1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

SDS Name:	Isopropyl Alcohol 70% v/v
Product ID :	IPA4
Synonyms:	Propanol-2, Isopropanol; C_3H_8O
Chemical Family:	Mixture; CAS: 67-63-0
Application:	General purpose Disinfectant, solvent.
Distributed by:	Alberta Veterinary Laboratory Ltd. 411- 19th Street South East Calgary, Alberta Canada T2E6J7
For information, call:	(403) 456-2245
Emergency number:	(613) 996-6666 (CANUTEC) 1-800 463- 5060 OR (418) 656-8090 (Control Poison Center)

2. HAZARDS IDENTIFICATION

Flam. Liq. 2 H225
Eye Irrit. 2A H319
STOT SE 3 H336

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)

P501	Dispose of contents and container according to federal, state/provincial and municipal regulations.

P305 + P351 + P338 + P337 + P313	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention
P304 + 340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P370 + P378	In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide for extinction.
P312	Call a doctor if you feel unwell
P210	Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
P233	Keep container tightly closed.
P403	Store in a well-ventilated place.
P405	Store locked up
P264	Wash hands thoroughly after handling.
P280	Wear eye protection.
P261	Avoid breathing mist, spray, vapours
P271	Use only outdoors or in a well-ventilated area

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical identity: Alcohol
Common name / Synonym: Isopropyl Alcohol 70%, 2-Propanol
CAS number: 67-63-0

Ingredients	Percentage (v/v)	CAS
Isopropyl Alcohol	70%	67– 63-0
Water	30%	7732-18-5

4. FIRST AID MEASURES

First-aid measures general:

Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital. Never give alcohol to drink.

First-aid measures after inhalation:

Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact:

Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

First-aid measures after eye contact:

Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion:

Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Give activated charcoal. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital. Doctor: gastric lavage.

Symptoms/injuries after inhalation:

EXPOSURE TO HIGH CONCENTRATIONS: Coughing. Dry/sore throat. Central nervous system depression. Dizziness. Headache. Narcosis.

Symptoms/injuries after skin contact:

Dry skin.

Symptoms/injuries after eye contact:

Irritation of the eye tissue.

Symptoms/injuries after ingestion:

AFTER ABSORPTION OF HIGH QUANTITIES: Central nervous system depression. Headache. Dilation of the blood vessels. Low arterial pressure. Nausea. Vomiting. Abdominal pain. Disturbed motor response. Disturbances of consciousness. FOLLOWING SYMPTOMS MAY APPEAR LATER: Body temperature fall. Slowing respiration.

Chronic symptoms:

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Red skin. Dry skin. Itching. Cracking of the skin. Skin rash/inflammation. Impaired memory.

5. FIRE FIGHTING MEASURES

Extinguishing Media

Suitable extinguishing media: Water spray. Polyvalent foam. Alcohol-resistant foam. BC powder. Carbon dioxide.
Unsuitable extinguishing media: Solid water jet ineffective as extinguishing medium.

Special hazards arising from the substance mixture

Fire hazard:
DIRECT FIRE HAZARD. Highly flammable. Gas/vapour flammable with air within explosion limits. INDIRECT FIRE HAZARD. May be ignited by sparks. Gas/vapour spreads at floor level: ignition hazard.

Explosion hazard:
DIRECT EXPLOSION HAZARD. Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD. may be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard".

Reactivity:
Upon combustion: CO and CO2 are formed. Violent to explosive reaction with (strong) oxidizers. Prolonged storage/in large quantities: may form peroxides.

Advice for firefighters

Firefighting instructions:
Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat.

Protection during firefighting:
Heat/fire exposure: compressed air/oxygen apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel

Protective equipment: Gloves. Protective goggles. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus.

Emergency procedures: Keep upwind. Mark the danger area. Consider evacuation. Seal off low-lying areas. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosion proof appliances and lighting equipment. Keep containers closed. Wash contaminated clothes.

For emergency responders

Protective equipment: Equip cleanup crew with proper protection. **Emergency procedures:** Stop leak if safe to do so. Ventilate area.

Environmental Precautions

Prevent spreading in sewers.

Methods and material for containment and cleaning up

For containment:

Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute/disperse combustible gas/vapour with water curtain. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills.

Methods for cleaning up:

Take up liquid spill into absorbent material, e.g.: dry sand/earth/vermiculite or powdered limestone. Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

7. HANDLING AND STORAGE

Precautions for safe handling:

Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Handle uncleaned empty containers as full ones. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tightly closed. Measure the concentration in the air regularly. Work under local exhaust/ventilation.

Hygiene Measures:

Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Conditions for safe storage, including any incompatibilities:

Incompatible products:

Oxidizing agent. silver nitrate. Sodium hypochlorite.

Incompatible materials:

Direct sunlight. Heat sources. Sources of ignition.

Heat and ignition sources:

KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.

