SAFETY DATA SHEET

211USP/NFPL05 - Isopropyl Alcohol 70%

1. IDENTIFICATION OF SUBSTANCE / MIXTURE AND OF SUPPLIER

Product Identifier: High Purity Chemicals

Synonyms: Isopropanol; Isopropyl Alcohol; 2-Propanol; sec-propyl alcohol; dimethylcarbinol; sec-propanol; Rubbing alcohol; IPA 70%;

Other means of identification: CAS No. 67-63-0
EINECS No. 200-661-7

Recommended use of the chemical and restrictions on use:
General use organic solvent

Supplier Details:
CleanPro
6200 Bury Drive
Eden Prairie, MN 55346
Ph: 952.903.0333
Fx: 952.903.0315
CCN17213

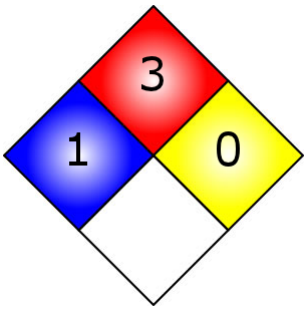
Emergency Contact: **CHEMTREC: 1.800.424.9300 (USA) / +1.703.527.3887 (International)**

2. HAZARDS IDENTIFICATION

OSHA Hazards:
Flammable liquid, Target Organ Effect, Irritant

Target Organs:
Cardiovascular system, Gastrointestinal tract, Kidney, Liver, Nerves

NFPA



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 2A)
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 can cause drowsiness and dizziness.
Skin	Can cause irritation if absorbed through skin.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical identity: Isopropyl Alcohol 70%
Common name / Synonym: Isopropanol; Isopropyl Alcohol; 2-Propanol; sec-propyl alcohol; dimethylcarbinol; sec-propanol; Rubbing alcohol; IPA 70%;
CAS number: 67-63-0
EINECS number: 200-661-7
ICSC number: 0554
RTECS #: NT8050000
UN #: 1219
EC #: 603-117-00-0

% Volume	Material	CAS
68 - 72	Isopropyl Alcohol	67-63-0
28 - 32	Water	7732-18-5

4. FIRST AID MEASURES

General advice

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.

Skin

Immediately flush affected area with plenty of water while removing contaminated clothing. Wash contaminated clothing before reuse. Contact a doctor. If irritation persists, get medical attention.

Inhalation

Remove person to fresh air. If signs/symptoms continue, get medical attention. Give oxygen or artificial respiration as needed.

Eyes

Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation persists, seek medical attention.

Ingestion

DO NOT induce vomiting. If vomiting does occur, have victim lean forward to prevent aspiration. Rinse mouth with water. Seek medical attention. Never give anything by mouth to an unconscious individual.

5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

SMALL FIRE: Use dry chemicals, CO2, water spray or alcohol-resistant foam. LARGE FIRE: Use water spray, water fog or alcohol-resistant foam. Cool all affected containers with flooding quantities of water.

Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):

May explode when heated. Closed containers may rupture and explode during runaway polymerization. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Special protective equipment and precautions for firefighters:

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:

- May produce a floating fire hazard.
- Static ignition hazard can result from handling and use.
- Vapors may travel to source of ignition and flash back.
- Vapors may settle in low or confined spaces.

Carbon oxides expected to be the primary hazardous combustion product.

Flammable Properties
Classification
OSHA/NFPA Class IB Flammable Liquid.
Flash point
18.3 °C (64.9 °F) - Closed Cup
Autoignition temperature
399 °C (750 °F) (for Isopropyl Alcohol 99%)

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6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

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 and materials for containment and cleaning up:

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

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7. HANDLING AND STORAGE

Precautions for safe handling:

Do not get on skin or in eyes. Do not inhale vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge. Open and handle container with care. Metal containers involved in the transfer of this material should be grounded and bonded.

Conditions for safe storage, including any incompatibilites:

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.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters, e.g., occupational exposure limit values or biological limit values:

Occupational Exposure Limits

Component	Source	Type	Value	Note
Isopropyl Alcohol	US (OSHA)	STEL	500 ppm	
Isopropyl Alcohol	US(ACGIH)	STEL	400 ppm	
Isopropyl Alcohol	US (ACGIH)	TWA	200 ppm	

Isopropyl Alcohol	US (OSHA)	TWA	400 ppm	

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.

