

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Formic Acid 85%

FO200-85

SECTION 01: PRODUCT INFORMATION AND COMPANY INFORMATION

MANUFACTURER: Same as above
PREPARED BY: Production Department
VERSION DATE: 01-Jan-15
TELEPHONE NO.: (519) 686-6882
EMERGENCY PHONE NO.: (613) 996-6666
CHEMICAL FAMILY: Not Available **CHEMICAL FORMULA:** Not Applicable
MOLECULAR WEIGHT: Not Applicable **MATERIAL USE:** Please Refer to technical literature
SYNONYMS: Methanoic Acid

SECTION 02: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredients	Conc. Approx. %	C.A.S. #	LD/50 (RTE/SPEC)	LC/50 (RTE/SPEC)	TLV
Formic Acid	60-100	64-18-6	1100 mg/kg	15 gm/m ³ /15M	N.Av.
Water	10-30	7732-18-5	N.Av.	N.Av.	N.Av.

SECTION 03: HAZARD IDENTIFICATION

ROUTE OF ENTRY

Eyes: Liquid causes severe irritation, experienced as discomfort or pain, excess blinking and tear production, marked excess redness and swelling of the conjunctiva, and chemical burns of the cornea. Prolonged contact with solutions can produce irreversible eye damage. Vapours or mists may cause eye irritation.

Skin: Corrosive. Causes chemical burns with discomfort or pain, severe excess redness and swelling, tissue destruction, fissures, ulceration, and possibly bleeding into the inflamed area. Prolonged or widespread contact may result in the absorption of potentially harmful amounts of material.

Inhalation: Harmful if inhaled. Causes irritation of the mouth, nose and throat. Symptoms of exposure may include; nasal discharge, hoarseness, coughing, chest pain and breathing difficulty. Accumulation of fluid in the lungs (pulmonary edema) may occur.

Ingestion: Harmful if swallowed. May cause burns of the mouth, throat and stomach. May cause pain, nausea, vomiting and diarrhea.

SECTION 04: FIRSTAID

Skin Contact: Remove contaminated clothing and laundry before reuse. Wash contaminated skin with mild soap and water for 15 minutes. Obtain medical attention immediately. Discard contaminated leather articles such as shoes and belt.

Eye Contact: Flush eyes with gently flowing water for at least 20 minutes or until the chemical is removed, while holding the eyelid(s) open. Take care not to rinse the contaminated water into the unaffected eye or face. Seek immediate medical attention.

Inhalation, Acute: If symptoms are experienced, remove source of contamination or move victim to fresh air. If symptoms persist, get medical attention. If the affected person is not breathing, apply artificial

respiration. If breathing is difficult, give oxygen. In situations where administering oxygen is appropriate, first aiders must be trained in the safe use and handling of oxygen. It is preferable to administer oxygen under a doctor's supervision or advice. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately. Immediate medical assistance is required.

Ingestion: Seek immediate medical attention. Do NOT induce vomiting. Never give anything by mouth to an unconscious or convulsing person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Administer artificial respiration if breathing has stopped. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation (CPR) immediately.

Notes to physician: Treatment based on sound judgment of physician and individual reactions of patient. Observe for pulmonary edema.

SECTION 05: FIRE EXPLOSION HAZARD AND FIRE FIGHTING MEASURES

FLAMMABLE?	No
IF YES, UNDER WHICH CONDITIONS?	
FLASH POINT (TCC) (C):	>60 (F)
FLAMMABLE LIMITS:	LEL(% BY VOL.): 12 UEL(% BY VOL): 38
AUTO IGNITION TEMPERATURE (C)	480.4
EXTINGUISHING MEDIA	Alcohol foam Carbon dioxide. Dry chemical. Fire fighters should wear full protective clothing, including self-contained breathing equipment.
SPECIAL PROCEDURES:	
HAZARDOUS COMBUSTION PRODUCTS:	Not Available
UNUSUAL FIRE AND EXPLOSION HAZARDS	Isolate and restrict area access. Stop leak only if safe to do so. Water run-off and vapour cloud may be corrosive. Containers exposed to intense heat from fires should be cooled with water to prevent vapour pressure build-up which could result in container rupture. Water streams should not be directed to the liquid, as this will cause the liquid to boil and generate more vapour. Dike and collect water used to fight fire for neutralization before release. Thoroughly decontaminate fire fighting equipment after use. Oxidizing chemicals may accelerate the burning rate in a fire situation.
SENSITIVITY TO STATIC DISCHARGE	Not Available
SENSITIVITY TO MECHANICAL IMPACT:	Not Available

SECTION 06: ACCIDENTAL RELEASE MEASURES

Leak and Spill Procedure: Procedure for Clean Up: Isolate hazard area and restrict access. Eliminate all ignition sources. Stop leak only if safe to do so. Neutralize the residue with a dilute solution of sodium carbonate.
Small spills: soak up with absorbent material and scoop into containers.
Large spills : prevent contamination of waterways. Dike and pump into suitable containers. Clean up residual with absorbent material, place in appropriate container and flush with water.
Personal Precautionary Measures:Wear appropriate protective equipment. Isolate for 800 metres or 0.5 miles in all directions if tank, rail car, or tank truck is involved in fire. Evacuate downwind areas as conditions warrant to prevent exposure and to allow vapours or fumes to dissipate. Spills may expose downwind areas to toxic or flammable concentrations over considerable distances in some cases.
Environmental Precautionary Measures: Prevent from entering sewers, waterways or low areas. Consult local authorities.

