

SAFETY DATA SHEET

ISOPROPYL ALCOHOL 99% ANHYDROUS

Product ID: OR090501

Revised: 02-21-2022

Replaces: 06-30-2016

1. IDENTIFICATION

Product Identifier Used on the Label: ISOPROPYL ALCOHOL 99% ANHYDROUS

Other Identifiers: Isopropanol; 2-Propanol; IPA; Petrohol; sec-Propyl Alcohol; Dimethylcarbinol

Product ID: MIXTURE

Recommended Use: Solvent, antiseptic, coolant, deicing/antifreeze agent, chemical feedstock, and other industrial applications.

Restrictions on Use: Not for use as a pharmaceutical excipient, active pharmaceutical ingredient (API) or direct food additive.

Hydrite Chemical Co.
17385 Golf Parkway
Brookfield, WI 53045
(262) 792-1450

EMERGENCY RESPONSE NUMBERS:

24 Hour Emergency #: (414) 277-1311

CHEMTREC Emergency #: (800) 424-9300

2. HAZARD(S) IDENTIFICATION

GHS Classification(s): Flammable Liquid Category 2
Serious Eye Damage/Eye Irritation Category 2A
Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3

GHS Label Elements:

GHS Hazard Symbols:



Signal Word: Danger

Hazard Statements: Highly flammable liquid and vapour.
Causes serious eye irritation.
May cause drowsiness or dizziness.

Precautionary Statements:

Prevention: Keep away from heat, sparks, open flames and hot surfaces. – No smoking.
Ground and bond container and receiving equipment.
Use explosion-proof electrical, ventilating, and lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust, gas, mist, vapors or spray.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor if you feel unwell.

ISOPROPYL ALCOHOL 99% ANHYDROUS
Product ID: OR090501

If eye irritation persists: Get medical advice or attention.
In case of fire: Use water spray, water fog, carbon dioxide, dry chemical, alcohol foam to extinguish.

Storage: Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store in a secure manner.

Disposal: Dispose of in accordance with local, regional and international regulations.

Hazards not otherwise classified: May be harmful or fatal if swallowed and enters airways. Potential peroxide former.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances/Mixtures:

Chemical or Common Name/Synonyms	CAS Number	% by Wt.
Isopropyl Alcohol	67-63-0	99.8-100 %

Note: Any chemical identity and/or exact percentage not expressly stated is being withheld as a trade secret or is due to batch variation.

4. FIRST-AID MEASURES

Description of Necessary Measures:

Eye Contact: If in eyes: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention.

Skin Contact: If on skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Do not reuse clothing and shoes until cleaned. Wash with soap and water. Do not apply oils or ointments unless ordered by the physician.

Inhalation: If inhaled: Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

Ingestion: If swallowed: Call a physician immediately. DO NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Most Important Symptoms/Effects, Acute and Delayed:

Eye Contact: Causes moderate to severe irritation. Liquid contact may cause: burning sensation. blurred vision. inflammation. swelling. redness. tearing. Corneal injury may occur. Vapors are also irritating.

Skin Contact: May cause mild irritation. Contact may cause: stinging. pain. sensitization. Prolonged and repeated contact with skin can cause defatting and drying of the skin which may result in skin irritation and dermatitis. Prolonged and repeated exposure may cause: redness. cracking. scaling.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Inhalation: May cause moderate irritation. Vapors or mists may irritate: nose. throat. respiratory tract. Excessive exposure may cause: central nervous system effects. narcotic effects. incoordination. confusion. hypotension. hypothermia. circulatory failure. respiratory arrest. death. Prolonged excessive exposure may cause adverse effects. Observation in animals include middle ear lining damage upon exposure to vapors of isopropanol. However, the relevance of this to humans is unknown.

Ingestion: May cause: gastrointestinal irritation. nausea. vomiting. diarrhea. cramps. abdominal pain. central nervous system depression. excitement. headache. dizziness. drowsiness. kidney damage. Advanced stages may cause: collapse. unconsciousness. coma. possible death due to respiratory failure. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Indication of Immediate Medical Attention and Special Treatment Needed: If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. Urine acetone test may be helpful

ISOPROPYL ALCOHOL 99% ANHYDROUS
Product ID: OR090501

in diagnosis. Hemodialysis should be considered in severe intoxication. Treatment is symptomatic and supportive.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Water spray. Water fog. Carbon dioxide. Dry chemical. Alcohol foam. Water may be ineffective but should be used to cool fire-exposed structures and vessels. **DO NOT USE:** Direct water stream.

