SAFETY DATA SHEET

1000 Tedia Way
Fairfield, Ohio 45014 USA
Web: www.tedia.com

24-Hour Emergency Number (CHEMTREC)
USA: 800-424-9300
International: 703-527-3887
All non-emergency numbers should be directed to Customer Service at 800-PURITY1

ISOPROPYL ALCOHOL

SDS No. M0128

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Isopropyl Alcohol
Synonyms: 2-propanol, Dimethyl Carbinol, IPA, Isopropanol, Rubbing Alcohol
Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

Distributed by:
Rocky Mountain Reagents
SCIENTIFIC SOLUTIONS SINCE 1951
4621 Technology Drive, Golden, CO 80403
ph: (303) 762-0800 fax: (303) 762-1240
Product #: I1032, I1033, I1034

2. HAZARDS IDENTIFICATION



Classification:
Flammable Liquids: GHS Category 2, H225
Eye Irritation: GHS Category 2A, H319
Specific Target Organ Exposure, single exposure, Central nervous system: GHS Category 3, H336

Label Elements
Signal Word: DANGER!
Hazard Statements:
- H225 – Highly flammable liquid and vapor.
- H319 – Causes serious eye irritation.
- H336 - May cause dizziness and drowsiness.

Precautionary Statements:
- P210 – Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
- P243 – Take precautions against static discharge.
- P280 – Wear protective gloves/protective clothing/eye protection/face protection.
- P303+P361+P353 – If on skin or hair: Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 – IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
- P312 – Call a POISON CENTER or doctor if you feel unwell.
- P337+P313 – If eye irritation persists: Get medical advice/ attention.
- P403+P235 – Store in a well-ventilated place. Keep cool.
- P501 – Dispose of contents/ container to an approved waste disposal plant.

Emergency Overview
May cause central nervous system depression. Aspiration hazard. Can enter lungs and cause damage. Causes irritation to eyes and respiratory tract. Breathing vapors may cause drowsiness and dizziness. Prolonged or repeated contact with the skim may cause defatting with irritation redness and cracking. Flammable liquid and vapor. This material has been reported to be susceptible to autoxidation and therefore should be classified as peroxidizable. Hygroscopic. Target Organs: Central nervous system, respiratory system, eyes, and skin.

HMIS Rating:
Health – 2* Flammability – 3 Physical Hazard – 0 PPE – User supplied
NOTE: HMIS ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. These ratings are based on the inherent properties of this chemical under expected conditions of normal use and are not intended to be used in emergency situations. PPE is determined by the user based on their needs and conditions.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredient	CAS No	Percent	Hazardous
Isopropyl Alcohol	67-63-0	100%	Yes

4. FIRST-AID MEASURES

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Ingestion: Aspiration hazard if swallowed. Get medical help immediately. Do not induce vomiting unless directed by medical personnel. If vomiting occurs naturally, have victim lean forward. Never give anything by mouth to an unconscious person.
Skin Contact: Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes.
Eye Contact: Check for and remove contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention.
Notes to Physician: Urine acetone test may be helpful in diagnosis. Hem dialysis should be considered in severe intoxication. Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flammability: Highly flammable liquid and vapor (GHS Category 2)
Auto-ignition Temperature: 399° C (750° F)
Flash Point: 12° C (53° F)
Flammable Limits: Lower Limit – 2.0 vol %, Upper Limit – 13.4 vol %
Products of Combustion: May decompose into irritating and highly toxic gases under fire conditions (formaldehyde, carbon monoxide, carbon, dioxide).
Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Vapors may form explosive mixtures with air. Use water spray to keep fire exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.
Specific Explosion Hazards: May form explosive peroxides when evaporated.
Fire Fighting Media: Water may be ineffective. Do not use straight streams of water. For small fires, use dry chemical, carbon dioxide, water spray, or alcohol-resistant foam. For larger fires, use water spray, fog, or alcohol-resistant foam. Cool containers with flooding quantities of water and well after fire is out.
National Fire Protective Association: Health - 2, Flammability - 3, Reactivity - 0
NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.

6. ACCIDENTAL RELEASE MEASURES

Use water spray to reduce vapors. Water spray may reduce vapors but still not prevent ignition in closed spaces. Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Do not use sawdust or any combustible material. Use spark-proof tools. Provide ventilation to the affected area and remove all ignition sources. Approach the spill from upwind and pick up absorbed material and place it in a suitable container. Always use proper personal protective equipment as described in section 8.

