








# Material Safety Data Sheet

WHMIS (Pictograms)	WHMIS (Classification)	Protective Clothing
 	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).	  

## Section 1. Product and Company Identification

<b>Product Name / Trade name</b>	<b>Lock De-Icer</b>	<b>Associated Product's Item Code</b>	<b>15-276</b>
<b>Synonym</b>	Isopropanol, IPA	<b>CAS #</b>	67-63-0
<b>Chemical Family</b>	Aliphatic alcohol.	<b>DSL</b>	CEPA DSL: Isopropanol
<b>Chemical Formula</b>	(CH <sub>3</sub> ) <sub>2</sub> CHOH	<b>Validation Date</b>	14/06/2001.
<b>Manufacturer</b>	Recochem Inc. 850 Montee de Liesse Montreal, Quebec 514-341-3550	<b>Print Date</b>	28/06/2001.
<b>Material Uses</b>	Consumer products: Lock de-icer.	<b>In Case of Emergency</b>	Recochem Inc. Communication and Regulatory Affairs Department (905) 791-1788

## Section 2. Hazardous Ingredients

Name	CAS #	% by Weight	Exposure Limits	
			Canadian Values (ACGIH)	U.S. Values (OSHA)
1) Isopropanol	67-63-0	100	TWA: 400 ppm from ACGIH (Canada, 1999). Period: 8 hour(s). STEL: 500 ppm from ACGIH (Canada, 1999). Period: 15 minute(s). TWA: 983 mg/m <sup>3</sup> from ACGIH (Canada, 1999). Period: 8 hour(s). STEL: 1230 mg/m <sup>3</sup> from ACGIH (Canada, 1999). Period: 15 minute(s).	<sup>1)</sup> Isopropanol TWA: 400 ppm from OSHA (United States, 1999). Period: 8 hour(s). TWA: 980 mg/m <sup>3</sup> from OSHA (United States, 1999). Period: 8 hour(s).

## Section 3. Emergency Overview

<b>Hazard Overview</b>	DANGER EXTREMELY FLAMMABLE LIQUID AND VAPOUR, VAPOUR MAY CAUSE FLASH FIRE. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
<b>Potential Acute Health Effects</b>	Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant), of ingestion.
<b>Note to Physician</b>	Not available.

## Section 4. First Aid Measures

<b>Eye Contact</b>	IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. If irritation persists, seek medical attention.
<b>Skin Contact</b>	Wash contaminated skin with soap and water. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
<b>Inhalation</b>	Allow the victim to rest in a well ventilated area. If irritation persists, seek medical attention.
<b>Ingestion</b>	DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. If vomiting occurs, keep head lower than hips to help prevent aspiration. If irritation persists, seek medical attention.

## Section 5. Fire Fighting Measures

<b>Products of Combustion</b>	These products are carbon oxides (CO, CO <sub>2</sub> ) and water.
<b>Fire Fighting Media and Instructions</b>	Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, auto-ignition or explosion.
<b>Fire Hazards</b>	Explosive in the form of vapour when exposed to heat or flame. Vapour may travel considerable distance to source of ignition and flash back. When heated to decomposition it emits acrid smoke and irritating fumes.
<b>Explosion Hazards</b>	Highly flammable liquid and vapour.

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### Section 6. Accidental Release Measures

<b>Small Spill and Leak</b>	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
<b>Large Spill and Leak</b>	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. Place in appropriate container and dispose of in accordance with regional regulations.

### Section 7. Handling and Storage

<b>Handling</b>	Handle and open container with care. Avoid all possible sources of ignition (spark or flame). After handling, always wash hands thoroughly with soap and water.
<b>Storage</b>	Store and use away from heat, sparks, open flame, or any other ignition source. Keep away from sources of ignition. Keep away from incompatibles. Keep in a cool, well-ventilated place.

### Section 8. Exposure Controls, Personal Protection

<b>Engineering Controls</b>	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.
<b>Personal Protection</b>	
<b>Eyes</b>	Splash goggles.
<b>Body</b>	No special protective clothing is required.
<b>Respiratory</b>	Wear appropriate respirator when ventilation is inadequate.
<b>Hands</b>	Gloves (impervious).

