

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%**Current version :** 5.3.2, issued: 25.07.2025**Replaced version:** 5.3.1, issued: 12.01.2022**Region:** GB**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier****Trade name****Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%****MSK Code: 60010, 60019, 90022, 90023, 90025, 90029, 90030, 90043, 90045, 90049**

|                        |                       |
|------------------------|-----------------------|
| Substance name         | Acetic acid           |
| REACH registration no. | 01-2119475328-30-0018 |

**Identification numbers**

|           |              |
|-----------|--------------|
| CAS no.   | 64-19-7      |
| EC no.    | 200-580-7    |
| Index no. | 607-002-00-6 |

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

Uses by workers in industrial settings

Manufacture

Distribution

Formulation

Intermediate

Use in cleaning agents

Use in oil field drilling and production operations

Use in laboratories

Water treatment chemicals

Uses by professional workers

Use in cleaning agents

Agrochemical uses

Use in laboratories

Water treatment chemicals

Uses by consumers

Use in cleaning agents

Agrochemical uses

Most common technical function of substance (what it does):

Chemical intermediates

Process chemical

Cleaning agents

Agrochemicals

**Uses advised against**

No data available.

**Reference to relevant exposure scenarios**

For an overview of the exact titles of the relevant exposure scenarios please refer to section 16 of this SDS.

**1.3 Details of the supplier of the safety data sheet****Address**

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23300 Kikinda - Serbia

Telephone no. +381 230 423 050 - 700

Fax no. +381/230/424 - 009

**Information provided by / telephone**

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**Advice on Safety Data Sheet**

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**Only representative according to art. 8 Regulation (EC) 1907/2006****Address**

UMCO Umwelt Consult GmbH

Georg-Wilhelm-Strasse 183

21107 Hamburg

GERMANY

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**1.4 Emergency telephone number**

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For medical advice (in German and English):  
 +49 (0)551 192 40 (Giftinformationszentrum Nord)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification in accordance with Regulation (EC) No 1272/2008 (CLP)

Eye Dam. 1; H318

Flam. Liq. 3; H226

Skin Corr. 1A; H314

#### Classification information

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:  
 Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP  
 Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3 and 4 of Annex I to CLP.

### 2.2 Label elements

#### Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)

##### Product identifier

64-19-7 (Acetic acid)

##### Hazard pictograms



GHS02



GHS05

##### Signal word

Danger

##### Hazard statement(s)

H226

Flammable liquid and vapour.

H314

Causes severe skin burns and eye damage.

##### Precautionary statement(s)

P210

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

P241

Use explosion-proof [electrical/ventilating/lighting/...] equipment.

P260

Do not breathe dust/fume/gas/mist/vapours/spray.

P280

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

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/doctor.

P363

Wash contaminated clothing before reuse.

P403+P235

Store in a well-ventilated place. Keep cool.

P405

Store locked up.

P501

Dispose of contents/container to hazardous or special waste collection point.

### 2.3 Other hazards

No data available.

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

#### Chemical characterization

Substance name Acetic acid

#### Identification numbers

CAS no. 64-19-7

EC no. 200-580-7

Index no. 607-002-00-6

#### Other information

| Note | Specific concentration limits | M-factor (acute) | M-factor (chronic) |
|------|-------------------------------|------------------|--------------------|
|------|-------------------------------|------------------|--------------------|

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|   |                                                                                                                                 |   |   |
|---|---------------------------------------------------------------------------------------------------------------------------------|---|---|
| B | Skin Irrit. 2; H315: C >= 10%<br>Eye Irrit. 2; H319: C >= 10%<br>Skin Corr. 1B; H314: C >= 25%<br>Skin Corr. 1A; H314: C >= 90% | - | - |
|---|---------------------------------------------------------------------------------------------------------------------------------|---|---|

Full text for the notes: pls. see section 16 "Notes relating to the identification, classification and labelling of substances ((EC) No 1272/2008, Annex VI)".

