

Formic Acid 98 - 100%**SECTION 1. IDENTIFICATION**

Product Identifier	Formic Acid 98 - 100%
Other Means of Identification	Aminic acid, Formylic acid
Product Code(s)	FO4115
Product Family	Organic solution
Recommended Use	Laboratory and industrial use.
Restrictions on Use	None known.
Supplier Identifier	Alphachem Limited, 2485 Milltower Court, Mississauga, Ontario, L5N 5Z6, (905) 821-2995
Emergency Phone No.	CANUTEC CANADA, 613-996-6666, 24 Hours
SDS No.	1502

SECTION 2. HAZARD IDENTIFICATION

Classified according to Canada's Hazardous Products Regulations (WHMIS 2015) and the US Hazard Communication Standard (HCS 2012).

Classification

Flammable liquid - Category 3; Acute toxicity (Oral) - Category 4; Acute toxicity (Inhalation) - Category 3; Skin corrosion - Category 1A; Serious eye damage - Category 1

Label Elements

Signal Word:
Danger

Hazard Statement(s):

Flammable liquid and vapour.

Harmful if swallowed.

Toxic if inhaled.

Causes severe skin burns and eye damage.

Precautionary Statement(s):**Prevention:**

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Keep container tightly closed.

Ground and bond container and receiving equipment.

Use explosion-proof electrical, ventilating, and lighting equipment.

Use non-sparking tools.

Product Identifier: Formic Acid 98 - 100% - Ver. 1

Date of Preparation: April 02, 2018

Date of Last Revision: April 02, 2018

Page 01 of 07

Take action to prevent static discharges.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.

Response:

IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

IF ON SKIN: Wash with plenty of water.

IF INHALED: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.

Continue rinsing.

Storage:

Store in a well-ventilated place. Keep container tightly closed.

Store in a well-ventilated place. Keep cool.

Store locked up.

Disposal:

Dispose of contents and container in accordance with local, regional, national and international regulations.

Other Hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture:

Chemical Name	CAS No.	%	Other Identifiers	Other Names
Formic acid	64-18-6	90 - 100	Aminic acid, Formylic acid	
Water	7732-18-5	Balance	Dihydrogen Oxide	

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Remove source of exposure or move to fresh air. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor.

Skin Contact

Immediately rinse skin with lukewarm, gently flowing water for at least 30 minutes. Immediately call a Poison Centre or doctor.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes, while holding the eyelid(s) open. Contact physician immediately.

Ingestion

Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. Rinse mouth with water. Do not induce vomiting. Immediately call a Poison Centre or doctor.

First-aid Comments

Provide general supportive measures (comfort, warmth, rest).

Consult a doctor and/or the nearest Poison Control Centre for all exposures.

Some first aid procedures recommended above require advanced first aid training. Protocols for undertaking advanced procedures must be developed in consultation with a doctor and routinely reviewed.

All first aid procedures should be periodically reviewed by a doctor familiar with the material and its conditions of use in the workplace.

Product Identifier: Formic Acid 98 - 100% - Ver. 1

Date of Preparation: April 02, 2018

Date of Last Revision: April 02, 2018

Page 02 of 07

Most Important Symptoms and Effects, Acute and Delayed

If on skin: may burn the skin. Permanent scarring may result. If in eyes: contact causes severe burns with redness, swelling, pain and blurred vision. Permanent damage including blindness can result.

Immediate Medical Attention and Special Treatment

Special Instructions

General advice, consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media

Carbon dioxide, dry chemical powder, appropriate foam, water spray or fog.

Unsuitable Extinguishing Media

Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific Hazards Arising from the Product

Flammable liquid and vapour. Can ignite at room temperature. Releases vapour that can form explosive mixture with air. May travel a considerable distance to a source of ignition and flash back to a leak or open container. Closed containers may rupture violently when heated releasing contents.

In a fire, the following hazardous materials may be generated: very toxic carbon monoxide, carbon dioxide; very toxic, flammable formaldehyde; corrosive hydrogen chloride.

Special Protective Equipment and Precautions for Fire-fighters

Evacuate area. Fight fire from a safe distance or a protected location. Approach fire from upwind to avoid hazardous vapours or gases. Knock down vapours or gases with water fog or fine water spray. Use water spray to dilute spills to non-flammable mixtures. Use water spray to flush spills away from ignition sources. For a massive fire, immediately evacuate the area and use unmanned hose holder or monitor nozzles. Dike and recover contaminated water for appropriate disposal.

Chemical protective clothing (e.g. chemical splash suit) and positive pressure SCBA may be necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures

Notify government occupational health and safety and environmental authorities. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Remove or isolate incompatible materials as well as other hazardous materials.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway.

Methods and Materials for Containment and Cleaning Up

Stop or reduce leak if safe to do so.

Small spills or leaks: contain and soak up spill with absorbent that does not react with spilled product. Place used absorbent into suitable, covered, labelled containers for disposal. Flush spill area.

Large spills or leaks: contact emergency services and manufacturer/supplier for advice.

SECTION 7. HANDLING AND STORAGE

Precautions for Safe Handling

Wear personal protective equipment to avoid direct contact with this chemical. Immediately report leaks, spills or failures of the safety equipment (e.g. ventilation system). Only use where there is adequate ventilation. Avoid generating vapours or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent accidental contact with incompatible chemicals. Never add water to a corrosive. Always add corrosives slowly to COLD water. Never return unused or contaminated product to its original container. Wash hands thoroughly after handling this material. Keep containers tightly closed when not in use or empty.

