

# OTTO CHEMIE PVT LTD

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ISO 9001: 2015

## MATERIAL SAFETY DATA SHEET

### SECTION 1 Product identifiers

Product name : Formic acid, GR, 98.0-100%

Product Code: F 1517

CAS-No. : 64-18-6

### SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Flammable liquids (Category 3), H226

Acute toxicity, Oral (Category 4), H302

Acute toxicity, Inhalation (Category 3), H331

Skin corrosion (Sub-category 1A), H314

Serious eye damage (Category 1), H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal word Danger

Hazard statement(s)

H226 Flammable liquid and vapor.

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H331 Toxic if inhaled.

Precautionary statement(s)

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.

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

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard information (EU)

EUH071 Corrosive to the respiratory tract.

Reduced Labeling (<= 125 ml)

Pictogram

Signal word Danger

Hazard statement(s)

H331 Toxic if inhaled.

H314 Causes severe skin burns and eye damage.

Precautionary statement(s)

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

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

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Supplemental Hazard information (EU)

EUH071 Corrosive to the respiratory tract.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at

levels of 0.1% or higher.

### SECTION 3: Composition/information on ingredients

3.1 Substances  
Formula : CH<sub>2</sub>O<sub>2</sub>  
Molecular weight : 46,03 g/mol  
CAS-No. : 64-18-6  
EC-No. : 200-579-1

| Component                           | Classification   | Concentration |
|-------------------------------------|--|---------------|
| Formic acid                         |  |               |
| CAS-No. 64-18-6<br>EC-No. 200-579-1 | Flam. Liq. 3; Acute Tox. 4;<br>Acute Tox. 3; Skin Corr.<br>1A; Eye Dam. 1; H226,<br>H302, H331, H314, H318<br>Concentration limits:<br>>= 90 %: Skin Corr. 1A,<br>H314; 10 - < 90 %: Skin<br>Corr. 1B, H314; 2 - < 10<br>%: Skin Irrit. 2, H315; 2 -<br>< 10 %: Eye Irrit. 2,<br>H319; > 78,5 %: Acute<br>Tox. 3, H331; 75 - 78,5<br>%: Acute Tox. 4, H332; ><br>75 %: , EUH071; | <= 100 %      |

For the full text of the H-Statements mentioned in this Section, see Section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first-aid measures

##### General advice

First aider needs to protect himself. Show this material safety data sheet to the doctor in attendance.

##### If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

##### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

##### In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist.

Remove contact lenses.

##### If swallowed

After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Pulmonary failure possible after aspiration of vomit. Call a physician immediately. Do not attempt to neutralise.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

### SECTION 5: Firefighting measures

#### 5.1 Extinguishing media

##### Suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

##### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

#### 5.2 Special hazards arising from the substance or mixture

Nature of decomposition products not known.

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

#### 5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

#### 5.4 Further information

Remove container from danger zone and cool with water. 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  
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.
- 6.2 Environmental precautions  
Do not let product enter drains. Risk of explosion.
- 6.3 Methods and materials for containment and cleaning up  
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.
- 6.4 Reference to other sections  
For disposal see section 13.

## **SECTION 7: Handling and storage**

- 7.1 Precautions for safe handling  
Advice on safe handling  
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.  
Advice on protection against fire and explosion  
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.  
Hygiene measures  
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.  
For precautions see section 2.2.
- 7.2 Conditions for safe storage, including any incompatibilities  
Storage conditions  
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.  
Vent periodically. Handle and open container with care. Hygroscopic. Refrigerate before opening.
- 7.3 Specific end use(s)  
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

## **SECTION 8: Exposure controls/personal protection**

- 8.1 Control parameters  
Ingredients with workplace control parameters
- 8.2 Exposure controls  
Personal protective equipment
- Eye/face protection  
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles
- Skin protection  
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.  
The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.
- Full contact  
Material: Nature latex/chloroprene  
Minimum layer thickness: 0,6 mm  
Break through time: 480 min
- Splash contact  
Material: Nature latex/chloroprene  
Minimum layer thickness: 0,6 mm  
Break through time: 480 min  
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.
- Body Protection  
Flame retardant antistatic protective clothing.
- Respiratory protection  
Recommended Filter type: Filter E-(P3)

