

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifiers

Product name: **FORMIC ACID**

CAS-No.: **64-18-6**

Product Number: **A67933**

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Manufacture of substances

### 1.3 Details of the supplier of the safety data sheet

Company : Philip Harris Ltd., 2 Gregory Street, Hyde, Cheshire, SK14 4HR,

UNITED KINGDOM

Telephone: +44 (0)845 1200 506 Fax: +44 (0)161 367 2140

Email: enquiries@philipharris.co.uk

### 1.4 Emergency telephone number

Emergency Phone #: **+44 (0)845 1200 506**

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]:** Skin corrosion (Category 1A). Flammable liquids (Category 3)

**Classification according to EU Directives 67/548/EEC or 1999/45/EC:** Flammable. Causes severe burns.

### 2.2 Label elements

Pictogram



Signal word

Danger

**Hazard statement(s):** H226 Flammable liquid and vapour. H314 Causes severe skin burns and eye damage.

**Precautionary statement(s):** P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. 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.

**According to European Directive 67/548/EEC as amended.**

Hazard symbol(s)



**R-phrases(s):** R10 Flammable. R35 Causes severe burns.

**S-phrases(s):** S23 Do not breathe gas/fumes/vapour/spray. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**2.3 Other hazards** – no data available

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

##### Formic acid

Formula:	HCOOH
Molecular Weight:	46.03g/mol
CAS-No.:	64-18-6
EC-No.:	200-579-1
Index-No.:	607-001-00-0

### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance.

**If inhaled:** If breathed in, move person into fresh air. If not breathing, give artificial respiration.

**In case of skin contact:** Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital.

**In case of eye contact:** Rinse thoroughly with plenty of water for at least 15 minutes.

**If swallowed:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water.

**4.2 Most important symptoms and effects, both acute and delayed:** Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting

**4.3 Indication of immediate medical attention and special treatment needed:** no data available

### 5. FIRE-FIGHTING MEASURES

#### 5.1 Extinguishing media

**Suitable extinguishing media:** For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

**5.2 Special hazards arising from the substance or mixture:** Carbon oxides

**5.3 Precautions for fire-fighters** Wear self contained breathing apparatus for fire fighting if necessary.

**5.4 Further information:** Use water spray to cool unopened containers.

## 6. ACCIDENTAL RELEASE MEASURES

**6.1 Personal precautions, protective equipment and emergency procedures:** Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

**6.2 Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**6.3 Methods and materials for containment and cleaning up:** Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

**6.4 Reference to other sections:** For disposal see section 13.

## 7. HANDLING AND STORAGE

**7.1 Precautions for safe handling:** Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**7.2 Conditions for safe storage, including any incompatibilities:** Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Vent periodically. Handle and open container with care. Hygroscopic

**7.3 Specific end uses:** no data available

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

Components with workplace control parameters

Component	CAS No.	Value	Control Parameters	Update
Formic acid	64-18-6	TWA	5ppm 9.6mg/m <sup>3</sup>	UK EH40 WEL
Formic acid	64-18-6	TWA	5ppm 9mg/m <sup>3</sup>	91/322/EEC

### 8.2 Exposure controls

**Appropriate engineering controls:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### Personal protective equipment

**Eye/face protection:** Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**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 EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Body Protection:** Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |  |   |                           |
|--|---|---------------------------|
| a) Appearance:                                   | <b>Form:</b> Liquid                     | <b>Colour:</b> Colourless |
| b) Odour:  | no data available                       |                           |
| c) Odour Threshold:                              | no data available                       |                           |
| d) pH:   | pH 2.2 at 2.2 g/l at 20 °C              |                           |
| e) Melting/freezing point:                       | Melting point/range: 8.2 - 8.4 °C       |                           |
| f) Initial boiling point and boiling range:      | 100 - 101 °C                            |                           |
| g) Flash point:                                  | 48 °C - closed cup                      |                           |
| h) Evaporation rate:                             | no data available                       |                           |
| i) Flammability (solid, gas):                    | no data available                       |                           |
| j) Upper/lower flammability or explosive limits: | 18-57%(V)                               |                           |
| k) Vapour pressure:                              | 42.00 hPa at 20 °C; 169.99 hPa at 50 °C |                           |
| l) Vapour density:                               | 1.59 - (Air = 1.0)                      |                           |
| m) Relative density:                             | 1.22 g/mL at 25 °C                      |                           |
| n) Water solubility:                             | Completely miscible                     |                           |
| o) Partition coefficient: n-octanol/water:       | -0.54                                   |                           |
| p) Autoignition temperature:                     | no data available                       |                           |
| q) Decomposition temperature:                    | no data available                       |                           |
| r) Viscosity:                                    | no data available                       |                           |
| s) Explosive properties:                         | no data available                       |                           |
| t) Oxidizing properties:                         | no data available                       |                           |

**9.2 Other safety information:** Surface tension 38 mN/m at 15 °C

## 10. STABILITY AND REACTIVITY

**10.1 Reactivity:** no data available

**10.2 Chemical stability:** no data available

**10.3 Possibility of hazardous reactions:** no data available

**10.4 Conditions to avoid:** Heat, flames and sparks.

**10.5 Incompatible materials:** Strong oxidizing agents, Strong bases, Powdered metals

**10.6 Hazardous decomposition products:** Other decomposition products - no data available

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity:** LD50 Oral - rat - 1,100 mg/kg

LC50 Inhalation - rat - 4 h - 7.4 mg/l

LC50 Inhalation - rat - 0.25 h - 15,000 mg/m<sup>3</sup>

**Skin corrosion/irritation:** Skin - rabbit - Severe skin irritation - Draize Test

**Serious eye damage/eye irritation:** Eyes - rabbit - Severe eye irritation

**Respiratory or skin sensitization:** Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

**Germ cell mutagenicity:** no data available

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

**Reproductive toxicity:** no data available

**Specific target organ toxicity - single exposure:** no data available

**Specific target organ toxicity - repeated exposure:** no data available

**Aspiration hazard:** no data available

### Potential health effects

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.

**Ingestion** May be harmful if swallowed.

**Skin** May be harmful if absorbed through skin. May cause skin irritation.

**Eyes** May cause eye irritation.

**Signs and Symptoms of Exposure:** Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting

**Additional Information:** RTECS: LQ4900000

## 12. ECOLOGICAL INFORMATION

**12.1 Toxicity:** Toxicity to fish LC50 - *Leuciscus idus* (Golden orfe) - 46 - 100 mg/L - 96 h

Toxicity to daphnia and other aquatic invertebrates.

EC50 - *Daphnia magna* (Water flea) - 34.2 mg/L - 48 h

Toxicity to bacteria - *Pseudomonas putida* - 46.7 mg/L - 17 h

**12.2 Persistence and degradability:** Biodegradability Result: > 90 % - Readily biodegradable.

**12.3 Bioaccumulative potential:** no data available

**12.4 Mobility in soil:** no data available

**12.5 Results of PBT and vPvB assessment:** no data available

**12.6 Other adverse effects:** Harmful to aquatic life.

Additional ecological information

Biochemical Oxygen Demand (BOD) 86 mg/g

Chemical Oxygen Demand (COD) 348 mg/g

### 13. DISPOSAL CONSIDERATIONS

#### 13.1 Waste treatment methods

**Product:** Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging:** Dispose of as unused product.

### 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 users:** no data available

### 15. REGULATORY INFORMATION

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

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:** no data available

**15.2 Chemical Safety Assessment:** no data available

**16. OTHER INFORMATION:** no data available