Prohibitions on mixed storage:

KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) acids. (strong) bases. amines. halogens.

Storage area:

Store in a cool area. Store in a dry area. Ventilation at floor level. Fireproof storeroom. Provide for an automatic sprinkler system. Provide for a tub to collect spills. Provide the tank with earthing. May be stored under nitrogen. Meet the legal requirements.

Special rules on packaging:

SPECIAL REQUIREMENTS: closing. with pressure relief valve. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

Packaging materials:

SUITABLE MATERIAL: stainless steel. monel steel. carbon steel. copper. nickel. bronze. glass. Teflon. polyethylene. polypropylene. zinc. MATERIAL TO AVOID: steel with rubber inner lining, aluminum.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

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

Isopropanol 70% v/v		
Source	**Type**	**Value**
US (OSHA PEL)	TWA	4000 ppm/980 mg/m^3
US (ACGIH)	TWA	200 ppm
US (ACGIH)	STEL	200 ppm

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: butyl rubber. nitrile rubber. viton. polyethylene/ethylenevinylalcohol. GIVE GOOD RESISTANCE: neoprene. GIVE LESS RESISTANCE: PVC. neoprene/natural rubber. GIVE POOR RESISTANCE: natural rubber. polyethylene. PVA.

Hand protection:

Gloves.

Eye protection:

Safety glasses.

Skin and body protection:

Protective clothing.

Respiratory protection:

Wear gas mask with filter type A if conc. in air > exposure limit.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance *(physical state, color, etc.)*	Liquid. Colorless liquid / invisible vapor.
Odor	Alcohol odour, stuffy odour, mild odour
Freezing point	No data available
Initial boiling point and boiling range	82 °C
Flash point	12 °C
Evaporation rate	2.3 (butylacetate=1), 21 (ether=1)
Flammability (solid, gas)	Flammable
Upper / Lower flammability or explosive limits	2 – 13 vol %, 50 – 335 g/m^3
Vapor pressure	44 hPa, 229 hPa at 50°C
Vapor Density	2.1 at 20°C

Relative Density	0.88 g/mL
Solubility(ies)	completely soluble
Decomposition temperature	Not pertinent
Critical temperature	235°C
Critical Pressure	47600 hPa
Self-ignition temperature	399°C
Molecular Weight	60.10 g/mol
Minimum ignition energy	0.65 mJ
Specific conductivity	5.8 µS/m
Saturation concentration	106 g/m^3
VOC content	100 %
Other properties	Gas/vapour heavier than air at 20°C. Clear. Volatile.

10. STABILITY AND REACTIVITY

Reactivity	Upon combustion: CO and CO2 are formed. Violent to explosive reaction with (strong) oxidizer. Prolonged storage/in large quantities: may form peroxides.
Chemical Stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	No additional information available
Conditions to avoid (e.g., static discharge, shock or vibration)	Direct sunlight. Heat. High temperature. Incompatible materials. Open flame. Sparks
Incompatible materials	May react violently with alkalis. May react violently with acids.
Hazardous decomposition products	Carbon dioxide. Carbon monoxide.

11. TOXICOLOGICAL INFORMATION

Acute toxicity:

Not classified

Isopropanol 70% v/v 67-63-0	
LD50 oral rat	5045 mg/kg (5840 mg/kg bodyweight; Rat; Rat; Experimental value,5840 mg/kg bodyweight; Rat; Rat; Experimental value)
LD50 dermal rabbit	12870 mg/kg (16.4; Rabbit; Rabbit; Experimental value,16.4; Rabbit; Rabbit; Experimental value)
LC50 inhalation rat (mg/l)	73 mg/l/4h (Rat)
Water (7732-18-5)	
LD50 oral rat	≥ 90000 mg/kg

Skin corrosion/irritation: Not classified

Serious eye damage/irritation: Causes serious eye irritation.

Respiratory or skin sensitization: Not classified

Germ cell mutagenicity: Not classified

Carcinogenicity: Not classified

Isopropanol 70% v/v 67-63-0	
IARC group	3 – Not classifiable

Reproductive toxicity: Not classified

Specific target organ toxicity (single exposure): May cause drowsiness or dizziness. Specific target organ toxicity (repeated exposure): Not classified

Aspiration hazard: Not classified

Symptoms/injuries after inhalation: EXPOSURE TO HIGH CONCENTRATIONS: Coughing. Dry/sore throat. Central nervous system depression. Dizziness. Headache. Narcosis.

Symptoms/injuries after skin contact: Dry skin.

Symptoms/injuries after eye contact: Irritation of the eye tissue.

Symptoms/injuries after ingestion: AFTER ABSORPTION OF HIGH QUANTITIES: Central nervous system depression. Headache. Dilation of the blood vessels. Low arterial pressure. Nausea. Vomiting. Abdominal pain. Disturbed motor response. Disturbances of consciousness. FOLLOWING SYMPTOMS MAY APPEAR LATER: Body temperature fall. Slowing respiration.