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.  
Control of environmental exposure  
Do not let product enter drains. Risk of explosion.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|   |   |
|---|---|
| a) Appearance Form:                             | liquid  |
|   | Color: colorless  |
| b) Odor   | stinging  |
| c) Odor Threshold                               | 0,02 ppm  |
| d) pH   | 2,2 at 10 g/l at 20 °C  |
| e) Melting point/freezing point                 | Melting point/range: 8,2 - 8,4 °C - lit.  |
| f) Initial boiling point and boiling range      | 100 - 101 °C - lit.   |
| g) Flash point                                  | 49,5 °C - closed cup - Regulation (EC) No. 440/2008, Annex, A.9   |
| h) Evaporation rate                             | No data available   |
| i) Flammability (solid, gas)                    | No data available   |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 38 %(V)<br>Lower explosion limit: 18 %(V)  |
| k) Vapor pressure                               | 171 hPa at 50 °C - OECD Test Guideline 104  |
| l) Vapor density                                | 1,59 - (Air = 1.0)  |
| m) Relative density                             | 1,22 at 20 °C - OECD Test Guideline 109   |
| n) Water solubility                             | at 20 °C miscible in all proportions, (experimental)  |
| o) Partition coefficient: n-octanol/water       | log Pow: -2,1 at 23 °C - OECD Test Guideline 107 -<br>Bioaccumulation is not expected.  |
| p) Autoignition temperature                     | 528 °C  |
| q) Decomposition temperature                    | at 1.008 hPa - Tested according to Directive 92/69/EEC.<br>350 °C -   |
| r) Viscosity                                    | Viscosity, kinematic: 1,47 mm <sup>2</sup> /s at 20 °C - OECD Test Guideline 1141,02 mm <sup>2</sup> /s at 40 °C - OECD Test Guideline 114<br>Viscosity, dynamic: 1,8 mPa.s at 20 °C - OECD Test Guideline 1141,22 mPa.s at 40 °C - OECD Test Guideline 114 |
| s) Explosive properties                         | No data available   |
| t) Oxidizing properties                         | No data available   |

### 9.2 Other safety information

|                        |   |  |
|------------------------|---|--|
| Surface tension        | 7 | 1,5 mN/m at 1g/l at 20 °C<br>- OECD Test Guideline 115 |
| Dissociation constant  |   | 3,7 at 20 °C<br>- OECD Test Guideline 112              |
| Relative vapor density |   | 1,59 - (Air = 1.0)                                     |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Contains the following stabilizer(s):

water (5 %)

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Heating.

### 10.5 Incompatible materials

Strong oxidizing agents, Strong bases, Powdered metals

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Toxicity to Animals:

Oral LD50 Rat: 1500 mg/kg; Dermal LD50 Rabbit: 2000mg/kg

Inhalation LC50 Rat: > 50mg/L.

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified None. by NTP, None. by OSHA, None. by NIOSH.  
Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of inhalation (lung irritant).  
Special Remarks on Toxicity to Animals: Not available.  
Special Remarks on Chronic Effects on Humans: Not available.  
Special Remarks on other Toxic Effects on Humans: Not available.

## SECTION 12: Ecological information

### 12.1 Toxicity

Toxicity to fish static test LC50 - Danio rerio (zebra fish) - 130 mg/l - 96 h  
(OECD Test Guideline 203)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: ammonium formate

Toxicity to daphnia and other aquatic invertebrates

static test EC50 - Daphnia magna (Water flea) - 365 mg/l - 48 h  
(OECD Test Guideline 202)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: ammonium formate

Toxicity to algae static test ErC50 - Pseudokirchneriella subcapitata - 1.240 mg/l - 72 h

(OECD Test Guideline 201)

Remarks: (in analogy to similar products)

The value is given in analogy to the following substances: ammonium formate

Toxicity to bacteria static test NOEC - activated sludge - 72 mg/l - 13 d

Remarks: (ECHA)

### 12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 14 d

Result: 100 % - Readily biodegradable.

(OECD Test Guideline 301C)

Biochemical Oxygen Demand (BOD)

86 mg/g

Remarks: (External MSDS)

Ratio BOD/ThBOD 8,60 %

### 12.3 Bioaccumulative potential

Bioaccumulation is unlikely.

Does not significantly accumulate in organisms.

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

Additional ecological information

No data available

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 1779

IMDG: 1779

IATA: 1779

### 14.2 UN proper shipping name

ADR/RID: FORMIC ACID

IMDG: FORMIC ACID

IATA: Formic acid

### 14.3 Transport hazard class(es)

ADR/RID: 8 (3)

IMDG: 8 (3)

IATA: 8 (3)

### 14.4 Packaging group

ADR/RID: II

IMDG: II

IATA: II

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user

No data available

### **SECTION 15: Regulatory information**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

: ACUTE TOXIC

: FLAMMABLE LIQUIDS

Other regulations

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

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

15.2 Chemical Safety Assessment

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

### **Section 16: Other Information**

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