7. HANDLING AND STORAGE

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Empty containers contain product residue (liquid and vapor) and can be dangerous. Keep container tightly closed and away from heat, spark, and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks, or open flames. Use with adequate ventilation. Avoid breathing vapor or mist.

Storage: Keep in a flammables area away from direct sunlight and all sources of ignition and oxidizing materials. Keep in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep from contact with oxidizing materials. After opening, purge container with nitrogen before reclosing. Periodically retest for peroxide formation. Addition of water or other appropriate reducing agent will reduce peroxide formation in long-term storage. All peroxidizable substances should be stored away from heat and light and be protected from ignition sources.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or using the material should be equipped with eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Personal Protection: Wear protective chemical goggles or other appropriate eye protection. Use butyl rubber gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirators when necessary.
Exposure Limits:

TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
STEL	400 ppm	USA. ACGIH Threshold Limit Values (TLV)
TWA	400 ppm (980 mg/m³)	USA. NIOSH Recommended Exposure Limits (REL)
ST	500 ppm (1,225 mg/m³)	USA. NIOSH Recommended Exposure Limits (REL)
TWA	400 ppm (980 mg/m³)	USA. OSHA Permissible Exposure Limits (PEL) - Table Z-1 Air Contaminants
PEL	400 ppm (980 mg/m³)	California Permissible Exposure Limits (Title 8, Article 107)
STEL	500 ppm (1,225 mg/m³)	California Permissible Exposure Limits (Title 8, Article 107)

9. PHYSICAL AND CHEMICAL PROPERTIES

a) Appearance: Clear, colorless liquid.
b) Odor: Alcohol-like.
c) Odor Threshold: 22 ppm.
d) pH: Not available.
e) Melting point/freezing point: Melting point: -88 °C.
f) Initial boiling point and boiling range: 82 °C @ 760 mm Hg.
g) Flash point: 12 °C (53 °F) - closed cup.
h) Evaporation rate: 1.7 (Butyl acetate = 1).
i) Flammability (solid, gas): No data available.
j) Upper/lower flammability or explosive limits:
Upper explosion limit: 12.7 %(V)
Lower explosion limit: 2.0 %(V)
k) Vapor pressure: 33 mm Hg @ 20 °C.
l) Vapor density: 2.1 (Air = 1).
m) Density: 0.7850 g/cm³ at 20 °C.
Relative density: Not available.
n) Water solubility: Miscible.
o) Partition coefficient: n-octanol/water: log Pow: 0.05 - Bioaccumulation is not expected.
p) Autoignition temperature: 399 °C (750 °F).
q) Decomposition temperature: Not available.
r) Viscosity: 2.27 cP at 20 °C.
s) Explosive properties: No data available.
t) Oxidizing properties: None.

9.2 Other safety information:
Conductivity at 25 °C: Conductive; Conductivity = 3.5×10^{8} pS/m.
Dielectric Constant = 19.92.
Relaxation Time Constant = 5×10^{-7} seconds.

10. STABILITY AND REACTIVITY

Stability: Stable under normal storage conditions. This material may form peroxides when concentrated by distillation or evaporation.
Conditions to Avoid: Light, ignition sources, moisture, excess heat, evaporation to near dryness, confined spaces.

Incompatibility with Various Substances: Strong oxidizing agents, strong acids, strong bases, amines, ammonia, ethylene oxide, isocyanates, acetaldehyde, chlorine, phosgene, aluminum at high temperatures. Attacks some forms of plastic, rubbers, and coatings.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact
Acute Exposure Hazards:

INHALATION HAZARD: Inhalation of high concentrations may cause central nervous effects characterized by nausea, headache, dizziness, unconsciousness, and coma. May cause narcotic effects in high concentrations. Causes upper respiratory tract irritation. Inhalation of vapors may cause drowsiness and dizziness.

INGESTION HAZARD: Causes gastrointestinal irritation with nausea, vomiting, and diarrhea. May cause kidney damage. May cause central nervous system depression with excitement followed by headache, drowsiness, nausea, and vomiting. Advanced stages may cause collapse, unconsciousness, coma, and possible death. Aspiration into lungs may cause chemical pneumonitis, which may be fatal. The probable lethal dose in humans is 240 ml (2696 mg/kg) but ingestion of only 20 ml 224 mg/kg) has caused poisoning.

SKIN CONTACT HAZARD: May cause irritation and stinging, particularly if the skin is abraded. Isopropanol has a low potential for causing allergic skin reactions; however, rare cases allergic dermatitis have been reported. May be absorbed through intact skin. Dermal absorption has been considered toxicologically insignificant. The cases of deep coma with skin contact are thought to be a consequence of gross isopropanol vapor inhalation in rooms with inadequate ventilation, rather than be attributed to skin of absorption of isopropanol.

