

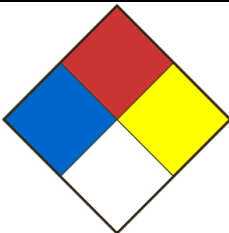


SAFETY DATA SHEET

SECTION 01 - PRODUCT AND COMPANY IDENTIFICATION

Product Identifier LUCAS REAGENT (MODIFIED)		Product Use Laboratory use	
Chemical formula -		Product code LS-0983	Molar weight
Chemical name / Commercial name / Synonymous -			
Supplier's name Laboratoire MAT		Address-Street 610, Adanac Street	
City Québec		Province Québec	
Postal code G1C 7B7	Internet www.labmat.com	Phone number 418-660-8666 Lun-Ven 8h-16h	
Emergency phone	418-660-8666 Lun-Ven 8h-16h CENTRE ANTI-POISON DU QUÉBEC 800-463-5060		
Date SDS 8/23/2024	SDS Prepared by Laboratoire MAT	E-Mail labmat@labmat.com	

SECTION 02 - HAZARDS IDENTIFICATION

Classification WHIMS / GHS	Serious eye damage/eye irritation - Serious eye damage category 1 Acute toxicity - Oral category 4 Corrosive to metals-Category 1 Specific target organ toxicity - Single exposure category 3 Skin corrosion/irritation - Skin corrosion category 1
Signal Word	DANGER
Hazards statements (H)	H302 Harmful if swallowed. H318 Causes serious eye damage. H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage. H335 May cause respiratory irritation.
Precautionary statements (P)	P264 Wash the areas of the body that have been in contact with the product after handling. P270 Do not eat, drink or smoke when using this product. P280 Wear protective gloves, protective clothing and eye and face protection. P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or a doctor. P330 Rinse mouth. P501 Dispose of contents and container in accordance with local, regional and national regulations, or contact a specialist waste disposal company. P234 Keep only in original container. P260 Do not breathe mists, gases, vapors and other fumes, or the product itself. P261 Avoid breathing mists, gases, vapors and other fumes, or the product itself. P271 Use only outdoors or in a well-ventilated area. P301 + P330 + P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P312 Call a POISON CENTER or doctor/physician if you feel unwell. P321 Specific treatment (see section 4 of the SDS and on this label). P363 Wash contaminated clothing before reuse. P390 Absorb spillage to prevent material damage. P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up. P406 Store in a corrosion resistant container or a container with corrosion resistant liner.
PICTOGRAMS	
Other dangers	NFPA (Risk: 0=No risk; 1=Slight; 2=Moderate; 3=Significant; 4=Extreme)
	Health 2 Fire 0 Reactivity 2 Special danger

SECTION 03 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingrédients (Dénomination chimique / synonymes)	Numéro CAS et tout identificateur unique	Concentration (%P/P)
Chlorure de zinc	7646-85-7	47
Acide chlorhydrique	7647-01-0	14

SECTION 04 - FIRST AID MEASURES

Eye contact	Wash eyes with large amounts of water for at least 15 minutes while holding eyelids apart to rinse eyes. If irritation persists, seek medical attention.
Skin contact	Wash skin with plenty of water for at least 15 minutes. Remove soiled clothing. If irritation persists, seek medical attention.
Inhalation	Move the unwell person to the fresh air. If breathing is difficult, give oxygen. Consult a physician.
Ingestion	If the person is conscious, give water to drink. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Consult a physician.
Most important symptoms and effects (acute and delayed)	Main symptoms of high exposure: Skin, eye and respiratory system irritation. Breathing difficulties. Pulmonary fibrosis. Fever. Cyanosis (blue to black coloring of the skin and nails). Cough. Tachypnea (abnormal increase in respiratory rate). Pulmonary edema. Pneumonia. Chest pain. The corrosive effect will outweigh the toxicity for the concentrated product. Chemical burns of the skin, eyes and respiratory and digestive mucous membranes. To our knowledge, the chemical, physical and toxicological properties have not been fully investigated. Ref. section 11.
Immediate medical attention and special treatment, if necessary	Treat according to symptoms. Show this sheet to the attending physician.

SECTION 05 - FIREFIGHTING MEASURES

Flammability	No
Suitable extinguishing media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable extinguishing media	Data not available.
Hazardous combustion products	Hazardous combustion products formed under fire conditions: - Zinc/zinc oxides. Hydrogen chloride gas.
Specific hazards of the dangerous product	Zinc chloride mixed with metal chlorides and powdered zinc may ignite. Risk of explosion on contact with metallic potassium. May react violently with incompatible products (Ref Section 10).
Special protective equipment and precautions for firefighters	Discard incompatible substances if this can be done without risk. Firefighters should be equipped with standard protective equipment, fireproof clothing, face mask, gloves, protective boots and, where appropriate, self-contained breathing apparatus.

