

SAFETY DATA SHEET

SECTION 1) CHEMICAL PRODUCT AND SUPPLIER'S IDENTIFICATION

CAS Number: 64-18-6
Product Name: Formic Acid 85%
Revision Date: Jan 16, 2018 **Date Printed:** Jan 17, 2018
Version: 1.1 **Supersedes Date:** Oct 23, 2017
Manufacturer's Name: Thames River Chemical Corp.
Address: 5230 Harvester Road Burlington, ON, CA, L7L 4X4
Emergency Phone: Canada Call CANUTEC: 1-888-CAN-UTEC (226-8832); U.S.A. Call CHEMTREC (800) 424-9300
Information Phone Number: 905-681-5353
Fax: 905-681-5377
Product/Recommended Uses: For laboratory or industrial use only.

SECTION 2) HAZARDS IDENTIFICATION

Classification

Acute aquatic toxicity - Category 3
Acute toxicity Inhalation - Category 3
Acute toxicity Oral - Category 4
Flammable Liquids - Category 4
Serious Eye Damage - Category 1
Skin Corrosion - Category 1B
Specific Target Organ Toxicity -Single Exposure (Respiratory Tract Irritation) - Category 3

Pictograms



Signal Word

Danger

Hazard Statements - Health

Toxic if inhaled
Harmful if swallowed
Causes serious eye damage
Causes severe skin burns and eye damage
May cause respiratory irritation

Hazard Statements - Physical

Combustible Liquid

Hazard Statements - Environmental

Harmful to aquatic life

Precautionary Statements - General

If medical advice is needed, have product container or label at hand.
Keep out of reach of children.

Read label before use.

Precautionary Statements - Prevention

- Avoid release to the environment.
- Avoid breathing dust/fume/gas/mist/vapors/spray.
- Use only outdoors or in a well-ventilated area.
- Wash thoroughly/Wash hands thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Keep container tightly closed.

Precautionary Statements - Response

- IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- Call a POISON CENTER or doctor.
- Specific treatment (see first-aid on the SDS).
- IF SWALLOWED: Call a POISON CENTER or doctor, if you feel unwell.
- Rinse mouth.
- In case of fire: Use carbon dioxide, alcohol foam, water spray or dry chemical to extinguish.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Immediately call a POISON CENTER or doctor.
- IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- Wash contaminated clothing before reuse.
- Call a POISON CENTER or doctor, if you feel unwell.

Precautionary Statements - Storage

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

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local/national/international regulation. Waste management should be in full compliance with national, regional and local laws.

Physical Hazards Not Otherwise Classified

No Data Available

Health Hazards Not Otherwise Classified

No Data Available

SECTION 3) COMPOSITION/INFORMATION ON INGREDIENTS

CAS	Chemical Name	% By Weight
0000064-18-6	FORMIC ACID	85%
0007732-18-5	WATER	15%

SECTION 4) FIRST-AID MEASURES

Inhalation

Get medical advice/attention if you feel unwell or are concerned. If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

Remove source of exposure or move person to fresh air and keep comfortable for breathing. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by the POISON CENTER/doctor.

Eye Contact

Immediately call a POISON CENTER/doctor. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for a duration of 30 minutes or until medical aid is available. Take care not to rinse contaminated water into the unaffected eye or onto the face.

Skin Contact

Take off immediately all contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash contaminated clothing before re-use. Immediately call a POISON CENTER/doctor. Rinse skin with lukewarm, gently flowing water/shower for a duration of 30 minutes or until medical aid is available.

Ingestion

If vomiting occurs naturally, lie on your side, in the recovery position. Immediately call a POISON CENTER/doctor.

Most Important Symptoms and Effects, Both Acute and Delayed

No Data Available

Indication of Any Immediate Medical Attention and Special Treatment Needed

No Data Available

SECTION 5) FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Small Fire : Dry chemical, foam, carbon dioxide, water-spray or alcohol-resistant foam. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Large Fire: Water spray, fog or alcohol-resistant foam.

Unsuitable Extinguishing Media

Do not use straight stream of water.

Specific Hazards in Case of Fire

Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Containers may explode in fire. Fire will produce irritating and corrosive gases. Contact with metals may evolve flammable hydrogen gas. Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive fumes.

Fire-fighting Procedures

Isolate immediate hazard area and keep unauthorized personnel out. Move undamaged containers from immediate hazard area if it can be done safely. Stop spill/release if it can be done safely. Cool containers with flooding quantities of water until well after fire is out. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot, burning liquid. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations. Large Fire: Dike fire-control water for later disposal; do not scatter the material

Special Protective Actions

Wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

SECTION 6) ACCIDENTAL RELEASE MEASURES

Emergency Procedure

Isolate hazard area and keep unauthorized personnel away. Stay uphill and/or upstream. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing. Ventilate closed spaces before entering. Evacuate and isolate hazard area and keep unauthorized personnel away.

