SAFETY DATA SHEET
Isopropyl Alcohol

Revision date: 2020-06-11
Version 1.0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: Isopropyl Alcohol, 99%

Synonyms: Isopropanol, Isopropyl Alcohol, 2-Propanol, sec-propyl alcohol, dimethylcarbinol, Rubbing alcohol, IPA 99%

Other means of identification: CAS# 67-63-0
EINECS# 200-661-7

Product Form: Liquid

Recommended use of the chemical and restrictions on use

Recommended Use: General use organic solvent; remediation of contaminated groundwater and soils.
Restrictions on Use: Use as recommended by the label

Details of the supplier and of the safety data sheet

Supplier
Tersus Environmental, LLC
1116 Colonial Club Rd
Wake Forest, NC 27587
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Contact Person
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Emergency telephone number

For leak, fire, spill or accident emergencies, call:

+1-919-453-5577 (Tersus Office Hours, 8:00 AM to 5:00 PM Eastern)
+1-800-424-9300 (Chemtrec 24 Hour Service – Emergency Only)
+1-703-527-3887 (Chemtrec Outside United States 24 Hour Service – Emergency Only)
+1-919-638-7892 Gary M. Birk (Outside office hours)

2. HAZARD IDENTIFICATION

OSHA Hazards: Flammable Liquid, Target organ effect, Irritant
Target Organs: Cardiovascular system, gastrointestinal tract, kidney, liver, nerves

GHS label elements (including precautionary statements)

Signal Word: DANGER!

Hazard Statement(s):

H225 Highly flammable liquid and vapor
H319 Causes serious eye irritation
H336 May cause drowsiness or dizziness

Precautionary Statement(s):

P261	Avoid breathing dust/fumes/gas/mist/vapors
P312	Call a POISON CENTER or doctor/physician if you feel unwell
P501	Dispose of contents and container to an approved waste disposal plant
P240	Ground/bond container and receiving equipment
P337 + P313	If eye irritation persists: Get medical attention
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
P370 + P378	In case of fire: Use dry sand, dry chemical, or alcohol-resistant foam for extinction.
P210	Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P233	Keep container tightly closed
P102	Keep out of reach of children
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up
P243	Take precautionary measures against static discharge
P241	Use explosion-proof electrical, ventilating and lighting equipment
P242	Use only non-sparking tools
P271	Use only outdoors or in a well-ventilated area
P264	Wash hands thoroughly after handling
P280	Wear protective gloves and eye and face protection

GHS Classification(s):

Eye Irritation (Category 2)
Flammable Liquids (Category 2)
Specific Target Organ Toxicity - single exposure (Category 3)

Other hazards which do not result

in classification: Potential Health

Effects:

Organ	Description
Eyes	Can cause irritation to the eyes
Ingestion	Can be harmful if ingested
Inhalation	Can be harmful if inhaled. Can cause respiratory tract irritation. Vapors may cause drowsiness and dizziness.
Skin	Can cause irritation if absorbed through skin

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Identity: Isopropyl Alcohol
CAS #: 67-63-0
EINECS #: 200-661-7

ICSC #: 0554
RTECS #: NT8050000
UN #: 1219
EC #: 603-117-00-0

% Weight	Material	CAS
100	Isopropyl Alcohol	67-63-0

Synonyms are provided in Section 1.
Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

General Information	Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
Eye Contact	Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention
Inhalation	Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.
Ingestion	NEVER give anything by mouth to an unconscious person. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Immediately have victim drink several glasses of water to dilute. Seek medical attention.
Indication of any immediate medical attention and special treatment needed	If exposed or concerned, get medical advice and attention.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide	
Specific Hazards Arising from the chemical or mixture	Carbon oxides expected to be the primary hazardous combustion product	
Special protective equipment and precautions for fire fighters	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Keep unopened containers cool by spraying with water.	
Unusual Fire and Explosion Hazards	Vapors may travel to source of ignition and flash back	
Flammable Properties	Classification	OSHA/NFPA Class IB Flammable Liquid
	Flash Point	12° C (53°F) – closed cup
	Autoignition temp.	399° C (750°F)

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Do not inhale vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental Precautions	Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.

