

Centre Anti-Poison pour le Québec: (800) 463-5060 Tél. (Qc): (418) 660-8666 / 800-890-8666 Fax. (Qc): (418) 660-8998

SAFETY DATA SHEET

SECTION 01 - PRODUCT AND COMPANY IDENTIFICATION

Product Identifier			Product Use		
FORMIC ACID 10%V/V (from 88%W/W)			Laboratory use		
Chemical formula				Product code	Molar weight
HCO ₂ H				FS-0119	46,03
Chemical name / Commercial name / Synonymous FORMIC ACID, ACIDE MÉTHANOÏQUE, ACIDE FORMYLIQUE, HYDRC			DROGEN CARBOX	YLIC ACID, ACIDE AMINIQUE.	
Supplier's name			Address-Street		
Laboratoire MAT		610, Adanac Street			
City		Province			
Québec		Québec			
Postal code	Internet		Phone number		
G1C 7B7	www.labmat.com		418-660-8666 / 800-890-8666		
Emergency phone	CANUTEC: 613-996-6666		CENTRE ANTI-POISON DU QUÉBEC 800-463-5060		
Date SDS	Date SDS SDS Prepared by			E-Mail	
2/25/2021 Laboratoire MA1		Т	labmat@labmat.com		

SECTION 02 - HAZARDS IDENTIFICATION

Classification WHIMS / GHS				
	Serious eye damage	/eye irritation - Serious eye damage category 1		
	Skin corrosion/irritati	on - Skin corrosion category 1		
	Liquides inflammables	Liquides inflammables category 4		
Signal Word	DANGER			
Hazards statements (H)	H314 Causes severe	skin burns and eye damage.		
	H318 Causes serious	eye damage.		
	H227 Combustible lic	auid.		
Precautionary statements (P)	P260	Do not breathe dust / fume / gas / mist / vapors / spray.		
	P264	Wash the areas of the body that have been in contact with the product after handling.		
	P280	Wear protective gloves/protective clothing/eye protection/face protection.		
	P301 + P330 + P33	1 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.		
	P303 + P361 + P35	3 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.		
	P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.		
	P305 + P351 + P33	8 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 doctor/physician.		
	P321	Specific treatment (see section 4 of the SDS and on this label).		
	P363	Wash contaminated clothing before reuse.		
	P405	Store locked up.		
	P501	Dispose of contents/container in accordance with local / regional / national / international regulations or contact a specialist waste disposal company.		
	P210	Keep away from heat/sparks/open flames/hot surfaces. — No smoking.		
	P370 + P378	In case of fire: Use water spray or alcohol-resistant foam, or dry powder or carbon dioxide for extinction.		
	P403	Store in a well-ventilated place.		
PICTOGRAMS				
Other dangers	NFP	A (Risk: 0=No risk; 1=Slight; 2=Moderate; 3=Signifiant; 4=Extreme)		
	Health 2			
	Fire 1			
	Reactivity 0			
	Special danger			

SECTION 03 - COMPOSITION/INFORMATION ON INGREDIENTS

Ingrédients (Dénomination chimique / synonymes)	Numéro CAS et tout identificateur unique	Concentration (%)
Acide formique	64-18-6	10-11

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. Never give anything by mouth to an unconscious person. Consult a physician. Do NOT induce vomiting.
Most important symptoms and effects (acute and delayed)	The product is toxic, corrosive and irritant. Main symptoms of high exposure: Skin irritation. Eyes irritation. Eye damage. Cough. Irritation of the nose and throat. Breathing difficulties. Pulmonary edema. Ref. section 11.
Immediate medical attention and special treatment, if necessary	In case of medical consultation, keep this sheet available.
General advice	Show this safety data sheet to the doctor in attendance.

