

Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table><tr><td>Health Hazard</td><td>2</td></tr><tr><td>Fire Hazard</td><td>3</td></tr><tr><td>Reactivity</td><td>0</td></tr></table>	Health Hazard	2	Fire Hazard	3	Reactivity	0	 See Section 15.
Health Hazard	2							
Fire Hazard	3							
Reactivity	0							

Section 1. Chemical Product and Company Identification		Page Number: 1	
Common Name/ Trade Name	Isopropyl Alcohol, 70%	Catalog Number(s).	IS-1011, IS-120, IS-1012
		CAS#	Mixture.
Manufacturer	Brainerd Chemical Co., Inc. 1200 North Peoria Tulsa, Oklahoma 74106	RTECS	Not applicable.
		TSCA	TSCA 8(b) inventory: Isopropyl alcohol; Water
Commercial Name(s)	Not available.	CI#	Not available.
Synonym	2-Propanol, 70%; Isopropanol, 70%; Isopropyl Rubbing Alcohol	<u>IN CASE OF EMERGENCY</u> <u>CHEMTREC (24-hr) 800-424-9300</u> CALL (918) 622-1214	
Chemical Name	Not applicable.		
Chemical Family	Not available.		
Chemical Formula	Not applicable.		
Supplier	Brainerd Chemical Co., Inc. 1200 North Peoria Tulsa, Oklahoma 74106		

Section 2. Composition and Information on Ingredients

		Exposure Limits			
Name	CAS #	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
1) Isopropyl alcohol	67-63-0	980	1225		70
2) Water	7732-18-5				30

Toxicological Data on Ingredients	Isopropyl alcohol: ORAL (LD50): Acute: 5045 mg/kg [Rat]. 3600 mg/kg [Mouse]. 6410 mg/kg [Rabbit]. DERMAL (LD50): Acute: 12800 mg/kg [Rabbit].
-----------------------------------	--

Section 3. Hazards Identification

Potential Acute Health Effects	Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion. . Slightly hazardous in case of skin contact (sensitizer, permeator). Non-corrosive for skin. Non-corrosive to the eyes. Non-corrosive for lungs.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Classified A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC [Isopropyl alcohol]. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Development toxin [POSSIBLE] [Isopropyl alcohol]. The substance may be toxic to kidneys, liver, skin, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Continued on Next Page

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Flammable.
Auto-Ignition Temperature	The lowest known value is 399°C (750.2°F) (Isopropyl alcohol).
Flash Points	LOWEST KNOWN VALUE CLOSED CUP: 75 deg. F
Flammable Limits	The greatest known range is LOWER: 2% UPPER: 12.7% (Isopropyl alcohol)
Products of Combustion	These products are carbon oxides (CO, CO ₂).
Fire Hazards in Presence of Various Substances	Highly flammable in presence of open flames and sparks, of heat. Flammable in presence of oxidizing materials. Non-flammable in presence of shocks
Explosion Hazards in Presence of Various Substances	Slightly explosive in presence of open flames and sparks, of heat. Non-explosive in presence of shocks.
Fire Fighting Media and Instructions	Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.
Special Remarks on Fire Hazards	Vapor may travel considerable distance to source of ignition and flash back. CAUTION: MAY BURN WITH NEAR INVISIBLE FLAME. Hydrogen peroxide sharply reduces the autoignition temperature of Isopropyl alcohol. After a delay, Isopropyl alcohol ignites on contact with dioxgenyl tetrafluoroborate, chromium trioxide, and potassium tert-butoxide. When heated to decomposition it emits acrid smoke and fumes. (Isopropyl alcohol)
Special Remarks on Explosion Hazards	Secondary alcohols are readily autooxidized in contact with oxygen or air, forming ketones and hydrogen peroxide. It can become potentially explosive. It reacts with oxygen to form dangerously unstable peroxides which can concentrate and explode during distillation or evaporation. The presence of 2-butanone increases the reaction rate for peroxide formation. Explosive in the form of vapor when exposed to heat or flame. May form explosive mixtures with air. Isopropyl alcohol + phosgene forms isopropyl chloroformate and hydrogen chloride. In the presence of iron salts, thermal decomposition can occur, which in some cases can become explosive. A homogeneous mixture of concentrated peroxides + isopropyl alcohol are capable of detonation by shock or heat. Barium perchlorate + isopropyl alcohol gives the highly explosive alkyl perchlorates. It forms explosive mixtures with trinitormethane and hydrogen peroxide. It produces a violent explosive reaction when heated with aluminum isopropoxide + crotonaldehyde. Mixtures of isopropyl alcohol + nitroform are explosive. (Isopropyl alcohol)