EYE CONTACT HAZARD: Produced irritation characterized by a burning sensation, redness, tearing, inflammation, and possible corneal damage. May cause transient corneal injury. In the eyes of a rabbit, 0.1 ml of 70% isopropanol caused conjunctivitis and corneal opacity.

Chronic Exposure Hazards: Repeated or prolonged exposure may cause dermatitis and defatting of skin.
Animal Toxicity:

Draize test, rabbit, eye: 100 mg Severe;
Draize test, rabbit, eye: 10 mg Moderate;
Draize test, rabbit, eye: 100 mg/24 hr Moderate;
Draize test, rabbit, skin: 500 mg Mild;
Inhalation, mouse: LC50 = 53,000 mg/m^3;
Inhalation, rat: LC50 = 16,000 ppm/8 hr;
Inhalation, rat: LC50 = 72,600 mg/kg;
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 = 12,800 mg/kg;

Carcinogenicity: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65
Epidemiology: Experimental teratogenic and reproductive effects have been reported. Early epidemiological studies have suggested an association between the strong acid manufacture of isopropyl alcohol and paranasal sinus cancer in workers.
Teratogenicity: A rat and rabbit developmental toxicity study showed no teratogenic effects at doses that were clearly toxic to the mother. In a separate rate study, no evidence of developmental neurotoxicity was associated with gestational exposures to isopropanol up to 1200 mg/kg/d.
Reproductive Effects: No information found.
Mutagenicity: Mutagenic effects in animals have not been observed.
Neurotoxicity: No information available.
Other Studies: Standard Draize test – administration onto the skin (rabbit) = 500 mg (Mild); Standard Draize test – administration into the eye (rabbit) = 100 mg (Moderate); Standard Draize test – administration into the eye = 10 mg (Moderate); Standard Draize test – administration into the eye (rabbit) = 100 mg/24H (Moderate)

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Fish: Fathead minnow: 1000 ppm; 96 Hr; LC50
Daphnia: 1000 ppm; 96 Hr; LC50
Fish: Golden orfe: 8970-9280 ppm, 48 Hr, LC50

IPA has a high biochemical oxygen demand and a low potential to cause oxygen depletion in aqueous systems. It has a low potential to affect aquatic organisms, secondary waste treatment microbial metabolism, and the germination of some plants. It has a high potential to biodegrade (low persistence) with unacclimated microorganisms from activated sludge.
Environmental Fate: No information available.
Physical: THOD: 2.40 g oxygen/g; COD: 2.23 g oxygen/g; BOD-5: 1.19-1.72 g oxygen/g

13. DISPOSAL CONSIDERATIONS

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use, or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. TRANSPORT INFORMATION

US DOT
Proper Shipping Name: Isopropanol
Hazard Class: 3
UN Number: UN1219
Packing Group: II

IMDG
Proper Shipping Name: Isopropanol
Hazard Class: 3
UN Number: UN1219
Packing Group: II
EMS No.: F-E, S-D

IATA
Proper Shipping Name: Isopropanol
Hazard Class: 3
UN Number: UN1219
Packing Group: II

15. REGULATORY INFORMATION

US Federal Regulations:
TSCA (Toxic Substances Control Act): Listed on the TSCA Inventory.
CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):
Reportable Quantity (RQ): Not listed.
SARA Title III (Superfund Amendments and Reauthorization Act):
Section 302 (Extremely Hazardous Substances): Not listed.
Section 304 (Emergency Release Notification): Not listed.
Section 313 (Toxic Chemical Release Reporting): Not listed.

US State Regulations:
CAS# 67-63-0 is on the following state right-to-know lists: New Jersey, Pennsylvania, and Massachusetts
This product contains no chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm

International Regulations:
Canada (WHMIS): Classified as a hazardous product under the Hazardous Products Act (HPA). Subject to labeling and SDS requirements under WHMIS 2015.
EU (REACH/CLP):
REACH (Registration, Evaluation, Authorization, and Restriction of Chemicals): Registered under REACH.
CLP (Classification, Labeling, and Packaging):
Flammable Liquid (Category 2)
Hazard Statement: H225 – Highly flammable liquid and vapor.
Australia (NICNAS): Listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Originally Prepared: 5/21/2007
Last Revised: 03/18/2025 – Update physical properties.

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.

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