (Oral, human) = 1400mg/kg BWT
Isopropyl alcohol: LD50 (oral, rat)= 5,045 mg/kg

**Inhalation:** Ethyl Alcohol: LC50 (Inhalation, rat) = 20,000 ppm, 10hrs
Methyl Alcohol: LC50 (Inhalation, rat) = 128.2 mg/l 4 hrs; LC50 (Inhalation, rat) = 87.6 mg/l 6 hrs
Isopropyl Alcohol: LC50 (Inhalation, rat) = 87.6 mg/k 8 hrs
**Dermal LD50**: Methyl Alcohol: Rabbit LD50 =17,100 mg/kg
Isopropyl Alcohol: Rabbit LD50 =12,800 mg/kg

**Skin corrosion/irritation:** Ethyl Alcohol: Draize test, rabbit, skin: 20 mg/24H Moderate
**Eyes:** Ethyl alcohol: Draize test, rabbit, eye: 500 mg/24H Reaction - Mild Rabbit, eye: 500 mg Reaction – Severe
Isopropyl Alcohol: Mildly irritating to the eye at airborne concentrations of 400 ppm, unpleasant at 800 ppm.

**Respiratory or skin sensitization: Isopropyl alcohol:** Rabbit = Mild skin irritation
**Germ cell mutagenicity:** No data available

Carcinogenicity:
Ethyl Alcohol: NIOSH: Not classifiable as a human carcinogen ACGIH: Not classifiable as a human carcinogen
NTP: Not classifiable as a human carcinogen IARC: Not classifiable as a human carcinogen
Methyl Alcohol: NIOSH: Not classifiable as a human carcinogen ACGIH: Not classifiable as a human carcinogen
NTP: Not classifiable as a human carcinogen IARC: Not classifiable as a human carcinogen
Isopropyl Alcohol: NIOSH: Not classifiable as a human carcinogen ACGIH: Not classifiable as a human carcinogen
NTP: Not classifiable as a human carcinogen IARC: Not classifiable as a human carcinogen

**Aspiration hazard:** no data available

**POTENTIAL HEALTH EFFECTS**

EYES: Hazardous in case of eye contact. Produces irritation, characterized by a burning sensation, redness, tearing, inflammation. Can cause painful sensitization to light. May cause chemical conjunctivitis or corneal damage.
SKIN: Cause moderate skin irritation. Can cause dermatitis by de-fatting the skin from prolonged or repeated contact. Methyl alcohol can be absorbed through skin and be toxic.
INGESTION: Contains Methyl Alcohol: Toxic. Can be fatal or cause blindness through ingestion. Ingestion may cause gastrointestinal disturbances such as nausea, vomiting and diarrhea. Cannot be made non-poisonous. 100% denatured ethyl alcohol can cause gastrointestinal irritation with nausea, vomiting, and diarrhea. Systemic toxicity and acidosis can occur. Advanced stages can lead to respiratory failure, kidney failure, coma, and death.

INHALATION: Causes respiratory tract irritation. Can cause narcotic effects in high concentration. Vapors may cause dizziness or suffocation. Systemic toxicity and acidosis can occur. Advanced stages can lead to respiratory failure, kidney failure, and death.
CHRONIC HEALTH HAZARDS: Effects may be delayed. Prolonged exposure can cause liver, kidney, and heart damage. Long term exposure can cause loss of appetite, weight loss, nervousness, memory loss, mental retardation. Repeated skin exposure may cause defatting of the skin.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:**
Dermatitis, emphysema, bronchitis and conjunctivitis.
**SIGNS AND SYMPTOMS OF EXPOSURE:** Central nervous system depression, narcosis, damage to heart.
**ROUTES OF ENTRY:** Skin/eye contact, inhalation
**TARGET ORGANS:** Respiratory system

**SECTION 11 NOTES:**

## SECTION 12: ECOLOGICAL INFORMATION

**ECOLOGICAL TOXICITY:** Ethyl Alcohol 64-17-5
**Acute Fish Toxicity:**
LC50 / 96 HOUR Oncorhynchus mykiss (rainbow trout) >10,000 mg/l
LC50 / 96 HOUR Pimephales promelas (fathead minnow) > 13,400 mg/l
**Toxicity to Aquatic Plants:**
Growth Inhibition / 96 HOURS Chlorella vulgaris (fresh water algae) 1,000 mg/l
**Toxicity to microorganisms:**
Toxicity Threshold / Pseudomonas putida 6,500 mg/l Summary: Inhibition of cell multiplication begins.
Isopropyl Alcohol 67-63-0
**Acute Fish Toxicity:**
LC50 / 96 hours Pimephales promelas: 9,640 mg/L
**Toxic to Daphnia and Other Aquatic Invertebrates:**
EC50 / 24 h / Water Flea – 5,102 mg/L
Toxicity to Aquatic Plants EC50 / 72 hours Desmodesmus subspicatus > 2,000 mg/L
**Toxicity to Daphnia and other aquatic invertebrates:**
Immobilization EC50 / 24 h / Water Flea - 6,851 mg/L
Methyl Alcohol 67-56-1
**Acute Fish Toxicity:**
LC50 / 96 hours Lepomis macrocirus: 15,400 mg/L / LC50 / 96 hours Fathead minnow: 29,400 mg/L
**Toxic to Daphnia and Other Aquatic Invertebrates:**
EC50 / 48 h / Water Flea – >10,000.00 mg/L
Toxicity to Aquatic Plants: EC50 / 96 hours Scenedesmus capricornutum 22,000 mg/L