Continued on Next Page

Section 6. Accidental Release Measures

Small Spill	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
Large Spill	Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Precautions	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids.
Storage	Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves (impervious).
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	Isopropyl alcohol TWA: 983 STEL: 1230 (mg/m ³) [Australia] TWA: 200 STEL: 400 (ppm) from ACGIH (TLV) [United States] [1999] TWA: 980 STEL: 1225 (mg/m ³) from NIOSH TWA: 400 STEL: 500 (ppm) from NIOSH TWA: 400 STEL: 500 (ppm) [United Kingdom (UK)] TWA: 999 STEL: 1259 (mg/m ³) [United Kingdom (UK)] TWA: 400 STEL: 500 (ppm) from OSHA (PEL) [United States] TWA: 980 STEL: 1225 (mg/m ³) from OSHA (PEL) [United States] Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Physical state and appearance	Liquid.	Odor	Alcohol like.
Molecular Weight	Not applicable.	Taste	Not available.
pH (1% soln/water)	Neutral.	Color	Clear Colorless.
Boiling Point	The lowest known value is 82.5°C (180.5°F) (Isopropyl alcohol). Weighted average: 87.75°C (189.9°F)		
Melting Point	May start to solidify at -88.5°C (-127.3°F) based on data for: Isopropyl alcohol.		
Critical Temperature	The lowest known value is 235°C (455°F) (Isopropyl alcohol).		
Specific Gravity	Weighted average: 0.84 (Water = 1)		
Vapor Pressure	The highest known value is 4.4 kPa (@ 20°C) (Isopropyl alcohol). Weighted average: 3.77 kPa (@ 20°C)		
Vapor Density	The highest known value is 2.07 (Air = 1) (Isopropyl alcohol). Weighted average: 1.63 (Air = 1)		
Volatility	Not available.		
Odor Threshold	The highest known value is 22 ppm (Isopropyl alcohol)		

Continued on Next Page

Isopropyl Alcohol, 70%

Page Number: 4

Water/Oil Dist. Coeff.	The product is equally soluble in oil and water.
Ionicity (in Water)	Not available.
Dispersion Properties	See solubility in water, methanol, diethyl ether, n-octanol, acetone.
Solubility	Easily soluble in cold water, hot water, methanol, diethyl ether, n-octanol, acetone.

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Heat, flame, ignition sources, incompatible materials
Incompatibility with various substances	Reactive with oxidizing agents, acids, alkalis.
Corrosivity	Non-corrosive in presence of glass.
Special Remarks on Reactivity	Reacts violently with hydrogen + palladium combination, nitroform, oleum, COCl ₂ , aluminum triisopropoxide, oxidants Incompatible with acetaldehyde, chlorine, ethylene oxide, isocyanates, acids, alkaline earth, alkali metals, caustics, amines, crotonaldehyde, phosgene, ammonia. Isopropyl alcohol reacts with metallic aluminum at high temperatures. Isopropyl alcohol attacks some plastics, rubber, and coatings. Vigorous reaction with sodium dichromate + sulfuric acid. (Isopropyl alcohol)
Special Remarks on Corrosivity	Not available.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Absorbed through skin. Eye contact. Inhalation.
Toxicity to Animals	Acute oral toxicity (LD50): 5143 mg/kg (Mouse) (Calculated value for the mixture). Acute dermal toxicity (LD50): 18286 mg/kg (Rabbit) (Calculated value for the mixture).
Chronic Effects on Humans	CARCINOGENIC EFFECTS: Classified A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC [Isopropyl alcohol]. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Development toxin [POSSIBLE] [Isopropyl alcohol]. Contains material which may cause damage to the following organs: kidneys, liver, skin, central nervous system (CNS).
Other Toxic Effects on Humans	Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (sensitizer, permeator).
Special Remarks on Toxicity to Animals	Not available.
Special Remarks on Chronic Effects on Humans	May cause adverse reproductive/teratogenic effects (fertility, fetotoxicity, developmental abnormalities(developmental toxin)) based on animal studies. Detected in maternal milk in human. (Isopropyl alcohol)
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: May cause mild skin irritation, and sensitization. Eyes: Can cause eye irritation. Inhalation: Breathing in small amounts of this material during normal handling is not likely to cause harmful effects. However, breathing large amounts may be harmful and may affect the respiratory system and mucous membranes (irritation), behavior and brain (Central nervous system depression - headache, dizziness, drowsiness, stupor, incoordination, unconsciousness, coma and possible death), peripheral nerve and sensation, blood, urinary system, and liver. Ingestion: Swallowing small amounts during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. Swallowing large amounts may cause gastrointestinal tract irritation with nausea, vomiting and diarrhea, abdominal pain. It also may affect the urinary system, cardiovascular system, sense

