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

1.1 Product identifier

- **Trade name:** acetic acid
- **Article number:** 0107
- **CAS Number:** 64-19-7
- **EC number:** 200-580-7
- **Index number:** 607-002-00-6
- **Registration number:** 01-2119475328-30-XXXX

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

Only for the use of professionals users

- **Life cycle stages IS** Use at industrial Sites
- **Sector of Use**
  - SU9 Manufacture of fine chemicals
  - SU10 Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
  - SU24 Scientific research and development
- **Product category**
  - PC20 Processing aids such as pH-regulators, flocculants, precipitants, neutralization agents
  - PC21 Laboratory chemicals
  - PC29 Pharmaceuticals
  - PC40 Extraction agents

- **Process category**
  - PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.
  - PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
  - PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
  - PROC4 Chemical production where opportunity for exposure arises
  - PROC5 Mixing or blending in batch processes
  - PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
  - PROC15 Use as laboratory reagent

- **Environmental release category**
  - ERC1 Manufacture of the substance
  - ERC2 Formulation into mixture
  - ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
  - ERC6a Use of intermediate

- **Application of the substance / the mixture**
  Chemical for research, development, manufacturing, laboratory chemical for analysis.

1.3 Details of the supplier of the safety data sheet

- **Manufacturer/Supplier:**
  - **Biosolve Chimie**
    20 Rue Roger Husson, 57260 Dieuze, France
    Tel: +33 3 878 675 80/81/82/83/84/85
    Email: info@biosolvechimie.com
  - **Biosolve B.V.**
    Leenderweg 78, 5555 CE Valkenswaard, the Netherlands.
    Tel: +31-(0)40-2071300
    Fax:+31-(0)40-2048537
    Email: info@biosolve-chemicals.com

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Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 20.04.2018
Revision: 29.01.2018

Trade name: acetic acid

Further information obtainable from: Product safety department.
1.4 Emergency telephone number:
For emergency telephone numbers of the poisons centers in Europe please use this link: http://www.eapcct.org/

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008

- GHS02 flame
- Flam. Liq. 3 H226 Flammable liquid and vapour.
- GHS05 corrosion
- Skin Corr. 1A H314 Causes severe skin burns and eye damage.
- GHS07

Acute Tox. 4 H312 Harmful in contact with skin.

2.2 Label elements
Labelling according to Regulation (EC) No 1272/2008
The substance is classified and labelled according to the CLP regulation.

- Hazard pictograms
  - GHS02
  - GHS05
  - GHS07

- Signal word Danger
- Hazard statements
  - H226 Flammable liquid and vapour.
  - H312 Harmful in contact with skin.
  - H314 Causes severe skin burns and eye damage.
- Precautionary statements
  - P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
  - 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/doctor.
  - P362+P364 Take off contaminated clothing and wash it before reuse.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 3)
Trade name: acetic acid

2.3 Other hazards

- Results of PBT and vPvB assessment
  - PBT: Not applicable.
  - vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.1 Chemical characterisation: Substances
  - CAS No. Description
    - 64-19-7 acetic acid
  - Identification number(s)
    - EC number: 200-580-7
    - Index number: 607-002-00-6

SECTION 4: First aid measures

- 4.1 Description of first aid measures
  - General information:
    - Immediately remove any clothing soiled by the product.
    - Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
  - After inhalation: In case of unconsciousness place patient stably in side position for transportation.
  - After skin contact: Immediately wash with water and soap and rinse thoroughly.
  - After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
  - After swallowing: Drink plenty of water and provide fresh air. Call for a doctor immediately.
- 4.2 Most important symptoms and effects, both acute and delayed
  - No further relevant information available.
- 4.3 Indication of any immediate medical attention and special treatment needed
  - No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
  - Suitable extinguishing agents:
    - CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- 5.2 Special hazards arising from the substance or mixture
  - During heating or in case of fire poisonous gases are produced.
- 5.3 Advice for firefighters
  - Protective equipment: Mouth respiratory protective device.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures
  - Mount respiratory protective device.
  - Wear protective equipment. Keep unprotected persons away.
- 6.2 Environmental precautions:
  - Dilute with plenty of water.
  - Do not allow to enter sewers/surface or ground water.
Trade name: acetic acid

6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralising agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.

Information about fire - and explosion protection:
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.

7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
Information about storage in one common storage facility: Not required.
Further information about storage conditions: Keep container tightly sealed.

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Short-term value</th>
<th>Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>64-19-7 acetic acid</td>
<td>50 mg/m³, 20 ppm</td>
<td>25 mg/m³, 10 ppm</td>
</tr>
</tbody>
</table>

Additional information: The lists valid during the making were used as basis.

8.2 Exposure controls

Personal protective equipment:
General protective and hygienic measures:
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

Respiratory protection:
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Protection of hands:

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tightly sealed goggles

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information

Appearance:

<table>
<thead>
<tr>
<th>Form</th>
<th>Fluid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>Pungent</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not determined.</td>
</tr>
</tbody>
</table>

pH-value:

2.5

Change in condition

| Melting point/freezing point | 16.6 °C |
| Initial boiling point and boiling range | 118 °C |

Flash point:

40 °C

Flammability (solid, gas):

Not applicable.

Ignition temperature:

485 °C

Decomposition temperature:

Not determined.

