

Material Safety Data Sheet

Revision Date: 14.10.2020

Formacid ECO

SECTION 1: Identification of the substance/mixture and of the company/undertaking

. Identification of the substance or mixture

Product name : Formacid ECO
Synonyms : Formic Acid 85% substitution
Formula : Combination product

. Use of the Substance/Mixture

Application : Chemical intermediate, Mining, Manufacture of textiles, leather.

. Company/Undertaking Identification

Address : **NOVICHEM CO.**
No.30, Magnolia Str, Qaem Maqam Farahani Ave.
Tehran 15886/13941 IRAN

. Emergency and contact telephone numbers

Contact telephone number : **+98-21-88329799 (Product information)**
(product information):

SECTION 2: Hazards identification

Hazards description

Inhalation: Inhalation of vapours may cause smarting pain in nose and throat, cough and hoarseness. Inhalation of high concentrations may also cause pulmonary oedema that may occur after several hours. Prolonged and repeated contact with vapours may cause inflammation in nose and throat, chronic bronchitis and dental corrosion.

Skin contact: Skin contact may cause severe burns with redness, smarting pain and wounds. Prolonged and repeated contact with vapours may cause calluses.

Eye contact: Splashes causes intensive pain and corneal burns. Risk of permanent eye damage. Vapours may be substantially irritating.

Ingestion: Ingestion may cause severe burns with burning pain, vomiting and eventually shock and kidney damage. Risk of permanent damage due to scarring of the esophagus and stomach.

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Acute toxicity - Oral

Category 4 - (H302)

Acute toxicity - Inhalation (Vapours)

Category 3 - (H331)

Skin corrosion/irritation

Category 1 Sub-category B - (H314)

Serious eye damage/eye irritation

Category 1 - (H318)

EUH071 - Corrosive to the respiratory tract

2.2. Label elements**Symbols/Pictograms****Signal word**

Danger

Hazard statements

H331 - Toxic if inhaled

H314 - Causes severe skin burns and eye damage

H302 - Harmful if swallowed

EUH071 - Corrosive to the respiratory tract

Precautionary Statements

P280 - Wear protective clothing/eye protection

P260 - Do not breathe vapour

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

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower

P310 - Immediately call a POISON CENTER or doctor

SECTION 3: Composition/information on ingredients**3.1 Substances**

Chemical Entity	Formula	CAS Number
Formic Acid	No Data Available	64-18-6
Other ingredients not considered hazardous	No Data Available	

SECTION 4: First aid measures**4.1. Description of first aid measures**

General advice	Begin first-aid measures immediately!. Causes severe skin burns and eye damage. If unconscious place in recovery position and seek medical advice. First aider: Pay attention to self-protection. Emergency shower and eye wash facilities must exist in the work place.
Inhalation	Remove to fresh air. Call a doctor or poison control centre immediately. If experiencing respiratory symptoms:. Artificial respiration and/or oxygen may be necessary.
Skin contact	Wash off immediately with plenty of water for at least 15 minutes. Use lukewarm water if possible. Take off contaminated clothing. Seek immediate medical attention/advice.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Use lukewarm water if possible. Seek immediate medical attention/advice.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink plenty of water afterwards. Remove from exposure, lie down. Seek immediate medical attention/advice.
Self-protection of the first aider	Avoid any direct contact with the product.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation: Inhalation of vapours may cause smarting pain in nose and throat, cough and hoarseness. Inhalation of high concentrations may also cause pulmonary oedema that may occur after several hours. Prolonged and repeated contact with vapours may cause inflammation in nose and throat, chronic bronchitis and dental corrosion. Skin contact: Skin contact may cause severe burns with redness, smarting pain and wounds. Eye contact: Splashes causes intensive pain and corneal burns. Risk of permanent eye damage. Vapours may be substantially irritating. Ingestion: Ingestion may cause severe burns with burning pain, vomiting and eventually shock and kidney damage. Risk of permanent damage due to scarring of the esophagus and stomach.

4.3. Indication of any immediate medical attention and special treatment needed

Product is a corrosive material. Use of gastric lavage or emesis is contra-indicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal oedema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂). Extinguishing powder. Water spray (fog). Alcohol resistant foam.

Small Fire Carbon dioxide (CO₂). Extinguishing powder.

Large Fire Alcohol resistant foam. Water spray (fog).

Unsuitable extinguishing media

High volume water jet.

5.2. Special hazards arising from the substance or mixture

In the event of fire and/or explosion do not breathe fumes. Most vapours are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). The product causes burns of eyes, skin and mucous membranes. Vapours may form explosive mixture with air. Keep product and empty container away from heat and sources of ignition. Thermal decomposition can lead to release of irritating and toxic gases and vapours.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO₂).

5.3. Advice for firefighters

Keep away from sources of ignition. Prevent fire fighting water from entering surface water or groundwater. Cool containers with spray water from a safe distance. Never use welding or cutting torch on or near container (even empty) because product may ignite explosively.

Additional information

Cool containers with flooding quantities of water until well after fire is out. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition. Ensure adequate ventilation, especially in confined areas. Prevent further leakage or spillage if safe to do so.