Continued on Next Page

organs, behavior or central nervous system (somnolence, generally depressed activity, irritability, headache, dizziness, drowsiness), liver, and respiratory system (breathing difficulty).
 Chronic Potential Health Effects:
 May cause defatting of the skin and dermatitis and allergic reaction.
 May cause adverse reproductive effects based on animal data (studies). (Isopropyl alcohol)

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The product itself and its products of degradation are not toxic.
Special Remarks on the Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Disposal	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
----------------	--

Section 14. Transport Information

DOT Classification	CLASS 3: Flammable liquid.
Identification	: ALCOHOLS, N.O.S., LTD QTY UN1987, PG: III
Special Provisions for Transport	Not available.
DOT (Pictograms)	

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations	Connecticut hazardous material survey: Isopropyl alcohol Illinois toxic substances disclosure to employee act: Isopropyl alcohol Rhode Island RTK hazardous substances: Isopropyl alcohol Pennsylvania RTK: Isopropyl alcohol Florida: Isopropyl alcohol Minnesota: Isopropyl alcohol Massachusetts RTK: Isopropyl alcohol New Jersey: Isopropyl alcohol New Jersey spill list: Isopropyl alcohol TSCA 8(b) inventory: Isopropyl alcohol; Water TSCA 4(a) final testing order: Isopropyl alcohol TSCA 8(a) IUR: Isopropyl alcohol TSCA 8(d) H and S data reporting: Isopropyl alcohol: Effective date: 12/15/86 Sunset Date: 12/15/96 TSCA 12(b) one time export: Isopropyl alcohol SARA 313 toxic chemical notification and release reporting: Isopropyl alcohol 70%
California Proposition 65 Warnings	California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found. California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Continued on Next Page

Isopropyl Alcohol, 70%

Page Number: 6

Other Regulations OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications	WHMIS (Canada)	CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2B: Material causing other toxic effects (TOXIC).	
	DSCL (EEC)	R11- Highly flammable. R36- Irritating to eyes.	S2- Keep out of the reach of children. S46- If swallowed, seek medical advice immediately and show this container or label.

HMIS (U.S.A.)

Health Hazard	2
Fire Hazard	3
Reactivity	0
Personal Protection	E

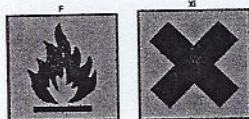
National Fire Protection Association (U.S.A.)

Health		Flammability
		Reactivity
		Specific hazard

WHMIS (Canada) (Pictograms)



DSCL (Europe) (Pictograms)



TDG (Canada) (Pictograms)



ADR (Europe) (Pictograms)



Protective Equipment



Gloves (impervious).



Lab coat.



Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.



Safety glasses.

Continued on Next Page

Section 16. Other Information

MSDS Code

References Not available.

Other Special
Considerations Not available.

Validated by Mathew A. Brainerd 6/23/2004.

Verified by Mathew A. Brainerd
Printed 8/25/2004.

CALL (918) 622-1214

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Brainerd Chemical Co., Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.