Chronic symptoms: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Red skin. Dry skin. Itching. Cracking of the skin. Skin rash/inflammation. Impaired memory.

12. ECOLOGICAL INFORMATION

Toxicity

Ecology - general:
environment: not applicable.

Classification concerning the

Ecology - air:

TA-Luft Klasse 5.2.5.

Ecology - water:
to fishes (LC50(96h)

Ground water pollutant. Not harmful

>1000 mg/l). Not harmful to invertebrates (Daphnia) (EC50 (48h) > 1000 mg/l). Not harmful to algae (EC50 (72h) >1000 mg/l). Inhibition of activated sludge.

Isopropanol 70% v/v 67-63-0	
LC50 fishes 1	4200 mg/l (96 h; Rasbora heteromorpha; Flow-through system)
EC50 Daphnia 1	> 10000 mg/l (48 h; Daphnia magna)
LC50 fish 2	9640 mg/l (96 h; Pimephales promelas; Lethal)
EC50 Daphnia 2	13299 mg/l (48 h; Daphnia magna)
Threshold limit algae 1	> 1000 mg/l (72 h; Scenedesmus subspicatus; Growth rate)
Threshold limit algae 2	1800 mg/l (72 h; Algae; Cell numbers)

Persistence and degradability

Isopropanol 70% v/v 67-63-0	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. Biodegradable in the soil under anaerobic conditions. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	1.19 g O^2/g substance
Chemical oxygen demand (COD)	2.23 g O^2/g substance
ThOD	2.40 g O^2/g substance
BOD (% of ThOD)	0.49 % ThOD

Bio-accumulative Potential

Isopropanol 70% v/v 67-63-0	
Log Pow	0.05 (Experimental value)
Bio-accumulative potential	Low potential for bioaccumulation (Log Kow < 4).

Mobility in soil

Isopropanol 70% v/v 67-63-0	
Surface tension	0.021 N/m (25 °C)

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste disposal recommendations:

Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste.
Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery. Do not discharge into surface water. Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

Additional information:

LWCA (the Netherlands): KGA category 03.

Hazardous waste according to Directive 2008/98/EC.

14. TRANSPORT INFORMATION

In accordance with DOT

Transport document description:	UN1219 Isopropanol, 3, II
UN-No.(DOT):	1219
DOT NA no.:	UN1219
DOT Proper Shipping Name:	Isopropanol
Department of Transportation (DOT) Hazard Classes:	3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT):	3 - Flammable liquid 
Packing group (DOT):	II - Medium Danger
DOT Special Provisions (49 CFR 172.102):	IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. T4 - 2.65 178.274(d)(2) Normal .....178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = 97 / (1 + a (tr - tf)) Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
DOT Packaging Exceptions (49 CFR 173.xxx):	4b;150 DOT Packaging Non Bulk (49 CFR 173.xxx): 202
DOT Packaging Bulk (49 CFR 173.xxx):	242
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27):	5 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75):	60 L

DOT Vessel Stowage Location:	B - (i) The material may be stowed ‘‘on deck’’ or ‘‘under deck’’on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) ‘‘On deck only’’ on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded.

Additional Information

Other information:	No supplementary information available.
State during transport (ADR-RID):	as liquid.

ADR

Transport document description:	UN 1219 Isopropanol (isopropyl alcohol), 3, II, (D/E)
Packing group (ADR):	II
Class (ADR):	3 - Flammable liquids
Hazard identification number (Kemler No.):	33
Classification code (ADR):	F1
Tunnel restriction code:	D/E

Transport by sea

UN-No. (IMDG):	1219
Class (IMDG):	3 - Flammable liquids
EmS-No. (1):	F-E
EmS-No. (2):	S-D

Air transport

UN-No.(IATA):	1219
Class (IATA):	3 - Flammable Liquids
Packing group (IATA):	II - Medium Danger

15. REGULATORY INFORMATION

U.S.TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

Note: Not available

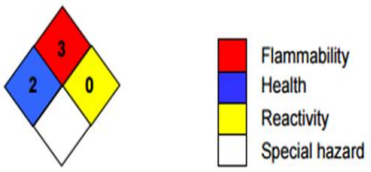
U.S. Regulatory Rules

Ingredients	CERCLA/SARA-Section 302	SARA (311,312) Hazard Class	CERCLA/SARA – Section 313
Isopropyl Alcohol	Not listed	Not listed	Listed

California Proposition 65: Not listed
MA Right to know List: Listed
New Jersey Right to know List: Listed
Pennsylvania Right to know List: Listed

WHMIS Hazardous Class: B2 Flammable Liquids
D2B Toxic Materials

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

16. OTHER INFORMATION

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Alberta Veterinary Laboratory Ltd. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Alberta Veterinary Laboratory Ltd. has been advised of the possibility of such damages.

This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all of the information required by the CPR

Revision Date: 2022-03-16