SECTION 05 - FIREFIGHTING MEASURES

Flammability	Yes
Ignition conditions	No longer flammable at this concentration. But remains combustible. Keep away from heat/sparks/open flame/hot surface.
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: Formaldehyde. Carbon monoxide, carbon dioxide.
Special fire and explosion hazards	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	Evacuate personnel to safe areas. Absorb the product with sand or vermiculite. Dilute residues with water,
containment and cleaning up /	clean and rinse. Ensure a good ventilation of the premises. Dispose of residues in a container for disposal
Personnal precautions, protective	of hazardous materials. When handling, wear suitable safety equipment. Use breathing apparatus if
equipment	necessary. Avoid breathing vapors, mist or gas. Do not let product enter drains.

SECTION 07 - HANDLING AND STORAGE

Conditions for safe storage	Vent periodically. Protect from the sun's rays. Refrigerate before opening. Handle and open container with care. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in a cool, dry place, preferably below 20 °C. Keep container tightly closed (unsealed) and store away from heat, moisture, and incompatible products. Old lots can develop pressure.
Methods of handling	Always open containers slowly to allow any excess pressure to vent. Avoid inhalation of vapor or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

SECTION 08 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Formic acid	64-18-6	TWA	5.000000 ppm 9.400000 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	exposure li schedules STEL exposure li schedules	mit is based on irrit is not required 10.000000 ppm 19.000000 mg/m3 mit is based on irrit is not required	ation effects and its adjustment to compensate for Canada. Alberta, Occupational Health and Safety Code (table 2: OEL) ation effects and its adjustment to compensate for
		STEL	10.000000 ppm 19.000000 mg/m3	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required	exposure li schedules TWA STEL	mit is based on irrit is not required 5.000000 ppm 10.000000 ppm	ation effects and its adjustment to compensate for Canada. British Columbia OEL Canada. British Columbia OEL
		TWA	5.000000 ppm	Canada. British Columbia OEL
		STEL	10.000000 ppm	Canada. British Columbia OEL
		STEV	10.000000 ppm 19.000000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWAEV	5.000000 ppm 9.400000 mg/m3	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWA	5.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		STEL	10.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)

Data source	Sigma-Aldrich.
Ventilation	Fan.
Respiratory	If the permissible levels are exceeded, use a mechanical filter / cartridge against NIOSH vapors or a respirator with air supply. Self-Contained Breathing Apparatus with NIOSH / MSHA approved face shield.
Gloves	Handle with gloves.
Eyes	Safety goggles with safety shutters. Face shield (20 cm minimum).
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 system to maintain the level of concentrations in the air below the exposure limit values.

SECTION 09 - PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid.
Appearance	Liquide incolore
Odour	Odeur piquante.
Odour threshold	Data not available
рН	Solution aqueuse 0.1N = pH 2.3 (acide formique).
Melting point / Freezing point	-13 °C / 9 °F (acide formique)-
Initial boiling point	101 °C / 214 °F (acide formique)-
Boiling range	Data not available
Flash point	58 °C / 136.4 °F (acide formique)-
Evaporation rate	2.1 (acide formique)-
Flammability	Yes
Lower flammable / Explosive limit	14.9 %V/V (acide formique).
Upper flammable / Explosive limit	47.6 %V/V (acide formique).
Vapour pressure	24.2 hPa @ 20°C, 112.5 hPa @ 50°C (acide formique)-
Solubility	Miscible avec l'eau en toutes proportions. Miscible avec l'alcool, l'éther et la glycérine
Vapour density	1.59 - (Air = 1.0) (acide formique)-
Relative density	1.02 g/ml (théorique)-
Partition coefficient water/n-octanol	Data not available
Auto-ignition temperature	500 °C / 932 °F (acide formique)-
Decomposition temperature	Data not available
Viscosity	1.4 mPa.s @ 20 °C (acide formique)-

