

SAFETY DATA SHEET

1 PRODUCT AND COMPANY IDENTIFICATION

GHS Product identifier: Isopropyl Alcohol

Other means of identification

Synonyms: 2-Propanol, Dimethyl carbinol, sec-Propyl alcohol

Product No.: 0562, 3031, 3032, 3043, 3590, 3591, 3593, 8288, 9037, 9080, H604, U298, V555, V566, 13483, 33312

Recommended use: For Laboratory, Research or Manufacturing Use.

Limitations on use: Not determined.

Details of the supplier of the safety data sheet:

Avantor Performance Materials, LLC
100 Matsonford Rd, Suite 200
Radnor, PA 19087

Telephone:

Customer Service: 855-282-6867

Contact Person: Product Information Compliance

E-mail: info@avantormaterials.com

Emergency telephone: CHEMTREC: 800-101-

2201 (24/7)

2 HAZARDS IDENTIFICATION

GHS classification:

Physical Hazards:

Flammable liquids Category 2

Health Hazards:

Serious Eye Damage/Eye Irritation Category 2

Specific Target Organ Toxicity - Single Exposure Category 3(Narcotic effect.)

Aspiration Hazard Category 2

GHS label elements:

Symbol(s):



Signal Words: Danger

Hazard Statement(s): Highly flammable liquid and vapor.
Causes serious eye irritation.
May cause drowsiness or dizziness.
May be harmful if swallowed and enters airways.

Precautionary Statements
Prevention:

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Take action to prevent static discharges. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/eye protection/face protection.

Response:

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. If eye irritation persists: Get medical advice/attention. In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction.

Storage:

Store in a well-ventilated place. Keep container tightly closed. Keep cool. Store locked up.

Disposal:

Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification':

Primary hazards: Highly flammable liquid and vapor.

Specific hazards: No data available.

3 COMPOSITION / INFORMATION ON INGREDIENTS

Substance or Preparation:
General information:

Chemical name	Concentration	CAS-No.	EC No.
Isopropyl alcohol	98 - 100%	67-63-0	

4 FIRST AID MEASURES

General:

Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Inhalation:

Move to fresh air. Get medical attention if symptoms persist.

Eye contact:

Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

Skin Contact:

Wash skin thoroughly with soap and water. Get medical attention if symptoms occur. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse.

Ingestion

Call a physician or poison control center immediately. Rinse mouth. Do NOT induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute delayed:

Harmful if swallowed. Narcotic effect. Irritating to eyes, respiratory system and skin.

Indication of immediate medical attention and special treatment needed, if necessary: Treat symptomatically. Symptoms may be delayed.

5 FIRE-FIGHTING MEASURES

Extinguishing media: Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazard arising from the chemical: Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Vapor from the solvent may accumulate in container headspace resulting in flammability hazard. Heat may cause the containers to explode.

Special fire fighting procedures: Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Special protective action for fire fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid breathing mists or vapors. Ventilate closed spaces before entering them. See Section 8 of the SDS for Personal Protective Equipment.

Environmental Precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up: In case of leakage, eliminate all ignition sources. Use non-sparking tools. Take precautionary measures against static discharges. Stop leak if possible without any risk. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures: Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

7 HANDLING AND STORAGE

Precautions for safe handling: Do not handle until all safety precautions have been read and understood. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Wear protective gloves/protective clothing/eye protection/face protection. Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling. Use only with adequate ventilation. Do not breathe mist or vapor.

Condition for safe storage, including any incompatibilities: Keep away from food, drink and animal feeding stuffs. Keep container tightly closed in a cool, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Appropriated engineering control measures: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Occupational Exposure Limits:

Chemical name	Type	Exposure Limit Values	Source
Isopropyl alcohol	STEL	500 ppm 1,230 mg/m3	Singapore. PELs. (Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order) (2006)
	TWA	400 ppm 983 mg/m3	Singapore. PELs. (Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order) (2006)

Personal protective equipment (ppe)

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Chemical respirator with organic vapor cartridge.

Eye Protection: Wear safety glasses with side shields (or goggles).

Hand Protection: Chemical resistant gloves

Skin Protection: Wear suitable protective clothing.

Hygiene measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower. Avoid contact with eyes, skin, and clothing.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state: Liquid
Form: Liquid
Color: Colorless
Odor: Alcohol
Odor Threshold: No data available.
pH: No data available.
Freezing point: -88.5 °C
Boiling Point: 82.3 - 82.5 °C
Flash Point: 12 °C (Closed Cup)
Evaporation Rate: 21 (ether=1)2.9 (n-butyl acetate=1)
Flammability (solid, gas): Class IB Flammable Liquid

Flammability Limit - Upper (%)-:	12 %(V)
Flammability Limit - Lower (%)-:	2.5 %(V)
Vapor pressure:	6.053 kPa (25 °C) 44 hPa (20 °C)
Vapor density (air=1):	2.1 (Air=1)
Relative density:	0.79 (20 °C)
Solubility(ies)	
Solubility in Water:	Miscible
Solubility (other):	benzene: Soluble chloroform: Miscible
Partition coefficient (n-octanol/water):	0.05
Autoignition Temperature:	399 °C
Decomposition Temperature:	No data available.
Viscosity:	2.4 mm ² /s (20 °C)
Explosive properties:	No data available.
Oxidizing properties:	No data available.
Other information	
Molecular weight:	60.10 g/mol (C ₃ H ₈ O)
Minimum ignition energy:	0.65 mJ

10 STABILITY AND REACTIVITY

Incompatible Materials:	Strong oxidizing agents. Acids. Isocyanates. Hydrogen peroxide (H ₂ O ₂) Sulfuric acid. Acetaldehyde. Acetylene. Chlorine. Aluminum. Ethylene Oxide
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, sparks, flames. Sunlight.
Hazardous Decomposition Products:	Thermal decomposition may release oxides of carbon.