Methods for Containment and Clean Up	Contain spill, then collect with an electrically protected vacuum cleaner or by wet-brushing and put material into a convenient waste disposal container. Keep container closed.

7. HANDLING AND STORAGE

Precautions for safe handling	Do not get on skin or in eyes. Do not inhale vapors or mist. Keep away from sources of ignition-no smoking. Take measures to prevent the buildup of electrostatic charge.
Hygiene measures	Handle in accordance with good industrial hygiene and safety procedures. Use good personal hygiene practices.
Conditions for safe storage, including any incompatibilities	Keep container tightly closed in a cool, dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSRE CONTROL / PERSONAL PROTECTION

Control parameters

Occupational Exposure Limits

Component	Source	Type	Value	Note
Isopropyl Alcohol	US (OSHA)	TWA	400 ppm	
Isopropyl Alcohol	US (ACGIH)	TWA	200 ppm	
Isopropyl Alcohol	US (ACGIH)	STEL	400 ppm	

Exposure Control

Protective equipment

Appropriate engineering controls	General room or local exhaust ventilation is usually required to meet exposure limit(s). Electrical equipment should be grounded and conform to applicable electrical code.
Eye/face protection	Use chemical safety goggles and/or a full-face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166 (EU). Maintain eye wash fountain and quick-drench facilities in work area.
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 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.
Other skin and body protection	Wear impervious, flame retardant, antistatic protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

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

Information on basic physical and chemical properties

Appearance *(physical state, color, etc.)*	Liquid. Colorless.
Odor	Specific data not available
Odor threshold	Specific data not available
pH	Specific data not available
Freezing point	-90° C (-130° F)
Initial boiling point and boiling range	83°C (181°F)
Flash point	12°C (53°F) – Closed cup
Evaporation rate	Specific data not available
Flammability (solid, gas)	Flammable
Upper / Lower flammability or explosive limits	12.7% (V) / 2.0%(V)
Vapor pressure	4.4 kPa at 20°C (68°F)
Vapor density	1.05 where air = 1 at 20°C (68°F)
Relative density	0.858 g/cm^3 at 25°C (77°F)
Solubility(ies)	Miscible
Partition coefficient n-octanol/water(ies)	Log Pow: 0.05
Auto-ignition temperature	399°C (750°F)
Decomposition temperature	Specific data not available
Formula (ISOPROPYL ALCOHOL)	C3H8O
Molecular weight (ISOPROPYL ALCOHOL)	60.1 g/mol

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage conditions
Possibility of hazardous reactions	Vapors may form explosive mixture with air
Conditions to avoid (e.g., static discharge, shock or vibration)	Heat, flames and spark. Extreme temperatures and sunlight.
Incompatible materials	Oxidizing agents, Acid anhydrides, Aluminum, Halogenated compounds, Acids
Hazardous decomposition products	Carbon oxides are expected to be, under fire conditions, the primary hazardous decomposition products

11. TOXICOLOGICAL INFORMATION

Product Summary

Long term exposure (2 years) to Isopropyl Alcohol via inhalation at concentrations up to 5000 ppm caused to exposure related increases in tumors in animals. No data available for the teratogenicity, mutagenicity, or reproductive toxicity of this product. No data available to designate the product as causing specific target organ toxicity through repeated exposure. No data available to designate product as an aspiration hazard.

