Formic Acid 88%

SECTION 1. IDENTIFICATION

Product Identifier	Formic Acid 88%
Other Means of Identification	Aminic acid, Formylic acid
Product Code(s)	FO4120
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.	1228

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 1B; 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.
Corrosive to the respiratory tract.

Precautionary Statement(s):
Prevention:
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Ground and bond container and receiving equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.

Do not breathe dust/fume/gas/mist/vapours/spray.
Wash hands and skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves/protective clothing/eye protection/face protection.
Response:
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF ON SKIN: Wash with plenty of water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Storage:
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	88	Aminic acid, Formylic acid	
Water	7732-18-5	12	Dihydrogen oxide	

Notes

Above concentrations are in weight %.

SECTION 4. FIRST-AID MEASURES

First-aid Measures

Inhalation

Move to fresh air. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. Avoid mouth-to-mouth contact by using a barrier device. Immediately call a Poison Centre or doctor.

Skin Contact

Immediately rinse with lukewarm, gently flowing water for 15-20 minutes. Immediately call a Poison Centre or doctor.

Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Immediately call a Poison Centre or doctor. Specific treatment is required.

Ingestion

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

Most Important Symptoms and Effects, Acute and Delayed

If inhaled: can cause severe irritation of the nose and throat. If on skin: contact can cause pain, redness, burns, and blistering. Permanent scarring can result. If in eyes: contact causes severe burns with redness, swelling, pain and blurred vision. Permanent damage including blindness can result. If swallowed: can burn the lips, tongue, throat and

stomach. Can irritate the mouth, throat and stomach. Symptoms may include nausea, vomiting, stomach cramps and diarrhea.

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. Use water to keep non-leaking, fire-exposed containers cool.

Unsuitable Extinguishing Media

None known.

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. Heating increases the release of toxic vapour. 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.

Special Protective Equipment and Precautions for Fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full
protective gear. Evacuate area. Fight fire from a safe distance or a protected location. Approach fire from upwind to avoid hazardous vapours or gases. Move containers from fire area if it can be done without risk. Otherwise, use water in flooding quantities as a spray or fog to keep fire-exposed containers cool and absorb heat. 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

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. 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 if safe to do so. Remove or isolate incompatible materials as well as other hazardous materials. Notify government occupational health and safety and environmental authorities.

Environmental Precautions

Do not allow into any sewer, on the ground or into any waterway. If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

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. Do not breathe in this product. Only use where there is adequate ventilation. Immediately report leaks, spills or failures of the safety equipment (e.g. ventilation system). Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent

accidental contact with incompatible chemicals. Keep smallest practical amount in work area. Keep containers tightly closed when not in use or empty.

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 the original, labelled, shipping container.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

	ACGIH TLV®		OSHA PEL		AIHA WEEL	
Chemical Name	**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. Provide eyewash and safety shower if contact or splash hazard exists. Use a corrosion-resistant exhaust ventilation system separate from other ventilation systems. Exhaust directly to the outside, taking any necessary precautions for environmental protection.

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), Tychem® BR/LV, Tychem® Responder® CSM, Tychem® TK.
The following materials should NOT be used: natural rubber, polyvinyl alcohol.

Respiratory Protection

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	2.1 (1% solution)
Melting Point/Freezing Point	8 ºC (46 ºF) (melting); 8 ºC (46 ºF) (freezing)
Initial Boiling Point/Range	101 ºC (214 ºF)
Flash Point	60 ºC (140 ºF)
Evaporation Rate	Not available
Flammability (solid, gas)	Not applicable
Upper/Lower Flammability or Explosive Limit	Not available (upper); Not available (lower)
Vapour Pressure	4.4 kPa (33.0 mm Hg) at 20 ºC
Vapour Density (air = 1)	Not available
Relative Density (water = 1)	1.220
Solubility	Soluble in water; Not available (in other liquids)

Partition Coefficient, n-Octanol/Water (Log Kow)	Not available
Auto-ignition Temperature	520 ºC (968 ºF)
Decomposition Temperature	Not available
Viscosity	Not available (kinematic); 1.47 mPa.s at 20 ºC (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

None expected under normal conditions of storage and use.

Conditions to Avoid

Incompatible materials. Excess heat. Water, moisture or humidity.

Incompatible Materials

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

Hazardous Decomposition Products

Very toxic carbon monoxide, carbon dioxide; flammable hydrogen gas.

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 skin burns.

Serious Eye Damage/Irritation

Causes serious eye damage.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation

Causes severe nose and throat irritation.

Ingestion

Harmful based on limited evidence.

Aspiration Hazard

No information was located.

STOT (Specific Target Organ Toxicity) - Repeated Exposure

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
US DOT	UN1779	Formic Acid	8	II
Canadian TDG	UN1779	Formic Acid	8	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.

SECTION 16. OTHER INFORMATION

NFPA Rating	**Health - 3 Flammability - 2 Instability - 0**
SDS Prepared By	Alphachem Limited
Phone No.	(905)-821-2995
Date of Preparation	December 11, 2017
Date of Last Revision	December 11, 2017
References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS).
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