### 3.2 Mixtures

Not applicable. The product is not a mixture.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

#### General information

In case of accident or if you feel unwell, seek medical advice immediately. Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing. If the patient is likely to become unconscious, place and transport in stable sideways position.

#### After inhalation

Remove affected person from the immediate area. Ensure supply of fresh air. Irregular breathing/no breathing: artificial respiration. Call a doctor immediately.

#### After skin contact

Wash off immediately with soap and water. Seek medical attention.

#### After eye contact

Separate eyelids, wash the eyes thoroughly with water (15 min.). Seek medical assistance.

#### After ingestion

Do not induce vomiting. Rinse out mouth and give plenty of water to drink. Call a doctor immediately. Never give anything by mouth to an unconscious person.

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

No data available.

### 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

Foam; Extinguishing powder; Water spray jet; Carbon dioxide

#### Unsuitable extinguishing media

High power water jet

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

In the event of fire, the following can be released: Carbon dioxide (CO<sub>2</sub>); Carbon monoxide (CO); Combustion products of this material have to be classed invariably as respiratory poison.

### 5.3 Advice for firefighters

Use self-contained breathing apparatus. Wear protective clothing. Cool endangered containers with water spray jet.

## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

Refer to protective measures listed in sections 7 and 8. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

#### For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

### 6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

### 6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g., sand, kieselguhr, universal binder). When collected, handle material as described under the section heading "Disposal considerations".

### 6.4 Reference to other sections

No data available.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

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**Advice on safe handling**

Risks inherent to handling the product must be minimised by applying the appropriate protective and preventive measures. Working processes should - so far as possible, according to the state of the art - be designed to rule out bodily contact or the release of hazardous substances.

**General protective and hygiene measures**

Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Avoid contact with eyes and skin. Remove soiled or soaked clothing immediately. Wash hands before breaks and after work. Provide eye wash fountain in work area. Have emergency shower available. Do not inhale vapours.

**Advice on protection against fire and explosion**

Keep away from sources of heat and ignition.

**7.2 Conditions for safe storage, including any incompatibilities**
**Technical measures and storage conditions**

Keep container tightly closed in a cool, well-ventilated place.

**Requirements for storage rooms and vessels**

Containers which are opened must be carefully closed and kept upright to prevent leakage. Always keep in containers of same material as the original.

**Incompatible products**

Do not store with combustible materials. Do not store together with: oxidizing agents; Bases; Metals

**7.3 Specific end use(s)**

No data available.

**SECTION 8: Exposure controls/personal protection**
**8.1 Control parameters**
**Occupational exposure limit values**

| No | Substance name                                                  | CAS no.              | EC no.    |
|----|-----------------------------------------------------------------|----------------------|-----------|
| 1  | Acetic acid                                                     | 64-19-7              | 200-580-7 |
|    | 2017/164/EU                                                     |                      |           |
|    | Acetic acid                                                     |                      |           |
|    | WEL short-term (15 min reference period)                        | 50 mg/m <sup>3</sup> | 20 ppm    |
|    | WEL long-term (8-hr TWA reference period)                       | 25 mg/m <sup>3</sup> | 10 ppm    |
|    | <b>List of approved workplace exposure limits (WELs) / EH40</b> |                      |           |
|    | Acetic acid                                                     |                      |           |
|    | WEL short-term (15 min reference period)                        | 50 mg/m <sup>3</sup> | 20 ppm    |
|    | WEL long-term (8-hr TWA reference period)                       | 25 mg/m <sup>3</sup> | 10 ppm    |

**DNEL, DMEL and PNEC values**
**DNEL values (worker)**

| No | Substance name    | CAS / EC no                                    |
|----|-------------------|------------------------------------------------|
|    | Route of exposure | Value                                          |
| 1  | Acetic acid       | 64-19-7<br>200-580-7                           |
|    | inhalative        | Long term (chronic) local 25 mg/m <sup>3</sup> |
|    | inhalative        | Short term (acute) local 25 mg/m <sup>3</sup>  |