Acute Toxicity

LC50 Inhalation	Rat	16,000 mg/kg	8 hours

LD50 Dermal	Rabbit	12,800 mg/kg	
LD50 Oral	Rat	5,045 mg/kg	Behavioral abnormalities observed such as altered sleep time and decreased activity

Irritation:
Eyes
Rabbit - Irritating to eyes - 24 hours

Eyes (ISOPROPANOL)
Mildly irritating to the eye at an airborne concentration of 400 ppm, unpleasant at 800 ppm

Respiratory or Skin Sensitization
No data available

Skin
Rabbit - mild skin irritation

Specific target organ toxicity - single exposure (Globally Harmonized System)
Inhalation - May cause drowsiness or dizziness - central nervous system

Carcinogenicity
IARC: Group 3: Not classifiable as to its carcinogenicity to humans.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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.

Other Hazards

Organ	Description
Eyes	Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. May cause transient corneal injury.
Ingestion	Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure.
Inhalation	Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May cause narcotic effects in high concentration. Causes upper respiratory tract irritation. Inhalation of vapors may cause drowsiness and dizziness. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. The probable oral lethal dose in humans is 240 ml (2696 mg/kg), but ingestion of only 20 ml (224 mg/kg) has caused poisoning.
Skin	May cause irritation with pain and stinging, especially if the skin is abraded. Isopropanol has a low potential to cause allergic skin reactions; however, rare cases of allergic contact dermatitis have been reported. May be absorbed through intact skin. Dermal absorption has

12. ECOLOGICAL INFORMATION

Ecotoxicity (aquatic and terrestrial, where available)

Acute Fish Toxicity
LD50 / 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

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods	Dispose according to federal, state and local laws. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Authority. Waste is suitable for incineration.

14. TRANSPORTATION INFORMATION

U.S. (D.O.T.)

Proper Shipping Name:	Isopropanol
Hazard Class:	Class 3
Packing Group:	II
UN/NA:	1219
Labels:	Flammable Liquid

IMDG

Proper Shipping Name:	ISOPROPANOL
Hazard Class:	Class 3
Packing Group:	II
UN/NA:	1219
EMS-No:	F-E, S-D
Marine pollutant:	No

IATA

Proper Shipping Name:	Isopropanol
Hazard Class:	Class 3
Packing Group:	II
UN/NA:	1219

15. REGULATORY INFORMATION

OSHA Hazards
Flammable liquid, Target Organ Effect, Irritant

All ingredients are on the following inventories or are exempted from listing.

Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS
Japan	ENCS/ISHL
Korea	ECL
New Zealand	NZIoC
Philippines	PICCS
United States of America	TSCA

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: ISOPROPYL ALCOHOL (CAS# 67-63-0) Revision date: 1987-01-01

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

CERCLA
No chemicals in this material with known CAS numbers are subject to the reporting requirements of CERCLA

Massachusetts Right to Know Components
Isopropyl Alcohol CAS-No. 67-63-0 Revision Date 1987-01-01

Pennsylvania Right to Know Components
Isopropyl Alcohol CAS-No. 67-63-0 Revision Date 1987-01-01 New Jersey Right to Know Components
Isopropyl Alcohol CAS-No. 67-63-0 Revision Date 1987-01-01

California Prop 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

NFPA:

The information contained in this Safety Data Sheet, as of the issue date, is believed to be true and correct. However, the accuracy or completeness of this information and any recommendations or suggestions are made without warranty or guarantee. Since the conditions of use are beyond the control of our company, it is the responsibility of the user to determine the conditions of safe use of this product. The information in this sheet does not represent analytical specifications; for this information contact Tersus Environmental.

Disclaimer: This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. All recommendations for the use of our products, weather given by us, orally or to be implied from data or lab tests results by us, are based on the current state of our knowledge at the time those recommendations are made. When additional information is obtained, these recommendations may be updated. They may also be influenced by circumstances outside our control. Notwithstanding, such recommendation the user is responsible that the product as supplied by us is suitable to the process or purpose he intends to use it. The user of the product is solely responsible for compliance with all laws and regulations applying to the use of this product. Since we cannot control the application, use or processing of the product, we do not accept responsibility. Therefore, the user should assure that the intended use of the product will not infringe in any party's intellectual property right.

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End of Safety Data Sheet