11 TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation:	May cause irritation to the mucous membranes and upper respiratory tract. May cause central nervous system effects.
Ingestion:	Irritating. May cause nausea, stomach pain and vomiting.
Skin Contact:	Prolonged or repeated skin contact may cause drying, cracking, or irritation.
Eye contact:	Causes serious eye irritation.

Information on toxicological effects

Acute toxicity

Oral	
Product:	LD 50 (Rat): 5,045 - 5,840 mg/kg
Dermal	
Product:	LD 50 (Rabbit): 12,800 mg/kg

Inhalation	
Product:	LC 50 (Rat, 6 h): > 10000 ppm LOAEL (Rat, 6 h): 5000 ppm
Repeated dose toxicity	
Product:	No data available.
Skin Corrosion/Irritation:	
Product:	Prolonged or repeated skin contact may cause drying, cracking, or irritation.
Serious Eye Damage/Eye Irritation:	
Product:	Causes serious eye irritation.
Respiratory or Skin Sensitization:	
Product:	Not a skin nor a respiratory sensitizer.
Germ Cell Mutagenicity	
In vitro	
Product:	No mutagenic components identified
In vivo	
Product:	No mutagenic components identified
Carcinogenicity	
Product:	This substance has no evidence of carcinogenic properties.
Reproductive toxicity	
Product:	No components toxic to reproduction
Specific Target Organ Toxicity - Single Exposure	
Product:	Central nervous system. - Narcotic effect.
Specific Target Organ Toxicity - Repeated Exposure	
Product:	None known.
Aspiration Hazard	
Product:	May be harmful if swallowed and enters airways.
Metabolism:	No data available.
Other effects:	None known.

12 ECOLOGICAL INFORMATION

General information:	Not applicable
Ecotoxicity	
Acute toxicity	
Fish	
Product:	LC 50 (Western mosquitofish (<i>Gambusia affinis</i>), 96 h): > 1,400 mg/l
Aquatic Invertebrates	
Product:	LC 50 (Water flea (<i>Daphnia magna</i>), 24 h): 10,000 mg/l
Chronic Toxicity	
Fish	
Product:	No data available.
Aquatic Invertebrates	
Product:	No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: Expected to be readily biodegradable.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Product: No data available on bioaccumulation.

Mobility in soil:

The product is partly soluble in water. May spread in the aquatic environment.

Results of PBT and vPvB assessment:

Not available.

Other adverse effects:

The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13 Disposal considerations

Disposal methods: Discharge, treatment, or disposal may be subject to national, state, or local laws.

14 TRANSPORT INFORMATION

IMDG - International Maritime Dangerous Goods Code

UN Number:	UN 1219
UN Proper Shipping Name:	ISOPROPANOL
Transport Hazard Class(es):	3
Subsidiary risk label(s):	–
Packing Group:	II
Label(s):	3
Marine Pollutant:	Not a Marine Pollutant
EmS No.:	F-E; S-D

IATA

UN Number:	UN 1219
Proper Shipping Name:	Isopropanol
Transport Hazard Class(es):	3
Subsidiary risk label(s):	–
Packing Group:	II
Label(s):	3
Marine Pollutant	Not a Marine Pollutant

15 REGULATORY INFORMATION

Applicable regulations:

- Workplace Safety and Health Act
- Act on the Control of Transboundary Movements of Hazardous Wastes and their Disposal
- Environmental Public Health Act
- Environmental Public Health (Toxic Industrial Waste) Regulations
- Singapore. Hazardous Substances Control List (Environmental Protection and Management Act, Second Schedule, Part 1, Control of Hazardous Substances)
- Environmental Pollution Control (Hazardous Substances) Regulations
- Singapore. PELs. (Workplace Safety and Health (Permissible Exposure Levels of Toxic Substances) Order)

16 OTHER INFORMATION

Inventory Status

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Mexico INSQ:	On or in compliance with the inventory
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory

Revision Information: Not relevant.
Issue Date: 02-25-2020

SDS No.:

Disclaimer:

The information provided in this Safety Data Sheet (SDS) was prepared based on data believed to be accurate as of the date of this SDS. TO THE GREATEST EXTENT PERMITTED BY LAW, AVANTOR PERFORMANCE MATERIALS (“AVANTOR”) EXPRESSLY DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES REGARDING THE INFORMATION CONTAINED HEREIN INCLUDING, WITHOUT LIMITATION, AS TO ACCURACY, COMPLETENESS, FITNESS FOR PURPOSE OR USE, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY AND STABILITY. This SDS is intended as a guide to the appropriate use, handling, storage and disposal of the product to which it relates by properly trained personnel, and is not intended to be comprehensive. Users of Avantor’s products are advised to perform their own tests and to exercise their own judgment to determine the safety, suitability and appropriate use, handling, storage and disposal of each product and product combination for their own purposes and uses. TO THE GREATEST EXTENT PERMITTED BY LAW, AVANTOR DISCLAIMS LIABILITY FOR, AND BY USING AVANTOR’S PRODUCTS PURCHASER AGREES THAT UNDER NO CIRCUMSTANCES SHALL AVANTOR BE LIABLE FOR, SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES OF ANY TYPE OR KIND, INCLUDING WITHOUT LIMITATION, FOR LOSS OF PROFITS, REPUTATIONAL DAMAGE, PRODUCT RECALL OR BUSINESS INTERRUPTION.