Recommended Equipment

Wear chemical protective clothing and positive pressure self-contained breathing apparatus (SCBA). Wear liquid tight chemical protective clothing in combination with positive pressure self-contained breathing apparatus (SCBA).

Personal Precautions

DO NOT get on skin, eyes or clothing. Avoid breathing vapor or mist.

Environmental Precautions

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers.

Methods and Materials for Containment and Cleaning up

Ventilate area after clean-up is complete. Absorb Liquids in vermiculite, dry sand, earth, or similar inert material and deposit in sealed containers for disposal.

SECTION 7) HANDLING AND STORAGE

General

Wash hands after use. Do not get in eyes, on skin or on clothing. Do not breathe vapors or mists. Use good personal hygiene practices. Eating, drinking and smoking in work areas is prohibited. Remove contaminated clothing and protective equipment before entering eating areas. This product is not intended for human or animal consumption. All containers must be properly labelled. Eyewash stations and showers should be available in areas where this material is used and stored

Ventilation Requirements

Use only with adequate ventilation to control air contaminants to their exposure limits. Report ventilation failures immediately. The use of local ventilation is recommended to control emissions near the source.

Storage Room Requirements

Store in dry, cool areas, out of direct sunlight and away from other sources of heat. Empty container retain residue and may be dangerous. Keep containers securely sealed when not in use. Protect containers against banging or other physical damage when storing, transferring, or using them. Procedures must be conducted in a fume hood, glove box, or other suitable containment device. Segregate from other hazard classes and store in a cool, dry, well ventilated area, away from sources of ignition and incompatibilities. Provide secondary containment for toxic materials. Store, handle, and use corrosive materials in well-ventilated areas. Do not store on metal shelves. Store containers in plastic tubs or trays as secondary containment. Keep the smallest amount of material in work areas. Avoid rapid temperature changes in liquid storage areas. Store at temperatures above their respective freezing/melting point. Never store corrosives above eye level. Label cabinets with "TOXIC CHEMICALS" or similar warning.

SECTION 8) EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye protection

Wear indirect-vent, impact and splash resistant goggles when working with liquids

Skin Protection

Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Use an apron and over-boots of chemically impervious materials such as neoprene or nitrile rubber.

Respiratory Protection

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker, a respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 should be followed. Check with respiratory protective equipment suppliers.

Appropriate Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Chemical Name	CANsmg	CANspmm	CANtmg	CANtppm	OSHA STEL (mg/m3)	OSHA STEL (ppm)	OSHA TWA (mg/m3)	OSHA TWA (ppm)	OSHA Carcinogen	OSHA Tables (Z1, Z2, Z3)	OSHA Skin designation	ACGIH STEL (mg/m3)
FORMIC ACID	18	10	9	5			9	5		1		19

Chemical Name	ACGIH STEL (ppm)	ACGIH TWA (mg/m3)	ACGIH TWA (ppm)	ACGIH TLV Basis	ACGIH Carcinogen	ACGIH Notations
FORMIC ACID	10	9.4	5	URT, eye & skin irr		

irr - Irritation, URT - Upper respiratory tract

SECTION 9) PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Density	9.86 lb/gal
Specific Gravity	1.19
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Appearance	Clear, colourless liquid
Odor Description	pungent odour
Odor Threshold	11 mg/m ³
pH	2.4
Melting Point	-13 °C
Low Boiling Point	107 °C
High Boiling Point	N/A
Flash Point	65 °C
Vapor Pressure	33.5 mmHg
Vapor Density	1.6
Evaporation Rate	2.1
Upper Explosion Level	38
Lower Explosion Level	12
Water Solubility	Complete
Coefficient Water/Oil	-0.54
Viscosity	1.8 centipoise

SECTION 10) STABILITY AND REACTIVITY

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.
No corrosive effect on metal.

Stability

Stable under normal storage and handling conditions.

Conditions to Avoid

Avoid heat, sparks, flame, high temperature, freezing and contact with incompatible materials.
non-coated metals, base metals

Hazardous Reactions/Polymerization

Reacts with alkalis. Reacts with amines. Exothermic reaction.
Hazardous polymerization will not occur.

Incompatible Materials

Strong bases, acids, oxidizing and reducing agents.