SECTION 07: HANDLING AND STORAGE

Handling Procedures and Storage Requirements

Handling: Handle and open containers with care. Avoid contact with eyes, skin and clothing. Avoid breathing vapor. Keep the containers closed when not in use. Keep away from heat, sparks and flame. Ensure proper electrical grounding procedures are in place. Fixed equipment as well as transfer containers and equipment should be grounded to prevent accumulation of static charge. Wear all protective equipment. Use with adequate ventilation. Use good personal hygiene. Launder contaminated clothing prior to reuse. Protect against physical damage. Containers which have been exposed to heat may be under internal pressure. These should be cooled and carefully vented before opening. Formic acid decomposes to carbon monoxide, a toxic gas, and may cause pressure build-up in closed containers. Never enter an empty formic acid container until tests indicate absence of carbon monoxide. Use precautions against carbon monoxide exposure when opening containers or entering a poorly ventilated storage area. The rate of decomposition of formic acid to carbon monoxide is affected by time and heat. Decomposition significantly increases above 30 C(86 F). Storage: Keep containers tightly closed. Store in a cool, dry, well ventilated area, away from heat and ignition sources. Store out of direct sunlight and on an impermeable floor.

SECTION 08: PERSONAL PROTECTIVE EQUIPMENT / EXPOSURE CONTROLS

GLOVES/TYPE:	Butyl rubber gloves. Neoprene gloves. PVC gloves.
RESPIRATOR/TYPE:	Based on workplace contaminant level and working limits of the respirator, use a respirator approved by NIOSH. The following is the minimum recommended equipment for an occupational exposure level. For concentrations > 1 and < 100 times the occupational exposure level: Use Type C full facepiece supplied- respirator operated in positive-pressure or continuous-flow mode. For concentrations > the IDLH level or unknown concentration (such as in emergencies): Use self- contained breathing apparatus with full facepiece in positive-pressure mode or Type C positive- pressure full facepiece supplied-air respirator with an auxiliary positive-p ressure self- contained breathing apparatus escape system.
EYE/TYPE:	Chemical goggles; also wear a face shield if splashing hazard exists.
OTHER/TYPE:	Ensure that eyewash stations and safety showers are proximal to the work-station location
ENGINEERING CONTROL	Local ventilation recommended where mechanical ventilation is ineffective in controlling airborne concentrations below the recommended occupational exposure limit.

SECTION 09: PHYSICAL AND CHEMICAL PROPERTIE

PHYSICAL STATE/APPEARANCE:	Liquid	ODOUR THRESHOLD:	N. Av.
ODOUR:	Pungent	VAPOUR DENSITY (Air=1):	N. Av.
VAPOUR PRESSURE (mm Hg @ 20C):	19 - 23 mmHg	SPECIFIC GRAVITY:	1.195
EVAPORATION RATE (Ether = 1):	2.1	FREEZING POINT (C)	-26 to -7
BOILING POINT (C):	105 - 107	% VOLATILE (WT):	approx 1.59
Ph (% SOLUTION):	1.9		
SOLUBILITY IN WATER (% W/W)	N. Av.		

SECTION 10: STABILITY AND REACTIVITY

CHEMICALLY STABLE?	Stable
IF NO, UNDER WHICH CONDITIONS?	
INCOMPATIBILITY WITH OTHER SUBSTANCES	Yes
IF YES, WITH WHICH ONES:	Oxidizing materials. Reducing agents. Strong acids and bases. Silica gel. Nickel. Aluminum. Bauxite
SPECIAL REACTIVITY AND UNDER WHAT CONDITIONS	
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide. Carbon dioxide.

SECTION 11: TOXICOLOGICAL INFORMATION

EXPOSURE LIMIT OF MATERIAL	
LC 50 OF MATERIAL, SPECIES AND ROUTE	See Sec 2
LD 50 OF MATERIAL, SPECIES AND ROUTE	See Sec 2
CARCINOGENICITY OF MATERIAL	
REPRODUCTIVE EFFECTS:	
IRRITANCY OF MATERIAL	
SENSITIZING CAPABILITY OF MATERIAL	
SYNERGISTIC MATERIALS	

SECTION 12: ECOLOGICAL INFORMATION

AQUATIC TOXICITY	Biodegrades easily in water. Low potential to bioaccumulate.
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SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:	Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations. Contaminated Packaging: Empty containers should be recycled or disposed of through an approved waste management facility.
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SECTION 14: TRANSPORT INFORMATION

TDG CLASSIFICATION	Class 8, Formic Acid
UN NUMBER:	1779

PACKING GROUP: II

Special Provisions for Transport

SECTION 15: REGULATORY INFORMATION

WHMIS CLASSIFICATION B3 E

B3 COMBUSTIBLE LIQUIDS
E CORROSIVE MATERIAL

SECTION 16: OTHER INFORMATION

ABBREVIATIONS USED: N.Av. = Not Available
N.App. / N.Ap. = Not Applicable

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SOURCES: Supplier MSDS

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