

PRODUCT: FORMIC ACID 85%

SECTION 01: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: T. DONOVAN & SON (1997) LTD.
700 WILSON STREET
SAINT JOHN, NEW BRUNSWICK
CANADA E2M 3V2
TOLL FREE: 1-888-799-2645 / LOCAL (506) 642-1500

PRODUCT NAME: Formic Acid 85%.

CHEMICAL FORMULA: CH₂(O₂).

CHEMICAL FAMILY: Organic Acid.

MOLECULAR WEIGHT: 46.03.

MATERIAL USE: Antibacterial Agent.

EMERGENCY PHONE NUMBER: (613)-996-6666

SECTION 02: HAZARDS IDENTIFICATION



SIGNAL WORD: DANGER.

HAZARD CLASSIFICATION: Flammable Liquids - Category 3.
Acute Toxicity (Inhalation) - Category 3.
Acute Toxicity (Oral) - Category 4.
Skin Corrosion - Category 1A.
Serious Eye Damage - Category 1.

HAZARD STATEMENT: **H226:** Flammable liquid and vapour.
H331: Toxic if inhaled.
H302: Harmful if swallowed.
H314: Causes severe skin burns and eye damage.

PRECAUTIONARY STATEMENT: **P271:** Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P210: Keep away from heat/sparks/open flames/hot surfaces and other ignition sources - no smoking.
P260: Do not breathe dust/fume/gas/mist/vapours/spray.
P243: Take precautionary measures against static discharge.
P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P264: Wash thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P242: Use only non-sparking tools.
P240: Ground/bond container and receiving equipment.
P310: Immediately call a POISON CENTER or doctor/physician.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P301 + P330 + P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P370+P378: In case of fire: use dry sand, dry chemical or alcohol resistant foam for extinction.

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SECTION 02: HAZARDS IDENTIFICATION**P403+P235:** Store in a well-ventilated place. Keep cool.**P233:** Keep container tightly closed.**P405:** Store locked up.**P501:** Dispose of contents/containers in accordance with federal, provincial, and or local regulations.**OTHER HAZARDS:**

No Data Available.

SECTION 03: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT(S)	CAS #	WT. %
Formic Acid	64-18-6	85

Definitions:

CAS - Chemical Abstract Service registry number.

WT. % - Percent Weight.

SECTION 04: FIRST AID MEASURES**GENERAL ADVICE:**

Move out of dangerous area. Consult a physician. Show the safety data sheet to the doctor in attendance.

IF INHALED:

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

IN CASE OF SKIN CONTACT:

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water for at least 20 minutes. Consult a physician.

IN CASE OF EYE CONTACT:

Irrigate eyes for at least 15 minutes with copious of water, keeping eyelids apart and away from eyeballs during irrigation.

IF SWALLOWED:

Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. Do not leave victim unattended.

SECTION 05: FIRE FIGHTING MEASURES**FLAMMABILITY:**

Refer to Flash Point.

SUITABLE EXTINGUISHING MEDIA:

Suitable for surrounding fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

HAZARDOUS COMBUSTION PRODUCTS:

Oxides of Carbon.

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL:

No Data Available.

SPECIAL PROCEDURES:

Evacuate hazard area. Wear full protective equipment including a self-contained breathing apparatus.

SECTION 06: ACCIDENTAL RELEASE MEASURES**PERSONAL PRECAUTIONS:**

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe area.

ENVIRONMENTAL PRECAUTIONS:

Do not allow product to enter drains.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN UP:

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

SECTION 07: HANDLING AND STORAGE**PRECAUTIONS FOR SAFE HANDLING:**

Handle in accordance with good industrial hygiene and safety practices. Avoid contact with eyes, skin and clothing. Avoid breathing mist or vapour. Always add acid to water. Wear protective equipment during handling. Use adequate ventilation. Follow label warnings even after container is emptied.

CONDITIONS FOR SAFE STORAGE:

Protect container from physical damage. Keep the container tightly closed when not in use. Store away from incompatible materials. Store in a cool and well-ventilated area.

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SECTION 08: EXPOSURE CONTROLS/PERSONAL PROTECTION

INGREDIENT(S)	ACGIH TLV		OSHA PEL		NIOSH
	TWA	STEL	TWA	STEL	REL
Formic Acid	5 ppm	100 ppm	-	-	-

Definitions:

ACGIH - American Conference of Governmental Industrial Hygienists.
 NIOSH - National Institute for Occupational Safety and Health.
 OSHA - Occupational Safety and Health Administration.
 PEL - Permissible Exposure Limit.

RELs - Recommended Exposure Limits.
 STEL - Short-term Exposure Limit.
 TLV - Threshold Limit Value.
 TWA - Time Weighted Average.

EXPOSURE LIMIT OF MATERIAL:	ACGIH TLV: TWA Value 5 ppm; STEL Value 100 ppm.
ENGINEERING CONTROLS:	Good ventilation should be provided to keep vapour and mist concentrations below the exposure limits. Avoid all sources of ignition: heat, sparks, open flame.
RESPIRATORY PROTECTION:	Use NIOSH approved supplied-air respirator.
SKIN AND BODY PROTECTION:	Acid-proof gauntlet gloves such as: polyvinyl chloride (PVC), neoprene or nitrile. Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
EYE/FACE PROTECTION:	Splash proof chemical goggles. Face shield.
OTHER/TYPE:	Eye wash station and safety shower should be located near the work station
NOTE:	In case of emergency or where there is a strong possibility of considerable exposure, wear a complete acid suit with hood, boots, and gloves. If acid vapour or mist are present and exposure limits may be exceeded, wear appropriate NIOSH respiratory protection.