Hazardous Decomposition Products

carbon dioxide, carbon monoxide

SECTION 11) TOXICOLOGICAL INFORMATION

Likely Route of Exposure

Inhalation, ingestion, skin absorption

Acute Toxicity

Toxic if inhaled

Harmful if swallowed

The Acute Toxicity Estimate (ATE) for an oral exposure to this mixture is >5000 mg/kg body weight

The Acute Toxicity Estimate (ATE) for a dermal exposure to this mixture is >5000 mg/kg body weight
The Acute Toxicity Estimate (ATE) for an inhalation (gas) exposure to this mixture is >20000 ppmV
The Acute Toxicity Estimate (ATE) for an inhalation (vapour) exposure to this mixture is >20 mg/l
The Acute Toxicity Estimate (ATE) for an inhalation (dust and mist) exposure to this mixture is >5 mg/l

Aspiration Hazard

No Data Available

Carcinogenicity

No Data Available

Germ Cell Mutagenicity

No Data Available

Reproductive Toxicity

No Data Available

Respiratory/Skin Sensitization

No Data Available

Serious Eye Damage/Irritation

Causes serious eye damage

Skin Corrosion/Irritation

Causes severe skin burns and eye damage

Specific Target Organ Toxicity - Repeated Exposure

No Data Available

Specific Target Organ Toxicity - Single Exposure

May cause respiratory irritation

0000064-18-6 FORMIC ACID

LC50 (inhalation, rat): 2000 ppm (4-hour exposure); cited as 15000 mg/m³ (15-minute exposure) (12, unconfirmed)

LC50 (inhalation, mouse): 825 ppm (4-hour exposure); cited as 6200 mg/m³ (15-minute exposure) (12, unconfirmed)

LD50 (oral, rat): 1100 mg/kg (12, unconfirmed)

LD50 (oral, mouse): 700 mg/kg (12, unconfirmed)

SECTION 12) ECOLOGICAL INFORMATION

Toxicity

No Data Available

Harmful to aquatic life

Mobility in Soil

No Data Available

Bio-accumulative Potential

No Data Available

Persistence and Degradability

No Data Available

Other Adverse Effects

No Data Available

SECTION 13) DISPOSAL CONSIDERATIONS

Waste Disposal

Empty Containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes. It is the responsibility of the user of the product to determine at the time of disposal whether the product meets local criteria for hazardous waste. Waste management should be in full compliance with national, provincial and local laws.

SECTION 14) TRANSPORT INFORMATION

U.S. DOT Information

UN number: UN1779
Proper shipping name: Formic acid with more than 85% acid by mass
Hazard class: 8 (3)
Packaging group: II
Hazardous substance (RQ): No Data Available
Toxic-Inhalation Hazard: No Data Available
Marine Pollutant: No Data Available
Note / Special Provision: No Data Available

Transport Canada Information

UN number: UN1779
Proper shipping name: Formic acid with more than 85% acid by mass
Hazard class: 8 (3)
Packaging group: II
Marine Pollutant: No Data Available
Transport in bulk (according to Annex II of MARPOL 73/78): No Data Available
Note / Special Provision: Note / Special Provision

SECTION 15) REGULATORY INFORMATION

CAS	Chemical Name	% By Weight	Regulation List
0000064-18-6	FORMIC ACID	85%	DSL,TSCA
0007732-18-5	WATER	15%	DSL,TSCA,EU_EC_Inventory - EC Inventory

SECTION 16) OTHER INFORMATION

Glossary

ACGIH- American Conference of Governmental Industrial Hygienists; ANSI- American National Standards Institute; Canadian TDG- Canadian Transportation of Dangerous Goods; CANsmg or CANspmm - Canadian Short Term Exposure Level in mg/L or in ppm; CANtmg or CANtppm - Canadian Time Weighted Average in mg/L or in ppm; CAS- Chemical Abstract Service; Chemtrec- Chemical Transportation Emergency Center(US); CHIP- Chemical Hazard Information and Packaging; DSL- Domestic Substances List; EC- Equivalent Concentration; EH40 (UK)- HSE Guidance Note EH40 Occupational Exposure Limits; EPCRA- Emergency Planning and Community Right-To-Know Act; ESL Effects screening levels; HMIS- Hazardous Material Information Service; LC- Lethal Concentration; LD- Lethal Dose; NFPA- National Fire Protection Association; OEL- Occupational Exposure Limits; OSHA- Occupational Safety and Health Administration, US Department of Labor; PEL- Permissible Exposure Limit; SARA (Title III)- Superfund Amendments and Reauthorization Act; SARA 313- Superfund Amendments and Reauthorization Act, Section 313; SCBA- Self Contained Breathing Apparatus; STEL-Short Term Exposure Limit; TCEQ Texas Commission on Environmental Quality; TLV- Threshold Limit Value; TSCA- Toxic Substances Control Act Public Law 94-469; TWA Time Weighted Value; US DOT- US Department of Transportation; WHMIS- Workplace Hazardous Materials Information System.

Version 1.1:

Revision Date: Jul 03, 2017

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