Specific Hazards Arising from the Chemical:

Fire and Explosion Hazards: HIGHLY FLAMMABLE LIQUID. Vapors are heavier than air. Vapors may settle in low or confined areas, or travel long distances along the ground or surface to an ignition source where they may ignite, flashback, or explode. Keep away from heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment). **PROCESS HAZARD:** Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into hot equipment under a vacuum, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions. Containers exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup which could result in container rupture. Container areas exposed to direct flame should be cooled with large quantities of water as needed to prevent weakening of container structure. Flame may be invisible. Approach fire with caution. May form explosive peroxides. Vapors may form explosive mixture with air. Material may accumulate a static charge which could act as an ignition source.

Hazardous Combustion Products: Carbon dioxide. Carbon monoxide. Incompletely burned carbon compounds. Smoke. Fumes.

Special Protective Equipment and Precautions for Fire-Fighters: Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-approved self-contained breathing apparatus. Remain upwind of fire to avoid hazardous vapors and decomposition products. Use water spray to cool fire-exposed containers and disperse vapors. If container is not properly cooled, it can rupture in the heat of a fire. Do not use direct water stream. May spread fire. Run-off from fire control may cause pollution.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, Emergency Procedures: HIGHLY FLAMMABLE LIQUID. Eliminate all sources of ignition. Evacuate unprotected personnel from area. Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8. Never exceed any occupational exposure limit.

Methods and Materials for Containment and Clean Up: Shut off source of leak if safe to do so. Use water spray to control vapor. A vapor suppressing foam may be used to reduce vapors. Contain spill, place into drums for proper disposal. Soak up residue with non-flammable absorbent material. **DO NOT** use sawdust or other cellulose-type material. Place in non-leaking containers for immediate disposal. Flush remaining area with water to remove trace residue and dispose of properly. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs. Prevent entry into basements, low areas, or confined areas. Use non-sparking tools and equipment. For large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling. Empty containers retain product residue (vapor, dust, or liquid) and can be dangerous. **DO NOT** pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other source of ignition. They may explode and cause injury or death. Launder contaminated clothing before reuse. Air-dry contaminated clothing in a well ventilated area before laundering. Always open containers slowly

ISOPROPYL ALCOHOL 99% ANHYDROUS
Product ID: OR090501

to allow any excess pressure to vent. Do NOT use compressed air for filling, discharging, or handling operations. Avoid splash filling. Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazards of static accumulation. Use non-sparking tools and equipment.

Conditions for Safe Storage, Including any Incompatibilities: HIGHLY FLAMMABLE LIQUID. Store in a cool, well-ventilated area away from all sources of ignition and out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers. Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond and ground transfer containers and equipment. Peroxides may form upon prolonged storage. Exposure to light, heat or air significantly increases peroxide formation. If evaporated to a residue, the mixture of peroxides residue and material vapor may explode when exposed to heat or shock. After opening, purge container with nitrogen before reclosing. If peroxide formation is suspected, do not open or move container. Periodically test for peroxide formation on long-term storage. Addition of water or appropriate reducing materials will lessen peroxide formation. Do not store or handle in aluminum equipment at temperatures above 122 F.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA Exposure Guidelines:

Component	Limits
Isopropyl Alcohol	400 ppm TWA; 980 mg/m3 TWA

ACGIH Exposure Guidelines:

Component	Limits
Isopropyl Alcohol	200 ppm TWA; 400 ppm STEL

Appropriate Engineering Controls: Local exhaust ventilation, process enclosures, or other engineering controls are required when handling or using this product to avoid overexposure. Use explosion-proof ventilation equipment. Maintain adequate ventilation. Do not use in closed or confined spaces. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

Individual Protection Measures:

Eye/Face Protection: Wear chemical safety goggles while handling this product. Do not wear contact lenses. Wear additional eye protection such as a face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Wear a full-face respirator, if needed.

Skin Protection: Prevent contact with this product. Wear gloves and protective clothing depending on condition of use. Protective gloves: Chemical-resistant.

Respiratory Protection: Respiratory protection must be worn if ventilation does not eliminate symptoms or keep levels below recommended exposure limits. If exposure limits are exceeded, wear: NIOSH-Approved organic respirator. NIOSH-Approved Supplied Air Respirator (SAR). NIOSH-Approved self-contained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

Other Protective Equipment: Eye-wash station. Safety shower. Rubber apron. Rubber boots. Protective clothing.