SECTION 06 - ACCIDENTAL RELEASE MEASURES

Methods and materials for containment and cleaning up / Personnel precautions, protective equipment	Evacuate personnel to safe areas. Cut off all sources of ignition. Absorb the product with sand or vermiculite. Dilute residues with water, clean and rinse. Ensure a good ventilation of the premises. Dispose of residues in a container for disposal of hazardous materials. When handling, wear suitable safety equipment. Use breathing apparatus if necessary. Do not let product enter drains.
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SECTION 07 - HANDLING AND STORAGE

Conditions for safe storage	Store in a cool, dry place. Protect from the sun's rays. Keep container tightly closed and store away from heat, water, moisture, and incompatible products. Use venting and electrical equipment that is grounded and does not produce ignition sources (sparks).
Methods of handling	Avoid contact with the skin, eyes and clothes. Avoid inhalation of vapor or mist. This product is corrosive to metals. Do not bottle in a metal container. Avoid ingestion and inhalation. Wear personal protective equipment when handling. Always ensure good ventilation. Apply the usual standard hygiene rules: Wash your hands after use. Do not eat or drink during use.

SECTION 08 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Workplace control parameters

Components	No.-CAS	Control parameters	Value	Basis
Zinc chloride	7646-85-7	TWA	1.000000 mg/m3	Canada. British Columbia OEL
		STEL	2.000000 mg/m3	Canada. British Columbia OEL
		TWA	1.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarques	The occupational exposure limit is based on irritation effects and adjustment to compensate for unusual work schedules is not necessary.			
		STEL	2.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	La limite d'exposition professionnelle est basée sur les effets de l'irritation et son ajustement pour compenser les emplois du temps de travail inhabituels n'est pas nécessaire			
		TWA	1.000000 mg/m3	Canada. British Columbia OEL
		STEL	2.000000 mg/m3	Canada. British Columbia OEL
		VEMP	1.000000 mg/m3	Quebec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWA	1.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	La limite d'exposition professionnelle est basée sur les effets de l'irritation et son ajustement pour compenser les emplois du temps de travail inhabituels n'est pas nécessaire			
		STEL	2.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	La limite d'exposition professionnelle est basée sur les effets de l'irritation et son ajustement pour compenser les emplois du temps de travail inhabituels n'est pas nécessaire			
		VEMP	1.000000 mg/m3	Quebec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
Components	CAS-No.	Control parameters	Value	Basis
Hydrochloric acid	7647-01-0	(c)	2 ppm 3 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required			
		C	2 ppm	Quebec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
	A substance which may not be recirculated in accordance with section 108			
		(c)	2 ppm	Canada. Ontario Reg.833
		C	2 ppm	Canada. British Columbia OEL
		C	2 ppm	USA. ACGIH Threshold Limit Values (TLV)

Data source	Sigma-Aldrich.
Ventilation	Use fan.
Respiratory	If permitted levels are exceeded, use NIOSH cartridge respiratory protection, or an air-supplied respirator.
Gloves	Handle with gloves. Suggested material: Nitrile. Butyle. Neoprene. The type, thickness and length of the glove must be chosen according to the use, the concentration of the product, as well as the duration of use. Replace gloves regularly for better protection.
Eyes	Safety goggles with safety shutters.
Shoes	Safety shoes.
Clothing	Labcoat. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Engineering control	Have safety showers and eyewash stations in the workplace in case of an emergency and a ventilation

SECTION 09 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid.
Appearance	Liquide clair.
Odour	Donnée non disponible.
Odour threshold	Data not available
pH	<2.
Melting point / Freezing point	Data not available
Initial boiling point	Data not available
Boiling range	Data not available
Flash point	Data not available
Evaporation rate	Data not available
Flammability	No
Lower flammable / Explosive limit	Data not available
Upper flammable / Explosive limit	Data not available
Vapour pressure	Data not available
Solubility	Très soluble dans l'eau.
Vapour density	Data not available
Relative density	Data not available
Partition coefficient water/n-octanol	Data not available
Auto-ignition temperature	Data not available
Decomposition temperature	Data not available
Viscosity	Data not available

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	Acid product, reacts strongly with strong bases. Reacts strongly with metals. May react violently with incompatible substances.
Chemical stability	Moisture sensitive.
Possibility of hazardous reactions	May react violently with incompatible substances.
Conditions to avoid, including static discharge, shock or vibration	This product becomes deliquescent if exposed to moisture
Incompatible materials	Strong oxidizing agents (nitric acid, perchloric acid, peroxides, chlorates and perchlorates), metallic potassium and moisture. Bases, Amines, alkali metals, metals, permanganates, fluorine, metal acetylides, hexalithium disilicide.
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions. Toxic vapors of hydrogen chloride. - Zinc/zinc oxides.

