Material Safety Data Sheet

Version 5.0
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Isopropyl alcohol
Product Number	:	W292907
Brand	:	Aldrich
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Flammable liquid, Target Organ Effect, Irritant

Target Organs

Nerves., Kidney, Cardiovascular system., Gastrointestinal tract, Liver

GHS Classification
Flammable liquids (Category 2)
Skin irritation (Category 3)
Eye irritation (Category 2A)
Specific target organ toxicity - single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H225	Highly flammable liquid and vapour.
H316	Causes mild skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ 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.

HMIS Classification

Health hazard: 2
Chronic Health Hazard: *

Flammability: 3
Physical hazards: 0

NFPA Rating

Health hazard: 2
Fire: 3
Reactivity Hazard: 0

Potential Health Effects

Inhalation May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.

Skin May be harmful if absorbed through skin. Causes skin irritation.

Eyes Causes eye irritation.

Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 2-Propanol
sec-Propyl alcohol
Isopropyl alcohol
Isopropanol

Formula : C_3H_8O

Molecular Weight : 60.10 g/mol

Component		Concentration
2-Propanol		
CAS-No.	67-63-0	-
EC-No.	200-661-7	
Index-No.	603-117-00-0	

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

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

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

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

5. FIREFIGHTING MEASURES

Conditions of flammability
Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours 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 (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage
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.

Handle and store under inert gas. hygroscopic

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
2-Propanol	67-63-0	TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Eye & Upper Respiratory Tract irritation Central Nervous System impairment Not classifiable as a human carcinogen			
		STEL	400 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Eye & Upper Respiratory Tract irritation Central Nervous System impairment Not classifiable as a human carcinogen			
		TWA	400 ppm 980 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	500 ppm 1,225 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	400 ppm 980 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate.			
		TWA	400 ppm 980 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	500 ppm 1,225 mg/m3	USA. NIOSH Recommended Exposure Limits

Personal protective equipment

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).

Hand 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.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 480 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 60 min
Material tested:Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

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 and body protection
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.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	colourless

Safety data

pH	no data available
Melting point/freezing point	Melting point/range: -89.5 °C (-129.1 °F) - lit.
Boiling point	82 °C (180 °F) - lit.
Flash point	12.0 °C (53.6 °F) - closed cup
Ignition temperature	425 °C (797 °F)
Auto-ignition temperature	425.0 °C (797.0 °F)
Lower explosion limit	2 %(V)
Upper explosion limit	12.7 %(V)

Vapour pressure	43.2 hPa (32.4 mmHg) at 20.0 °C (68.0 °F) 58.7 hPa (44.0 mmHg) at 25.0 °C (77.0 °F)
Density	0.785 g/cm3 at 25 °C (77 °F)
Water solubility	completely soluble
Partition coefficient: n-octanol/water	log Pow: 0.05
Relative vapour density	no data available
Odour	alcohol-like
Odour Threshold	no data available
Evapouration rate	3.0

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

Materials to avoid
Oxidizing agents, Acid anhydrides, Aluminium, Halogenated compounds, Acids

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
LD50 Oral - rat - 5,045 mg/kg
Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Somnolence (general depressed activity).

Inhalation LC50
LC50 Inhalation - rat - 8 h - 16000 ppm

Dermal LD50
LD50 Dermal - rabbit - 12,800 mg/kg

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - Mild skin irritation

Serious eye damage/eye irritation
Eyes - rabbit - Eye irritation - 24 h

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity

no data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

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

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be harmful if inhaled. Causes respiratory tract irritation. Vapours may cause drowsiness and dizziness.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.

Signs and Symptoms of Exposure
Central nervous system depression, prolonged or repeated exposure can cause:, Nausea, Headache, Vomiting, narcosis, Drowsiness, Overexposure may cause mild, reversible liver effects.

Synergistic effects
no data available

Additional Information
RTECS: NT8050000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 9,640.00 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 5,102.00 mg/l - 24 h
	Immobilization EC50 - Daphnia magna (Water flea) - 6,851 mg/l - 24 h
Toxicity to algae	EC50 - Desmodesmus subspicatus (green algae) - > 2,000.00 mg/l - 72 h
	EC50 - Algae - > 1,000.00 mg/l - 24 h

Persistence and degradability

no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

no data available

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.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1219 Class: 3 Packing group: II
Proper shipping name: Isopropanol
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 1219 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: ISOPROPANOL
Marine pollutant: No

IATA
UN number: 1219 Class: 3 Packing group: II
Proper shipping name: Isopropanol

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Target Organ Effect, Irritant

SARA 302 Components
SARA 302: 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:

	CAS-No.	Revision Date
2-Propanol	67-63-0	1987-01-01

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
2-Propanol	67-63-0	1987-01-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
2-Propanol	67-63-0	1987-01-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
2-Propanol	67-63-0	1987-01-01

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.

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.