General Hygiene Conditions: Wash with soap and water before meal times and at the end of each work shift. Food, beverages, and tobacco products should not be carried, stored or consumed where this material is in use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid.

Color: Clear. Colorless.

Odor: Alcohol odor.

Odor Threshold: > 36 ppm (90 mg/m3)

pH: N.A.

Freezing Point (deg. F): - 126

ISOPROPYL ALCOHOL 99% ANHYDROUS

Product ID: OR090501

Melting Point (deg. F): -128

Initial Boiling Point or Boiling Range: 180 °F

Flash Point: 53 - 55 °F

Flash Point Method: TCC.

Evaporation Rate (nBuAc = 1): 2.3-3.9

Flammability (solid, gas): N.D.

Lower Explosion Limit: 2%

Upper Explosion Limit: 13%

Vapor Pressure (mm Hg): 33 @ 68F

Vapor Density (air=1): > 1

Specific Gravity or Relative Density: 0.79 @ 20C

Solubility in Water: Complete

Partition Coefficient (n-octanol/water): log Pow 0.05 @ 25 Deg. C

Auto-ignition Temperature: > 662 Deg. F. (> 350 Deg. C.)

Decomposition Temperature: N.D.

Viscosity: 2.66 mm²/s @ 25C (Kinematic); 2.4 mPa.s @ 20 C (Dynamic)

% Volatile (wt%): 100

VOC (wt%): 100

VOC (lbs/gal): 6.6

Fire Point: N.D.

10. STABILITY AND REACTIVITY

Reactivity: No data available.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur under normal conditions. Under normal storage conditions peroxides may accumulate and explode when subjected to heat or shock. Distillation or evaporation increases peroxide formation and increases the explosion hazard.

Conditions to Avoid (e.g., static discharge, shock, or vibration): Avoid contact with heat, sparks, electric arcs, other hot surfaces, and open flames. Avoid static discharges. Avoid other ignition sources. Avoid exposure to light. Avoid contact with air. Do not allow to evaporate to near dryness. Do not store or handle in aluminum equipment at temperatures above 122 F.

Incompatible Materials: Acids. Alkalies. Amines. Halogens. Strong oxidizing agents. Chlorine. Isocyanates. Chlorinated compounds. Aldehydes. Alkanolamines. Ethylene oxide. Aluminum. Oleum. Chromium trioxide. Moisture. Acetaldehyde. Ketones. Acid anhydrides. Permanganates. Oxygen. Hydrogen peroxide. Potassium tert-butoxide. Iron salts. Carbonyl dichloride (phosgene). Trinitromethane. Barium perchlorate. Dioxygenyl tetrafluoroborate. Nitroform. Perchloric acid. Hypochlorous acid. Sulfuric acid. Urea formaldehyde. Hexamethylene diisocyanate. Caustics. Halogenated organics. Aluminum isopropoxide + crotonaldehyde + heat. Sodium dichromate + sulfuric acid. Hydrogen + palladium. Hydrogen peroxide-sulfuric acid combination. May attack some forms of plastics, rubbers, and coatings.

Hazardous Decomposition Products: Decomposition products depend upon temperature, air supply and the presence of other materials. Carbon dioxide. Carbon monoxide. Irritating and/or toxic gases.

11. TOXICOLOGICAL INFORMATION

Routes of Exposure: Eyes. Skin. Inhalation. Ingestion. Absorption.

Symptoms/Effects: Acute, Delayed and Chronic:

Eye Contact: Causes moderate to severe irritation. Liquid contact may cause: burning sensation. blurred vision. inflammation. swelling. redness. tearing. Corneal injury may occur. Vapors are also irritating.

Skin Contact: May cause mild irritation. Contact may cause: stinging. pain. sensitization. Prolonged and repeated contact with skin can cause defatting and drying of the skin which may result in skin irritation and dermatitis. Prolonged and repeated exposure may cause: redness. cracking. scaling.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Inhalation: May cause moderate irritation. Vapors or mists may irritate: nose, throat, respiratory tract. Excessive exposure may cause: central nervous system effects, narcotic effects, incoordination, confusion, hypotension, hypothermia, circulatory failure, respiratory arrest, death. Prolonged excessive exposure may cause adverse effects. Observation in animals include middle ear lining damage upon exposure to vapors of isopropanol. However, the relevance of this to humans is unknown.

