

FORMIC ACID 85%

Version 1.1 Revision Date: 10/11/2016 SDS Number: 150000103880 Date of last issue: -
Date of first issue: 09/06/2016
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SECTION 1. IDENTIFICATION

Product name : FORMIC ACID 85%

Product code : 51376-00, P513764H, N513763S, N513764S, N513767S, N513768S, N513769S, P513761G, P513761A, P513761B, P513761C, P513761D, P513762A, P513761E, P513764G, P513761F, P513762G, P513762F, P513762E, P513762D, P513762C, P513762B, P513762H, P513764A, P513764F, P513764E, P513764B, P513764D, P513764C, P513762I

Manufacturer or supplier's details

Company name of supplier : Eastman Chemical Company

Address : 200 South Wilcox Drive
Kingsport TN 37660-5280

Telephone : (423) 229-2000

Emergency telephone : CHEMTREC: +1-800-424-9300, +1-703-527-3887 CCN7321

Recommended use of the chemical and restrictions on use

Recommended use : pickling acids
adjustment of pH value in textile and leather industry

Restrictions on use : No information available.

SECTION 2. HAZARDS IDENTIFICATION**GHS Classification**

Flammable liquids : Category 4

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 3

Skin corrosion : Category 1

Serious eye damage : Category 1

GHS label elements

Hazard pictograms : 

Signal Word : Danger

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Hazard Statements : H227 Combustible liquid.
 H302 Harmful if swallowed.
 H314 Causes severe skin burns and eye damage.
 H331 Toxic if inhaled.

Precautionary Statements : **Prevention:**
 P210 Keep away from heat/sparks/open flames/hot surfaces.
 No smoking.
 P261 Avoid breathing vapors.
 P264 Wash hands thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P271 Use only outdoors or in a well-ventilated area.
 P280 Wear protective gloves/ protective clothing/ eye protection/
 face protection.
Response:
 P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT
 induce vomiting.
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately
 all contaminated clothing. Rinse skin with water or shower.
 P304 + P340 IF INHALED: Remove person to fresh air and
 keep comfortable for breathing.
 P305 + P351 + P338 IF IN EYES: Rinse cautiously with water
 for several minutes. Remove contact lenses, if present and easy
 to do. Continue rinsing.
 P310 Immediately call a POISON CENTER or doctor/ physician.
 P363 Wash contaminated clothing before reuse.
 P370 + P378 In case of fire: Use water spray, alcohol-resistant
 foam, dry chemical or carbon dioxide to extinguish.
Storage:
 P403 + P233 Store in a well-ventilated place. Keep container
 tightly closed.
 P405 Store locked up.
Disposal:
 P501 Dispose of contents/ container to an approved waste dis-
 posal plant.

Other hazards

pungent
 Odor

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Ingredients**

Chemical name	CAS-No.	Concentration (% w/w)
formic acid	64-18-6	> 85 - 87

SECTION 4. FIRST AID MEASURES

General advice : Take off all contaminated clothing immediately.
 Remove victim from exposure and then have him lie down in

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- the recovery position.
 If not breathing, give artificial respiration.
- If inhaled : Remove person to fresh air and keep comfortable for breathing.
 Get immediate medical advice/ attention.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
 Cover wound with sterile dressing.
 Get immediate medical advice/ attention.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
 Immediate medical attention is required.
- If swallowed : Rinse mouth with water.
 Drink plenty of water.
 Do NOT induce vomiting.
 Never give anything by mouth to an unconscious person.
 Get immediate medical advice/ attention.
- Most important symptoms and effects, both acute and delayed : corrosive effects
 Harmful if swallowed.
 Causes serious eye damage.
 Toxic if inhaled.
 Causes severe burns.
 Harmful if swallowed.
 Causes serious eye damage.
 Toxic if inhaled.
 Causes severe burns.
- Notes to physician : Treat symptomatically.
-

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water
 Dry powder
 Alcohol-resistant foam
 Carbon dioxide (CO₂)
- Hazardous combustion products : Carbon monoxide
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus and protective suit.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Keep people away from and upwind of spill/leak.
Wear respiratory protection.
Avoid contact with skin, eyes and clothing.

Environmental precautions : Do not empty into drains.

Methods and materials for containment and cleaning up : Large spills should be collected mechanically (remove by pumping) for disposal.
Residues
Soak up with inert absorbent material.
Sand
Universal binder

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Keep away from sources of ignition - No smoking.

Advice on safe handling : Use only with adequate ventilation.
The pressure in sealed containers can increase under the influence of heat.
Keep away from heat.

Ensure that eyewash stations and safety showers are close to the workstation location.

Conditions for safe storage : Keep away from sources of ignition - No smoking.
Protect from sunlight.
Keep away from combustible material.
The product may form CO (carbon monoxide) under prolonged storage.
Before entering storage tanks, the CO (carbon monoxide) level should be checked.
Materials to avoid
Bases
Amines
Strong acids and oxidizing agents
Copper
Aluminum
Combustible material

Recommended storage temperature : < 30 °C

Storage period : <= 24 Months

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
formic acid	64-18-6	TWA	5 ppm	ACGIH
		STEL	10 ppm	ACGIH
		TWA	5 ppm 9 mg/m ³	NIOSH REL
		TWA	5 ppm 9 mg/m ³	OSHA Z-1
		TWA	5 ppm 9 mg/m ³	OSHA P0

Engineering measures : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Respiratory protection : Respirator type:
Use NIOSH approved respiratory protection.