SECTION 10 - STABILITY AND REACTIVITY

Reactivity	Flammable product, may ignite with source of ignition, if temperature above flash point. May ignite on contact with oxidants.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	Stable under normal conditions. Risk of explosion if heated in a confined environment. Keep away from open flames, hot surfaces and sources of ignition.
Conditions of instability (Including sensitivity to shock / static discharge / vibration)	Heat, flames and sparks. Exposure to moist air or water. Strong reducing agent-contact with other substances can cause fire.
Incompatible material	When pure, the product reacts with the following products: Strong oxidizing agents (nitric acid, perchloric acid, peroxides, chlorates and perchlorates), sulfuric acid, furfuryl alcohol, strong bases, hydrogen peroxide, fine metal powders, nitromethane, permanganates, phosphorus pentoxide, anhydride phosphoric, thallium nitrate hydrates, heat and moisture.
Hazardous decomposition products	Hazardous decomposition products formed under fire conditions. Toxic vapors of formaldehyde, monoxide and carbon dioxide.

SECTION 11 - TOXICOLOGICAL INFORMATION

FORMIC ACID (96%)

Routes of exposure	Ingestion, inhalation, skin and eyes.
Acute exposition effects / symptoms:	By exposure route below.
- Eyes	Severe irritation and burning may cause permanent eye damage.
- Skin	Severe irritation and tissue burn.
- 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)	Serious irritation of the mucous membranes of the gastrointestinal tract. Dysphagia, abdominal pain, lesions kidneys and eyes, cramps, diarrhea, melena, hematemesis, headache, vertigo, sweating, salivation, nausea and vomiting, severe acidosis, convulsions, stupor, circulatory collapse, coma and may cause death. Acute absorption can lead to blindness.
Chronic exposure effects / symptoms	Burning sensation, dermatitis, conjunctivitis, nervous disorders, lung and eye damage, chest pain, cough, dyspnea, laryngitis, headache, dizziness, tearing, confusion, irritability, sweating, salivation, tremor, paleness, fatigue, muscle weakness, weight loss and loss appetite, nausea and vomiting.
DL50 (specify species and route of entry)	LD50 Oral - Rat - 730 mg/kg. LD50 Dermal - Data not available.
CL50 (specify species and route of entry)	LC50 Inhalation - Rat - 4 h - 7.4 mg / 1 LC50 - Inhalation - Rat - 15 g / m3 (Rat) 15 min.

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: 6949 mg/kg - Rat LD50 Dermal: No data available LC50 Inhalation: 74.7mg/L - 4h - Rat

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity	Formic acid: Toxicity to fish: LC50 - Leuciscus idus (lde) - 46 - 100 mg / I - 96 h. Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Great Daphnia) - 34.2 mg / I - 48 h. Toxicity to algae: EC50 = $25mg / L / 96h$ (freshwater algae) Toxicity to bacteria: EC50 - Pseudomonas putida (Bacillus Pseudomonas putida) - 46.7 mg / I - 17 h
Persistence and degradability	Biodegradability Result: > 90 % - Readily biodegradable. Method: OECD Test Guideline 301C. Soluble in water. Persistence is unlikely based on the information provided.
Bioaccumulative potential	Bioaccumulation Oncorhynchus mykiss (rainbow trout) - 16 Weeks
Mobility in soil	Probable mobility in the environment due to its solubility in water.
Other adverse effects	Harmful to aquatic life. The product contains the following substances which are dangerous for the environment.

SECTION 13 - DISPOSAL CONSIDERATIONS

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

SECTION 14 - TRANSPORT INFORMATION

UN Number	3412
UN Proper shipping name	ACIDE FORMIQUE, contenant au moins 10% et au plus 85% (masse) d'acide
Transport hazard class(es)	8 Corrosive substances
Packing group	ll l
Limited quantity index	1L
ERAP Index	-
Special precautions	-

SECTION 15 - REGULATORY INFORMATION

WHIMS CANADA	Serious eye damage/eye irritation - Serious eye damage category 1
	Skin corrosion/irritation - Skin corrosion category 1
	Liquides inflammables category 4

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.

Last Update: 2/25/2021