Ingestion: May cause: gastrointestinal irritation, nausea, vomiting, diarrhea, cramps, abdominal pain, central nervous system depression, excitement, headache, dizziness, drowsiness, kidney damage. Advanced stages may cause: collapse, unconsciousness, coma, possible death due to respiratory failure. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Numerical Measures of Toxicity:

<u>Component</u>	<u>Oral LD50</u>	<u>Dermal LD50</u>	<u>Inhalation LC50</u>
Isopropyl Alcohol	Rat: > 4000 mg/kg	Rabbit: 4059 mg/kg	4H Rat: 72.6 mg/L

Cancer Information:

This product does not contain 0.1% or more of the known or potential carcinogens listed in NTP, IARC, or OSHA.

Medical Conditions Aggravated by Exposure to Product: Eye disorders. Skin disorders. Liver disorders. Kidney disorders. Impaired pulmonary function.

Other: Avoid simultaneous exposure to Isopropyl Alcohol and haloalkanes, such as Chloroform, Trichloroethane and Carbon Tetrachloride. Coexposure greatly increases the liver and kidney toxic effects of these haloalkanes, leading to hepatitis and kidney failure. Liver damage may be evidenced by loss of appetite, jaundice and pain in the upper abdomen on the right side. Repeated Dose Toxicity: In animals, effects have been reported on the following organs: Kidney, Liver. Kidney effects have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans. Observations in animals include: Lethargy. Isopropyl alcohol's lethal dose for humans is estimated at 100 ml.

Developmental Toxicity: Isopropanol has been toxic to the fetus in laboratory animals at doses toxic to the mother.

Reproductive Toxicity: In animal studies, did not interfere with reproduction. In animal studies, did not interfere with fertility.

Genetic Toxicity: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information: Material is not expected to demonstrate chronic toxicity to aquatic organisms.

LC50: 9640 mg/L – Pimephales promelas (fathead minnow)(96 hours)

LC50: 9714 mg/L – Daphnia magna (water flea)(24 hours)

LOEC: 1000 mg/L – Alga (8 days)

Low acute toxicity to fish. Low acute toxicity to aquatic invertebrates. Low toxicity to algae. Low toxicity to sewage microbes. Chronic toxicity to fish is expected to be low. Chronic toxicity to aquatic invertebrates is expected to be low.

Chemical Fate Information: Material is expected to remain in water or migrate to soil. It is expected to readily biodegrade. Transformation due to hydrolysis is not expected to be significant. Transformation due to photolysis is not expected to be significant.

BOD5 (5 day): 53%

BIODEGRADABILITY: 86-94% (after two weeks in a ready biodegradability test)

BIOCONCENTRATION FACTOR (BCF): 3.16. This material is not expected to bioaccumulate.

13. DISPOSAL CONSIDERATIONS

Hazardous Waste Number: D001

ISOPROPYL ALCOHOL 99% ANHYDROUS**Product ID: OR090501**

Disposal Method: Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations. Since emptied containers retain product residue, follow label warnings even after container is emptied. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition.

14. TRANSPORTATION INFORMATION**DOT (Department of Transportation):**

Identification Number: UN1219
Proper Shipping Name: ISOPROPYL ALCOHOL
Hazard class: 3
Packing Group: II
Label Required: FLAMMABLE

15. REGULATORY INFORMATION

TSCA Inventory Status: All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

SARA Title III Section 311/312 Category Hazards: Please see Section 2 of this SDS.

Regulated Components:	CAS	CERCLA	SARA	SARA	U.S.	WI	Prop
Component	Number	RQ	EHS	313	HAP	HAP	65
No components found.							

***Prop 65 - May Contain the Following Trace Components:**

No data available.

16. OTHER INFORMATION**Hazard Rating System**

Health: 2*

Flammability: 3

Reactivity: 0

* = Chronic Health Hazard

NFPA Rating System

Health: 2

Flammability: 3

Reactivity: 0

Special Hazard: None

SDS Abbreviations

N.A. = Not Applicable

N.D. = Not Determined

HAP = Hazardous Air Pollutant

VOC = Volatile Organic Compound

C = Ceiling Limit

N.E./Not Estab. = Not Established

SDS Prepared by: csh

Reason for Revision: Changes made throughout the SDS.

Revised: 02-21-2022

Replaces: 06-30-2016

The data in this Safety Data Sheet relates to the specific material designated and does not relate to its use

in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.