**DNEL value (consumer)**

| No | Substance name    | CAS / EC no                                    |
|----|-------------------|------------------------------------------------|
|    | Route of exposure | Value                                          |
| 1  | Acetic acid       | 64-19-7<br>200-580-7                           |
|    | inhalative        | Long term (chronic) local 25 mg/m <sup>3</sup> |
|    | inhalative        | Short term (acute) local 25 mg/m <sup>3</sup>  |

**PNEC values**

| No | Substance name         | CAS / EC no                       |
|----|------------------------|-----------------------------------|
|    | ecological compartment | Value                             |
| 1  | Acetic acid            | 64-19-7<br>200-580-7              |
|    | water                  | fresh water 3.058 mg/L            |
|    | water                  | marine water 0.3058 mg/L          |
|    | water                  | fresh water sediment 11.36 mg/kg  |
|    | water                  | marine water sediment 1.136 mg/kg |
|    | soil                   | - 0.47 mg/kg                      |
|    | sewage treatment plant | - 85 mg/L                         |

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## 8.2 Exposure controls

### Appropriate engineering controls

No data available.

### Personal protective equipment

#### Respiratory protection

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of aerosol and mist formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified.

Respiratory filter (gas) :

E

#### Eye / face protection

Safety glasses with side protection shield (EN 166)

#### Hand protection

In case of intensive contact, wear protective gloves (EN 374). Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Before use, the protective gloves should be tested in any case for its specific work-station suitability (i.e. mechanical resistance, product compatibility and antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves.

Protective gloves shall be replaced immediately when physically damaged or worn. Design operations thus to avoid permanent use of protective gloves.

Appropriate Material

In case of longer-term contact:

Appropriate Material

viton

Appropriate Material

In case of short-term contact / splash protection:

Appropriate Material

nitrile

#### Other

Normal chemical work clothing.

### Environmental exposure controls

No data available.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

|                                      |          |       |  |
|--------------------------------------|----------|-------|--|
| <b>State of aggregation</b>          |          |       |  |
| liquid                               |          |       |  |
| <b>Form</b>                          |          |       |  |
| liquid                               |          |       |  |
| <b>Colour</b>                        |          |       |  |
| colourless                           |          |       |  |
| <b>Odour</b>                         |          |       |  |
| pungent                              |          |       |  |
| <b>pH value</b>                      |          |       |  |
| Value                                | 4        |       |  |
| Reference temperature                | 20       | °C    |  |
| Source                               | supplier |       |  |
| <b>Boiling point / boiling range</b> |          |       |  |
| Value                                | 117.9    | °C    |  |
| <b>Melting point/freezing point</b>  |          |       |  |
| Value                                | 16.64    | °C    |  |
| Source                               | supplier |       |  |
| <b>Decomposition temperature</b>     |          |       |  |
| No data available                    |          |       |  |
| <b>Flash point</b>                   |          |       |  |
| Value                                | 39       | °C    |  |
| <b>Ignition temperature</b>          |          |       |  |
| No data available                    |          |       |  |
| <b>Auto-ignition temperature</b>     |          |       |  |
| Value                                | 463      | °C    |  |
| <b>Flammability</b>                  |          |       |  |
| No data available                    |          |       |  |
| <b>Lower explosion limit</b>         |          |       |  |
| Value                                | 4        | % vol |  |
| <b>Upper explosion limit</b>         |          |       |  |
| Value                                | 19.9     | % vol |  |