Auto-ignition temperature:

Not determined.

Explosive properties:

Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

Explosion limits:

<table>
<thead>
<tr>
<th>Lower</th>
<th>4 Vol %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper</td>
<td>17 Vol %</td>
</tr>
</tbody>
</table>
SECTION 10: Stability and reactivity

10.1 Reactivity: No further relevant information available.

10.2 Chemical stability

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

10.3 Possibility of hazardous reactions: No dangerous reactions known.

10.4 Conditions to avoid: No further relevant information available.

10.5 Incompatible materials: No further relevant information available.

10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity: Harmful in contact with skin.

LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th>Route</th>
<th>LD50/C50</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>LD50</td>
<td>3,310 mg/kg (rat)</td>
</tr>
<tr>
<td>Dermal</td>
<td>LD50</td>
<td>1,060 mg/kg (rabbit)</td>
</tr>
</tbody>
</table>

Primary irritant effect:

Skin corrosion/irritation: Causes severe skin burns and eye damage.

Serious eye damage/irritation: Causes severe skin burns and eye damage.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Based on available data, the classification criteria are not met.

STOT-single exposure: Based on available data, the classification criteria are not met.

STOT-repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.
SECTION 12: Ecological information

12.1 Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Bioaccumulative potential: No further relevant information available.
- Mobility in soil: No further relevant information available.
- Additional ecological information:
  - General notes:
    Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
    Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
    Must not reach sewage water or drainage ditch undiluted or unneutralised.
  - Results of PBT and vPvB assessment
    - PBT: Not applicable.
    - vPvB: Not applicable.
  - Other adverse effects: No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
- Recommendation:
  Must not be disposed together with household garbage. Do not allow product to reach sewage system.

European waste catalogue

<table>
<thead>
<tr>
<th>Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HP 3</td>
<td>Flammable</td>
</tr>
<tr>
<td>HP 6</td>
<td>Acute Toxicity</td>
</tr>
<tr>
<td>HP 8</td>
<td>Corrosive</td>
</tr>
</tbody>
</table>

Uncleaned packaging:
- Recommendation: Disposal must be made according to official regulations.
- Recommended cleansing agents: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

14.1 UN-Number
- ADR, IMDG, IATA: UN2789

14.2 UN proper shipping name
- ADR, IMDG, IATA: UN2789 ACETIC ACID, GLACIAL

14.3 Transport hazard class(es)
- ADR
  - Class: 8 (CF1) Corrosive substances.
Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 20.04.2018 Revision: 29.01.2018

Trade name: acetic acid

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- **Label** 8+3
- **IMDG**
  - **Class** 8 Corrosive substances.
  - **Label** 8/3
- **IATA**
  - **Class** 8 Corrosive substances.
  - **Label** 8 (3)

**14.4 Packing group**
- **ADR, IMDG, IATA** II

**14.5 Environmental hazards:**
- **Marine pollutant:** No

**14.6 Special precautions for user**
- **Warning:** Corrosive substances.
- **Danger code (Kemler):** 83
- **EMS Number:** 8-04
- **Segregation groups:** Acids
- **Stowage Category:** A

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**
- **Transport category** Not applicable.

**Transport/Additional information:**

**ADR**
- **Limited quantities (LQ)** 1L Code: E2
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 500 ml
- **Transport category** 2
- **Tunnel restriction code** D/E

**IMDG**
- **Limited quantities (LQ)** 1L Code: E2
  - Maximum net quantity per inner packaging: 30 ml
  - Maximum net quantity per outer packaging: 500 ml

**UN "Model Regulation":**
- UN 2789 ACETIC ACID, GLACIAL, 8 (3), II

(Contd. on page 9)
SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Labelling according to Regulation (EC) No 1272/2008
  The substance is classified and labelled according to the CLP regulation.
- Hazard pictograms
  
  ![GHS02](image)
  ![GHS05](image)
  ![GHS07](image)

- Signal word Danger
- Hazard statements
  H226 Flammable liquid and vapour.
  H312 Harmful in contact with skin.
  H314 Causes severe skin burns and eye damage.
- Precautionary statements
  P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
  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/doctor.
  P362+P364 Take off contaminated clothing and wash it before reuse.
  P405 Store locked up.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- Directive 2012/18/EU
- Named dangerous substances - ANNEX I Substance is not listed.
- Seveso category P3c FLAMMABLE LIQUIDS
- Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000 t
- Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 t
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3, 40

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing SDS: Product safety department
- Contact: Product safety department
- Abbreviations and acronyms:
  RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
  ICAO: International Civil Aviation Organisation
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  IATA: International Air Transport Association
  GHS: Globally Harmonised System of Classification and Labelling of Chemicals
  EINECS: European Inventory of Existing Commercial Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  LC50: Lethal concentration, 50 percent

(Contd. on page 10)
### Trade name: acetic acid

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD50</td>
<td>Lethal dose, 50 percent</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
<tr>
<td>Flam. Liq. 3</td>
<td>Flammable liquids – Category 3</td>
</tr>
<tr>
<td>Acute Tox. 4</td>
<td>Acute toxicity – Category 4</td>
</tr>
<tr>
<td>Skin Corr. 1A</td>
<td>Skin corrosion/irritation – Category 1A</td>
</tr>
</tbody>
</table>

* Data compared to the previous version altered.