SECTION 09: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid.
ODOUR:	Acetous.
ODOUR THRESHOLD:	No Data Available.
pH:	2.
MELTING POINT/FREEZING POINT:	No Data Available.
BOILING POINT:	~105°C.
FLASH POINT, METHOD:	56 DIN 51755.
EVAPORATION RATE:	No Data Available.
FLAMMABILITY (SOLIDS AND GASES):	Not Applicable.
UPPER FLAMMABLE LIMIT (% BY VOL):	34.
LOWER FLAMMABLE LIMIT (% BY VOL):	14.3.
VAPOUR PRESSURE:	~ 32 mmHg.
VAPOUR DENSITY (AIR=1):	No Data Available.
SPECIFIC GRAVITY (WATER=1):	1.2.
SOLUBILITY IN WATER (% W/W):	Miscible in Water.
AUTO IGNITION TEMPERATURE:	480°C. (DIN 51794).
PARTITION COEFFICIENT N-OCTANOL/WATER:	-2.1 (LOG POW @23c).
DECOMPOSITION TEMPERATURE:	No Data Available.
VISCOSITY:	Kinematic 1.47 mm ² /s (20°C); dynamic 1.8 MPA.S (calculated).

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY:	Avoid Incompatibles.
CHEMICAL STABILITY:	Stable under recommended storage conditions.
POSSIBILITY OF HAZARDOUS REACTIONS:	Corrosive effect on metals.

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SECTION 10: STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Avoid all sources of ignition; heat, sparks, open flame.

INCOMPATIBLE MATERIALS: Oxidizing Agents, and Bases.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, and nitrogen oxides.

SECTION 11: TOXICOLOGICAL INFORMATION

INGREDIENT(S)	LC50	LD50
Formic Acid	7.85 mg/L Rat / 4H (BASF-Test)	730 mg/kg

ACUTE TOXICITY:

ORAL LD50: 730 mg/kg.

INHALATION LC50: 7.85 mg/L Rat / 4H (BASF-Test).

DERMAL LD50: No Data Available.

SKIN CORROSION / IRRITATION: Contact may cause burns and permanent injury.

SERIOUS EYE DAMAGE / EYE IRRITATION: Causes serious eye damage.

RESPIRATORY OR SKIN SENSITIZATION: No Data Available.

GERM CELL MUTAGENICITY: No Data Available.

CARCINOGENICITY: This product does not contain any ingredient designated by International Agency for Research on Cancer (IARC), National Toxicology Program (NTP), ACGIH or OSHA as probable or suspected human carcinogens.

REPRODUCTIVE TOXICITY: No Data Available.

SPECIFIC TARGET ORGAN TOXICITY (STOT) - SINGLE EXPOSURE: No Data Available.

STOT - REPEAT EXPOSURE: No Data Available.

ASPIRATION HAZARD: No Data Available.

POTENTIAL HEALTH EFFECTS: Inhalation - Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.
Ingestion - May be harmful if swallowed.
Eyes - Causes severe eye burns.
Skin - May be harmful if absorbed through skin. Causes skin burns. Causes skin irritation.

SIGNS AND SYMPTOMS OF EXPOSURE: Overexposure may cause: vomiting, aspiration pneumonia, circulatory collapse, death, acidosis, abdominal cramps, shortness of breath, hypotension, nausea, diarrhea, salivation.

SECTION 12: ECOLOGICAL INFORMATION

PERSISTENCE AND DEGRADABILITY: Readily Biodegradable.

BIOACCUMULATIVE POTENTIAL: Significant accumulation in organisms is not to be expected.

TOXICITY: LC50 (96H) 46-100 mg/L, *Leuciscus idus* (Ide) (Static).

MOBILITY IN SOIL: The substance will not evaporate into the atmosphere from the water surface. Adsorption to solid soil phase is not expected.

OTHER ADVERSE EFFECTS: Biochemical Oxygen Demand (BOD) incubation period 5 D: 86 mg/g.

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL METHODS: In accordance with municipal, Provincial and Federal Regulations

PRODUCT: Avoid release to the environment.

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SECTION 14: TRANSPORT INFORMATION

Transportation of Dangerous Goods (TDG):	Regulated.
UNITED NATIONS (UN) NUMBER:	1779
TRANSPORT HAZARD CLASS:	8 (3)
PACKING GROUP:	II
PROPER SHIPPING NAME:	FORMIC ACID.
SPECIAL SHIPPING INSTRUCTIONS:	Refer to TDG Regulations.

SECTION 15: REGULATORY INFORMATION

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) CLASSIFICATION:	B3, D2B, E.
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HAZARDOUS PRODUCT REGULATIONS (HPR) COMPLIANCE:	This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.
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SECTION 16: OTHER INFORMATION

PREPARED BY:	T. Donovan & Son (1997) Ltd.
PREPARATION DATE:	May 2018

DISCLAIMER:

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