SECTION 11 - TOXICOLOGICAL INFORMATION

ZINC CHLORIDE

Routes of exposure	Inhalation, skin and eyes.
Acute exposition effects / symptoms:	By exposure route below.
- Eyes	Severe irritation and burns that may cause permanent eye damage.
- Skin	May be harmful if absorbed through skin. Severe irritation and dermatitis. Intense dust exposure can lead to boils (furunculosis).
- Inhalation	May be harmful if inhaled. The product is extremely destructive to the tissue of the mucous membranes and upper respiratory tract. Nervous disorders, chest pain, cough, dyspnea, headache, dizziness, fever, seizures, respiratory acidosis, bronchopneumonia, and pulmonary edema that may result in death.
Acute toxicity (Ingestion)	Toxic if swallowed. Irritation of the mucous membranes. Burns in the mouth and throat, dysphagia, abdominal pain and leg cramps, diarrhea, headache, dizziness, cold sweat, hematuria, convulsions, hypotension, nausea and vomiting.
Chronic exposure effects / symptoms	Burning sensation, dermatitis, furunculosis, conjunctivitis, nervous disorders, lung damage, chest pain, cough, dyspnoea, laryngitis, headache, dizziness, confusion, irritability, tachypnea, sweating, salivation, fatigue, fever, nausea and vomiting.
DL50 (specify species and route of entry)	LD50 Oral - Rat - 1100 mg/kg. DL50 Oral - Mouse - 1260 mg/kg. LD50 Dermal - Rat - 2000 mg/kg.
CL50 (specify species and route of entry)	LC50 - Inhalation - Rat - 1.975 mg/L air - 10 min.

HYDROCHLORIC ACID (32-38%W/W)

Routes of exposure	Ingestion, inhalation, skin and eyes.
Acute exposition effects / symptoms:	By exposure route below. The corrosive effect will outweigh the toxicity for the concentrated product.
- Eyes	Severe burns and destruction of ocular tissue that can lead to corneal ulceration and blindness.
- Skin	Severe burns and tissue ulcerations. Perhaps fatal, if the extent of the burns is considerable.
- Inhalation	Spasms, irritation and inflammation of the nose, throat and lungs. Edema of the larynx and bronchi. Chemical pneumonitis and pulmonary edema that can lead to death.
Acute toxicity (Ingestion)	Corrosion and ulceration of the mouth, throat, esophagus, stomach and abdominal wall. Dysphagia, abdominal pain, cramps, diarrhea, melena, hematemesis, possible perforation of the esophagus and stomach, sweating, salivation.
Chronic exposure effects / symptoms	Burning sensation, dermatitis, conjunctivitis, photophobia, lung and eye damage, chest pain, dental enamel abrasion, cough, dyspnoea, laryngitis, tracheobronchitis, headache, dizziness, fever, sweating, salivation, thirst.
DL50 (specify species and route of entry)	LD50 - Oral 238-277 mg/Kg-Rat LD50 - Dermal 1449 mg/kg-Mouse
CL50 (specify species and route of entry)	LC50 - Inhalation - 3124 ppm/1 h.-Rat

SUMMARY

Acute exposure effects / Symptoms:	By exposure routes below.
Ingestion	To our knowledge, the product has not been fully evaluated
Inhalation	To our knowledge, the product has not been fully evaluated
Skin	To our knowledge, the product has not been fully evaluated
Eyes	To our knowledge, the product has not been fully evaluated
Chronic exposure effects / Symptoms:	To our knowledge, the product has not been fully evaluated
ETA Mix (Estimated Acute Toxicity)	LD50 Oral: 666 mg/kg - Rat LD50 Dermal: 3021 mg/kg - Undefined species LC50 Inhalation: No data available

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity	Zinc chloride: Toxicity to fish: LC50: Cyprinus carpio (Carpe) - 0.4 - 2.2 mg/l - 96.0 h. Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 0.2 mg/l - 48 h Toxicity to algae: Inhibition of growth LOEC - Pseudokirchneriella subcapitata - 12.5 mg/l - 96 h Hydrochloric acid: Toxicity to fish LC50 - Lepomis macrochirus (Bluegill) - 24.6 mg/l - 96 h (Hydrochloric acid) Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 4.91 mg/l - 48 h (Hydrochloric acid)
Persistence and degradability	Data not available.
Bioaccumulative potential	Data not available.
Mobility in soil	Data not available.
Other adverse effects	Very toxic to aquatic life. Causes long-term adverse effects. An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 - DISPOSAL CONSIDERATIONS

Waste Disposal Method	Dispose of contents and container in accordance with local, regional and national regulations, or contact a specialist waste disposal company.
Contaminated Packaging	Dispose of as unused product.

SECTION 14 - TRANSPORT INFORMATION

UN Number	3264
UN Proper shipping name	LIQUIDE INORGANIQUE CORROSIF, ACIDE N.S.A.
Transport hazard class(es)	8 Corrosive substances
Packing group	II
Limited quantity index	1L
ERAP Index	-
Special precautions	(chlorure de zinc, acide chlorhydrique)

SECTION 15 - REGULATORY INFORMATION

WHIMS CANADA	Serious eye damage/eye irritation - Serious eye damage category 1 Acute toxicity - Oral category 4 Corrosive to metals-Category 1 Specific target organ toxicity - Single exposure category 3 Skin corrosion/irritation - Skin corrosion category 1
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SECTION 16 - OTHER INFORMATION

Further information

The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. It does not represent any guarantee of the properties of the product. Laboratoire MAT Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

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