Hand protection

Material : Wear suitable gloves.

Material : Chloroprene

Material : butyl-rubber

Remarks : Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).

Eye protection : Tightly fitting safety goggles
Face-shield

Skin and body protection : Body protection suitability and breakthrough time will differ depending on the specific use conditions.
acid-resistant protective clothing
Chemical resistant apron
Footwear protecting against chemicals

Protective measures : Avoid contact with skin, eyes and clothing.
Avoid inhalation of vapor or mist.

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : colorless, clear

Odor : pungent

Odor Threshold : not determined

pH : < 1

Melting point/range : -13.5 °C

Boiling point/boiling range : 107 °C

Flash point : 67 °C
Method: Pensky-Martens closed cup

Evaporation rate : not determined

Flammability (solid, gas) : Not applicable

Upper explosion limit : upper flammability limit
51 %(V)
formic acid

Lower explosion limit : lower flammability limit
18 %(V)
formic acid

Vapor pressure : < 4.4 kPa (20 °C)

Relative vapor density : No data available

Relative density : 1.2 (20 °C)

Density : 1.2 g/cm³ (20 °C)

Solubility(ies)
Water solubility : completely soluble

Partition coefficient: n-octanol/water : log Pow: -2.1 (23 °C)
pH: 7
formic acid

Decomposition temperature : 350 °C
Method: DSC
formic acid

Viscosity
Viscosity, dynamic : No data available

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Viscosity, kinematic : No data available
Explosive properties : Not classified
Oxidizing properties : Not classified
Surface tension : 71.5 mN/m, 20 °C, formic acid

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Reacts with the following substances:
 Bases
 Amines

Chemical stability : Stable under normal conditions.
 The product may form CO (carbon monoxide) under pro-
 longed storage.

Possibility of hazardous reac- : Exothermic reaction
tions : Reacts with the following substances:
 Bases
 Amines

Conditions to avoid : Do not expose to temperatures above: 30 °C
 To avoid thermal decomposition, do not overheat.

Incompatible materials : Strong oxidizing agents
 Strong acids
 Bases
 Amines
 Copper
 Aluminum
 Combustible material

Hazardous decomposition : Thermal decomposition
products : Carbon monoxide
 The product may form CO (carbon monoxide) under pro-
 longed storage.

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Harmful if swallowed.
Toxic if inhaled.

Product:

Acute oral toxicity : Acute toxicity estimate: 588.24 mg/kg
 Method: Calculation method

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Acute inhalation toxicity : Acute toxicity estimate: 3.53 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : Assessment: Not classified

Ingredients:**formic acid:**

Acute oral toxicity : LD50 Oral (Rat): 730 mg/kg

Acute inhalation toxicity : LC50 (Rat): 7.85 mg/l
Exposure time: 4 h

Skin corrosion/irritation

Causes severe burns.

Ingredients:**formic acid:**

Assessment: Corrosive

Serious eye damage/eye irritation

Causes serious eye damage.

Ingredients:**formic acid:**

Assessment: Corrosive

Respiratory or skin sensitization

Skin sensitization: Not classified based on available information.

Respiratory sensitization: Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

Product:

Remarks: This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

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Bioaccumulative potential**Ingredients:****formic acid:**

Bioaccumulation : Bioconcentration factor (BCF): 3.2
 Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: -2.1

Mobility in soil**Product:**

Mobility : Medium: Water
 Remarks: soluble

Other adverse effects**Product:**

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
 Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Ingredients:**formic acid:**

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : In accordance with local and national regulations.
 Do not dispose of waste into sewer.
 Can be incinerated, when in compliance with local regulations.

Contaminated packaging : In accordance with local and national regulations.
 The hazard and precautionary statements displayed on the label also apply to any residues left in the container.

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SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

formic acid	64-18-6	85 %
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Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

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Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

formic acid	64-18-6	85 %
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The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

formic acid	64-18-6	85 %
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This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

The ingredients of this product are reported in the following inventories:

CH INV : On the inventory, or in compliance with the inventory

DSL : On the inventory, or in compliance with the inventory

AICS : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

ISHL : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : Not listed

TSCA : On the inventory, or in compliance with the inventory

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TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION**Full text of other abbreviations**

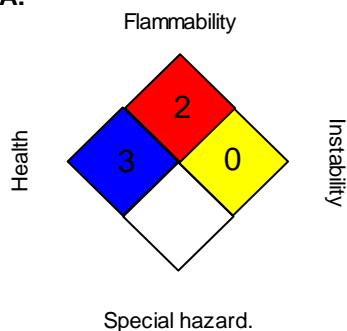
AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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Further information

NFPA:



HMIS III:

HEALTH	3
FLAMMABILITY	2
PHYSICAL HAZARD	0

0 = not significant, 1 = Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

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The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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