6.2. Environmental precautions

Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Local authorities should be advised if significant spillages cannot be contained. Dilute with plenty of water. See Section 12 for additional ecological information.

6.3. Methods and material for containment and cleaning up

Methods for containment

Small spill Dilute with water and wipe up or absorb with inert material.
Large spill Dyke to collect large liquid spills. Pump up the product into a spare container suitably labelled.

Methods for cleaning up

Flush area with flooding quantities of water

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Ensure adequate ventilation, especially in confined areas. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment. Avoid contact with skin and eyes. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems. For details, see the separate exposure scenario(s).

General Hygiene Considerations

When using do not eat, drink or smoke. Take off all contaminated clothing and wash it before re-use.

7.2. Conditions for safe storage, including any incompatibilities

Keep tightly closed in a dry and cool place. Keep in properly labelled containers. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

7.3. Specific end use(s)

For details, see the separate exposure scenario(s).

SECTION 8: Exposure controls/personal protection

Appropriate engineering controls

Emergency shower and eye wash facilities must exist in the work place. Ensure adequate ventilation, especially in confined areas. Comply with 2014/34/EU concerning equipment and protective systems intended for use in potentially explosive atmospheres and, Directive 1999/92/EC regarding minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres.

Skin and body protection	Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes).
Respiratory protection	Suitable respiratory protection for lower concentrations or short-term exposure: Gas filter for gases/vapours of organic compounds (boiling point >65°C, e. g. Type A) Suitable respiratory protection for higher concentrations or long-term exposure: Self-contained breathing apparatus.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

liquid
colourless

Odour

Pungent

Odour threshold

> 11 ppm

Property

Value

Remarks • Method

pH

-1.5

@ 20 °C

Melting point / freezing point

< -20 °C

Boiling point / boiling range

141 °C

OECD Test No. 103: Boiling Point

Flash point

110 °C / 144 °F

ASTM (ASTM D 7094-04)

Evaporation rate

No information available

Flammability (solid, gas)

Not applicable

Explosive limits

SECTION 10: Stability and reactivity

10.1. Reactivity

The substance may act as a source for a formyl group or a hydride ion. Due to its high acidity, its solutions in alcohols form esters spontaneously. Formic acid has as well reducing properties and can reduce solutions of gold, silver, and platinum to the metals. Formic acid has ability to participate in addition reactions with alkenes. The substance and alkenes readily react to form formate esters.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air. Contact with metals may evolve flammable hydrogen gas. Reacts with: Strong bases, Oxidising substances. Mixtures with high formic acid content can decompose spontaneously and create overpressure and receptacle burst. Sunlight and heat will increase the risk of decomposition.

10.4. Conditions to avoid

Direct sunlight and heat.

10.5. Incompatible materials

Formic acid may react with alkalies and oxidizing materials such as peroxides, nitric acid, and chromic acid. It is also incompatible with concentrated sulphuric acid, nitromethane, finely powdered metals, permanganates, strong bases och oxidizing agents.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Information on likely routes of exposure**

Inhalation. Dermal.

Symptoms related to the physical, chemical and toxicological characteristics

See Section 4 for more information.

Numerical measures of toxicity**Acute toxicity**

Toxic by inhalation. Harmful if swallowed.

Skin corrosion/irritation

Causes burns.

SECTION 12: Ecological information**12.1. Toxicity**

Low toxicity to aquatic organisms.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Waste from residues/unused products**

The product is classified as hazardous waste and must be disposed of as such. Incinerate at a licensed installation.

Contaminated packaging

Thoroughly emptied and clean packaging may be recycled.

SECTION 14: Transport information**ADR Road transport**

14.1 UN number	UN1779
14.2 UN proper shipping name	Formic acid
Proper Shipping Description	UN1779 Formic acid , 8 (3), II, (D/E)
14.3 Transport hazard class(es)	8
Subsidiary hazard class	3
14.4 Packing Group	II
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	None

Tunnel restriction code	(D/E)
Limited quantity (LQ)	1 L
ADR Hazard Id (Kemmler Number)	83

RID Rail transport

14.1 UN number	UN1779
14.2 UN proper shipping name	Formic acid
Proper Shipping Description	UN1779 Formic acid , 8 (3), II
14.3 Transport hazard class(es)	8
Subsidiary hazard class	3
14.4 Packing Group	II
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	None

IMDG Sea transport

14.1 UN number	UN1779
14.2 UN proper shipping name	Formic acid
Proper Shipping Description	UN1779 Formic acid , 8 (3), II
14.3 Transport hazard class(es)	8
Subsidiary hazard class	3
14.4 Packing Group	II
14.5 Marine pollutant	Not applicable
14.6 Special precautions for user	None
EmS-No	F-E, S-C
Limited quantity (LQ)	1 L
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Y, S/P,3,2,G
Proper Shipping Description	UN1779 Formic acid , 8 (3), II
14.5 Environmental hazard	Not applicable
14.6 Special precautions for user	None
Limited quantity (LQ)	0.5 L
ERG Code	8L

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****International Regulations**

Not applicable.

European Union

Take note of Directive 94/33/EC on the protection of young people at work

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Information contained herein is provided in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.