Product Identifier: Formic Acid 98 - 100% - Ver. 1

Date of Preparation: April 02, 2018

Date of Last Revision: April 02, 2018

Page 03 of 07

Conditions for Safe Storage

Store in an area that is: cool, well-ventilated, out of direct sunlight and away from heat and ignition sources, separate from incompatible materials (see Section 10: Stability and Reactivity). Keep amount in storage to a minimum. Store in a closed container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Chemical Name	ACGIH TLV®		OSHA PEL		AIHA WEEL	
	TWA	STEL	TWA	Ceiling	8-hr TWA	TWA
Formic acid	5 ppm	10 ppm	Not established			
Water	Not established		Not established			

Appropriate Engineering Controls

Use local exhaust ventilation and enclosure, if necessary, to control amount in the air. Use a corrosion-resistant exhaust ventilation system separate from other ventilation systems. Exhaust directly to the outside, taking any necessary precautions for environmental protection. Provide eyewash and safety shower if contact or splash hazard exists.

Individual Protection Measures

Eye/Face Protection

Wear chemical safety goggles and face shield when contact is possible.

Skin Protection

Wear chemical protective clothing e.g. gloves, aprons, boots.

Suitable materials are: neoprene rubber, Barrier® (PE/PA/PE), Saranex®, ChemMAX® 3, ChemMAX® 4, Interceptor®, Tychem® BR/LV, Tychem® Responder® CSM, Tychem® TK, Tychem® Reflector.

The following materials should NOT be used: natural rubber, polyvinyl alcohol.

Respiratory Protection

For non-routine or emergency situations: wear a NIOSH approved air-purifying respirator with an appropriate cartridge.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Basic Physical and Chemical Properties

Appearance	Colourless liquid.
Odour	Pungent
Odour Threshold	Not available
pH	2.2 (0.2% solution)
Melting Point/Freezing Point	8.2 - 8.4 °C (46.8 - 47.1 °F) (melting); 8.2 - 8.4 °C (46.8 - 47.1 °F) (freezing)
Initial Boiling Point/Range	100 - 101 °C (212 - 214 °F)
Flash Point	49.5 °C (121.1 °F) (closed cup)
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	57% (upper); 18% (lower)
Vapour Pressure	31.50 mm Hg (4.20 kPa) at 20 °C
Vapour Density (air = 1)	1.59
Relative Density (water = 1)	1.22 at 25 °C
Solubility	Very soluble in water; Not available (in other liquids)

Product Identifier: Formic Acid 98 - 100% - Ver. 1

Date of Preparation: April 02, 2018

Date of Last Revision: April 02, 2018

Page 04 of 07

Partition Coefficient, n-Octanol/Water (Log Kow)	-0.54
Auto-ignition Temperature	505 °C (941 °F)
Decomposition Temperature	8.2 - 8.4 °C (46.8 - 47.1 °F)
Viscosity	Not available (kinematic); Not available (dynamic)
Other Information	
Physical State	Liquid

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions of use.

Chemical Stability

Normally stable.

Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

Conditions to Avoid

Open flames, sparks, static discharge, heat and other ignition sources. Incompatible materials.

Incompatible Materials

Strong oxidizing agents (e.g. perchloric acid), strong bases (e.g. sodium hydroxide), metals (e.g. aluminum).

Hazardous Decomposition Products

Very toxic carbon monoxide, carbon dioxide.

SECTION 11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure

Inhalation; skin contact; eye contact; ingestion.

Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Formic acid	7.4 mg/L	730 mg/kg (rat)	Not available
Water	Not available	> 89840 mg/kg (rat)	Not available

Skin Corrosion/Irritation

Causes severe irritation.

Serious Eye Damage/Irritation

Causes severe eye irritation.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

May cause severe nose and throat irritation.

Ingestion

Harmful.

Aspiration Hazard

No information was located.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

Product Identifier: Formic Acid 98 - 100% - Ver. 1
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No information was located.

Respiratory and/or Skin Sensitization

No information was located.

Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Formic acid	Not evaluated	Not designated	Not Listed	Not Listed
Water	Not Listed	Not Listed	Not Listed	Not Listed

Reproductive Toxicity

Development of Offspring

No information was located.

Sexual Function and Fertility

No information was located.

Effects on or via Lactation

No information was located.

Germ Cell Mutagenicity

No information was located.

Interactive Effects

No information was located.

SECTION 12. ECOLOGICAL INFORMATION

This section is not required by WHMIS. This section is not required by OSHA HCS 2012.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal Methods

Bury in a licensed landfill or burn in an approved incinerator according to federal, provincial/state, and local regulations.

SECTION 14. TRANSPORT INFORMATION

Regulation	UN No.	Proper Shipping Name	Transport Hazard Class(es)	Packing Group
Canadian TDG	UN1779	Formic Acid	8,3	II

Special Precautions Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15. REGULATORY INFORMATION

Safety, Health and Environmental Regulations

Canada

Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

All ingredients are listed on the DSL.

USA

Toxic Substances Control Act (TSCA) Section 8(b)

All ingredients are listed on the TSCA Inventory.

Product Identifier: Formic Acid 98 - 100% - Ver. 1

Date of Preparation: April 02, 2018

Date of Last Revision: April 02, 2018

SECTION 16. OTHER INFORMATION

NFPA Rating	Health - 3	Flammability - 2	Instability - 0
SDS Prepared By	Alphachem Limited		
Phone No.	(905)-821-2995		
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References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). CSST - Repertoire toxicologique database. GESTIS Substance Database (included by CCOHS).		
Disclaimer	This document is offered only as a guide in the safe handling of the above product, and has been prepared from the best information currently available. It is not intended to be all-inclusive and the conditions of use may involve other additional considerations. Since Alphachem Limited cannot anticipate or control the conditions under which the product may be used, it will not be liable for any claims, damages or losses which may result from the use or reliance on any information herein.		

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