Individual protection measures, such as 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.

Eye 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.

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

Appearance *(physical state, color, etc.)*	Liquid. Colorless, clear.
Odor	Specific data not available
Odor threshold	Specific data not available
pH	Specific data not available
Freezing point	-90 °C (-130 °F) (for Isopropyl Alcohol 99%)
Initial boiling point and boiling range	83 °C (181°F) (for Isopropyl Alcohol 99%)
Flash point	18.3°C (64.9 °F) - Closed Cup
Evaporation rate	Specific data not available
Flammability (solid, gas)	Flammable
Upper / Lower flammability or explosive limits	12.7% (V) / 2% (V) (for Isopropyl Alcohol 99%)
Vapor pressure	43.2 hPa (32.4 mmHg) at 20.0 °C (68.0 °F)

Vapor Density	2.1 (for Isopropyl Alcohol 99%)
Relative Density	Specific data not available
Solubility(ies)	Miscible
Partition coefficient n-octanol/water(ies)	log Pow: 0.05 (for Isopropyl Alcohol 99%)
Auto-ignition temperature	399 °C (750°F) (for Isopropyl Alcohol 99%)
Decomposition temperature	Specific data not available
Formula (ISOPROPYL ALCOHOL)	C3H8O
Formula (WATER)	H2O
Molecular Weight (ISOPROPYL ALCOHOL)	60.1 g/mol
Molecular Weight (WATER)	18.02 g/mol

10. STABILITY AND REACTIVITY

Chemical Stability	Avoid exposure to air any longer than necessary so as to prevent peroxide formation. 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 sparks. Extreme temperatures and direct sunlight.
Incompatible materials	Oxidizing agents, Acid anhydrides, Aluminium, Halogenated compounds, Acids
Hazardous decomposition products	Carbon oxides are expected to be, under fire conditions, the primary hazardous decomposition products.

11. TOXICOLOGICAL INFORMATION

- Water 7732-18-5

Product Summary:
No data available for the teratogenic, mutagenic, or reproductive toxicity effects of this product. No data available to designate the product as causing specific target organ toxicity through single or repeated exposure. No data available to designate product as an aspiration hazard or as a respiratory or skin sensitizer.

Acute Toxicity:

No data available	Oral LD50	Dermal LD50	Inhalation LC50

Irritation:

Eyes
No data available.

Skin
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable or confirmed human carcinogen by IARC.
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	No known hazards.
Ingestion	No known hazards.
Inhalation	Can be harmful if inhaled. Can cause irritation to upper respiratory tract.
Skin	No known hazards.

- Isopropyl Alcohol 67-63-0

Product Summary:
Long-term exposure (2 years) to Isopropyl Alcohol via inhalation at concentrations up to 5000 ppm caused no 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	5045 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 been considered toxicologically insignificant.
Chronic	Prolonged exposure can be irritating to mucous membranes, skin, and the respiratory system. Can cause liver and kidney damage.

12. ECOLOGICAL INFORMATION

- Water 7732-18-5

Ecotoxicity (aquatic and terrestrial, where available):
Ecotoxicity

Not Applicable

Persistence and degradability:
No data available

Bioaccumulative potential:
No data available

Other adverse effects:
No data available

- Isopropyl Alcohol 67-63-0

Ecotoxicity (aquatic and terrestrial, where available):
Acute Fish Toxicity (ISOPROPANOL)
LC50 / 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 (ISOPROPANOL)
EC50 / 72 hours Desmodesmus subspicatus > 2,000 mg/L

Toxicity to Daphnia and other aquatic invertibrates
Immobilization EC50 / 24h / 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

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:

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.

14. TRANSPORT INFORMATION

Description of waste residues and information on their safe handling and methods of disposal:

UN number	1219
UN proper shipping name	Isopropanol
Transport hazard class(es)	3
Packing group *(if applicable)*	II

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

Safety, health and environmental regulations specific for the product in question:

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

Water CAS-No. 7732-18-5

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

Water CAS-No. 7732-18-5

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.

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16. OTHER INFORMATION:
INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS

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