### Section 9. Physical and Chemical Properties

<b>Physical State and Appearance</b>	Liquid.	<b>Odor</b>	Alcohol like.
<b>Molecular Weight</b>	60.09g/mole	<b>Taste</b>	Bitter. (Slight.)
<b>pH (1% Soln/Water)</b>	7	<b>Color</b>	Colorless.
<b>Boiling/Condensation Point</b>	82.3°C (180.1°F)	<b>Volatility</b>	Not available.
<b>Melting/Freezing Point</b>	-86°C (-122.8°F)	<b>Evaporation Rate</b>	1.5 compared to Butyl acetate.
<b>Specific Gravity</b>	0.785 (Water = 1)	<b>Odor Threshold</b>	Not available.
<b>Vapor Pressure</b>	4.4 kPa (@ 20°C)	<b>Viscosity</b>	Not available.
<b>Vapor Density</b>	2.1 (Air = 1)	<b>Solubility</b>	Soluble in water, methanol, diethyl ether. Partially soluble in n-octanol.
<b>VOC Content</b>	785 (g/l).	<b>Other Properties</b>	Not available.
<b>The Product is:</b>	Flammable.		
<b>Autoignition Temperature</b>	399°C (750.2°F)		
<b>Flash Points</b>	CLOSED CUP: 12°C (53.6°F). (Tagliabue.)		
<b>Flammable Limits</b>	LOWER: 2% UPPER: 12%		
<b>Fire Hazards in Presence of Various Substances</b>	Flammable in presence of open flames, sparks and static discharge, of heat.		

### Section 10. Stability and Reactivity

<b>Stability</b>	The product is stable.
<b>Conditions of Instability</b>	No additional remark.
<b>Incompatibility with Various Substances</b>	Reactive with oxidizing agents, acids, alkalis.

### Section 11. Toxicological Information

<b>Routes of Entry</b>	Absorbed through skin. Inhalation. Ingestion.
<b>Toxicity to Animals</b>	Acute oral toxicity (LD50): 4710 mg/kg [Rat]. Acute dermal toxicity (LD50): 12870 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 17000 ppm 4 hours [Rat].
<b>Acute Effects on Humans</b>	
<b>Eyes</b>	Slightly hazardous in case of eye contact (irritant).
<b>Skin</b>	Slightly hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening or occasionally, blistering.
<b>Inhalation</b>	Exposure to high air concentrations may cause mild irritation of eyes, nose, and throat.
<b>Ingestion</b>	Slightly hazardous in case of ingestion.
<b>Chronic Effects on Humans</b>	<b>CARCINOGENIC EFFECTS:</b> Classified 4 (Probably not for human.) by IARC. <b>MUTAGENIC EFFECTS:</b> Insufficient information available. <b>TERATOGENIC EFFECTS:</b> Insufficient information available. <b>DEVELOPMENTAL TOXICITY:</b> Insufficient information available. Prolonged inhalation exposure can lead to central nervous system (CNS) depression. Repeated or prolonged exposure is not known to aggravate medical condition. Prolonged and repeated contact with skin can cause drying of the skin resulting in irritation and dermatitis.




### Section 12. Ecological Information

<b>Ecotoxicity</b>	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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### Section 13. Disposal Considerations

<b>Waste Information</b>	Waste must be disposed of in accordance with federal, state and local environmental control regulations.
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### Section 14. Transport Information

<b>TDG Classification (Canada)</b>	TDG CLASS 3: Flammable liquid.	
<b>PIN (Canada)</b>	Shipping name: Isopropanol UNNA: UN 1219 PG: II	
<b>Special Provisions for Transport (Canada)</b>	In inner packages of 500 ml capacity or less this product is classified as a "Consumer Commodity" under TDG regulations.	
<b>IMDG Classification</b>	3.2	
<b>PIN</b>	Shipping name: Isopropyl alcohol UNNA: UN 1219 PG: II	
<b>Marine Pollutant</b>	Not pollutant.	
<b>DOT Classification (U.S.A)</b>	Class 3: Flammable liquid.	
<b>PIN</b>	Isopropanol, 3, UN 1219, II, Not pollutant.	
<b>Special Provisions for Transport (U.S.)</b>	Containers of 1 L or less ship as: Class: ORM-D Name: Consumer Commodity	

### Section 15. Other Regulatory Information and Pictograms

<b>WHMIS Classification (Canada)</b>	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).	 
<b>HCS Classification (U.S.A.)</b>	Class: Flammable liquid having a flash point lower than 37.8°C (100°F).	
<b>USA Regulatory Lists</b>	TSCA inventory: Isopropanol	


**Hazardous Material  
Information System  
(U.S.A.)**

Health	1
Flammability	3
Reactivity	0
Personal Protection	G

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

**Section 16. Other Information**

Validated and verified by Product Development and Technical Coordinator on 14/06/2001.

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**Notice to Reader**

*To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.*

*Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.*