**PERSISTANCE AND DEGRADABILITY:** Biodegradation is expected
**BIOACCUMULATIVE POTENTIAL:** Bioaccumulation is unlikely.
**MOBILITY IN SOIL:** No data available
**PBT and vPvB ASSESSMENT:** Not required.
**SECTION 12 NOTES:**

## SECTION 13: DISPOSAL CONSIDERATIONS

**WASTE DISPOSAL METHOD:** Unused product: dispose as a regulated hazardous waste. Burn in a chemical incinerator equipped with an afterburner and scrubber. Take extra care in lighting as this material is highly flammable. Spent product or spill clean up-follow all provincial, local, state, and federal regulations.

**SECTION 13 NOTES:**

## SECTION 14: TRANSPORT INFORMATION

***U.S. DEPARTMENT OF TRANSPORTATION:***

UN No. UN1987
Proper Shipping Name: ALCOHOLS, N.O.S. (ETHANOL, ISOPROPANOL)
Hazard Class:3
Packing Group: II
Label Statement: Flammable liquid

IMDG

UN No. UN1987
Proper Shipping Name: ALCOHOLS, N.O.S. (ETHANOL, ISOPROPANOL)
Hazard Class:3
Packing Group: II
EMS-No: F-E, S-D
Marine pollutant: No

IATA

UN No. UN1987
Proper Shipping Name: ALCOHOLS, N.O.S. (ETHANOL, ISOPROPANOL)
Hazard Class:3
Packing Group: II

## SECTION 15: REGULATORY INFORMATION

**United States**

**HCS Classification:** Flammable liquid, Target organ effects, Toxic by inhalation, Toxic by ingestion, Toxic by skin absorption

**U.S. Federal regulations:**

**TSCA 8(a) IUR:** Listed on inventory.
**United States inventory (TSCA 8b):** Listed on inventory.
**SARA 302/304/311/312 extremely hazardous substances:** No products were found.
**SARA 302/304 emergency planning and notification:** No products were found.
**SARA 302/304/311/312 hazardous chemicals:** No products were found.
**SARA 311/312 MSDS distribution - chemical inventory - hazard identification:**
Acute Health Hazard; Chronic Health Hazard, Fire Hazard
**SARA 313 Form R – Reporting:** The following components are subject to reporting levels established by SARA Title III, Section 313: ISOPROPANOL (CAS3 67-63-0) METHANOL (CAS# 67-56-1)

**DEA List I & II Chemicals**

**(Precursor Chemicals):** Not Listed

**CERCLA:** Methanol CAS-No. 67-56-1. RQ: 5,000 lbs

**RTK STATES:** Ethyl Alcohol 64-17-5 NJ, PA, MA Isopropyl Alcohol 67-63-0 NJ, PA, MA
Methyl Alcohol CAS 67-56-1 CT, MA, NJ, PA, RI

**California Prop. 65:** **WARNING:** This product can expose you to chemicals including Methanol, which are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

**CANADA**

**WHMIS (Canada):**

Class D-2A: Very toxic material causing other toxic effects
Class D-2B: Toxic material causing other toxic effects
Class B-2: Flammable liquid

**Canadian lists:**

**CEPA Toxic substances:** The following components are listed: None
**Canadian ARET:** None of the components are listed.
**Canadian NPRI:** The following components are listed: Methanol
Volatile organic compounds

**CEPA DSL / CEPA NDSL:** All components are listed or exempted.

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

**International regulations**

**International lists:**

**Australia inventory (AICS):** All components are listed or exempted.
**China inventory (IECSC):** All components are listed or exempted.
**Japan inventory:** All components are listed or exempted.
**Korea inventory:** All components are listed or exempted.
**New Zealand Inventory of Chemicals (NZIoC):** All components are listed or exempted.
**Philippines inventory (PICCS):** All components are listed or exempted.

## SECTION 16: OTHER INFORMATION

National Fire Protection Association (NFPA)


***DISCLAIMER:*** This Safety Data Sheet has been prepared in accordance with the Globally Harmonized System for the Classification and Labelling of Chemicals (GHS). To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries makes any warranty of merchantability or any other warranty, expressed or implied, which respect to such information, and we assume no liability resulting from its use. In no event shall Rankin Biomedical be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages resulting from use of or reliance upon this information.

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