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|                                                          |               |                   |
|----------------------------------------------------------|---------------|-------------------|
| <b>Vapour pressure</b>                                   |               |                   |
| Value                                                    | 20.79         | hPa               |
| Reference temperature                                    | 25            | °C                |
| <b>Relative vapour density</b>                           |               |                   |
| No data available                                        |               |                   |
| <b>Evaporation rate</b>                                  |               |                   |
| Value                                                    | 1.0           |                   |
| Reference substance                                      | Butyl Acetate |                   |
| Source                                                   | supplier      |                   |
| <b>Relative density</b>                                  |               |                   |
| Value                                                    | 1.050         |                   |
| Reference temperature                                    | 20            | °C                |
| Source                                                   | supplier      |                   |
| <b>Density</b>                                           |               |                   |
| Value                                                    | 1.0446        | g/cm <sup>3</sup> |
| Reference temperature                                    | 25            | °C                |
| <b>Solubility in water</b>                               |               |                   |
| Value                                                    | 602.9         | g/l               |
| Reference temperature                                    | 25            | °C                |
| <b>Solubility</b>                                        |               |                   |
| Value                                                    | 602.9         | g/l               |
| Reference temperature                                    | 25            | °C                |
| Source                                                   | supplier      |                   |
| <b>Partition coefficient n-octanol/water (log value)</b> |               |                   |
| No data available                                        |               |                   |
| <b>Kinematic viscosity</b>                               |               |                   |
| Value                                                    | 1.056         | mPa*s             |
| Reference temperature                                    | 25            | °C                |
| <b>Particle characteristics</b>                          |               |                   |
| No data available                                        |               |                   |

## 9.2 Other information

|                          |
|--------------------------|
| <b>Other information</b> |
| No data available.       |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available.

### 10.2 Chemical stability

Stable under recommended storage and handling conditions (See section 7).

### 10.3 Possibility of hazardous reactions

Dangerous reactions are not to be expected when handling product according to its intended use.

### 10.4 Conditions to avoid

Temperatures &gt; 35 °C. Formation of explosive gas/air mixtures. Protect from heat and direct sunlight. Keep away sources of ignition.

### 10.5 Incompatible materials

Oxidizing agents; Bases; Metals

### 10.6 Hazardous decomposition products

No hazardous decomposition products known.

## SECTION 11: Toxicological information

### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

|                             |                    |       |
|-----------------------------|--------------------|-------|
| Acute oral toxicity         |                    |       |
| LD50                        | 3310               | mg/kg |
| Species                     | rat                |       |
| Source                      | CSR                |       |
| Acute dermal toxicity       |                    |       |
| Comments                    | No data available. |       |
| Acute inhalational toxicity |                    |       |

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|                                                                                            |                                                                      |       |     |
|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------|-------|-----|
| LC50                                                                                       | >                                                                    | 16000 | ppm |
| Duration of exposure                                                                       |                                                                      | 4     | h   |
| Species                                                                                    | rat                                                                  |       |     |
| Source                                                                                     | CSR                                                                  |       |     |
| Skin corrosion/irritation                                                                  |                                                                      |       |     |
| Species                                                                                    | Human                                                                |       |     |
| Source                                                                                     | CSR                                                                  |       |     |
| Evaluation                                                                                 | corrosive                                                            |       |     |
| Serious eye damage/irritation                                                              |                                                                      |       |     |
| Species                                                                                    | Human                                                                |       |     |
| Source                                                                                     | CSR                                                                  |       |     |
| Evaluation                                                                                 | corrosive                                                            |       |     |
| Respiratory or skin sensitisation                                                          |                                                                      |       |     |
| Route of exposure                                                                          | Skin                                                                 |       |     |
| Source                                                                                     | CSR                                                                  |       |     |
| Evaluation                                                                                 | non-sensitizing                                                      |       |     |
| Germ cell mutagenicity                                                                     |                                                                      |       |     |
| Source                                                                                     | CSR                                                                  |       |     |
| Evaluation                                                                                 | negative                                                             |       |     |
| Reproduction toxicity                                                                      |                                                                      |       |     |
| Source                                                                                     | CSR                                                                  |       |     |
| Comments                                                                                   | No experimental information on reproduction toxic effects available. |       |     |
| Carcinogenicity                                                                            |                                                                      |       |     |
| Source                                                                                     | CSR                                                                  |       |     |
| Comments                                                                                   | No experimental information on carcinogenic effects available.       |       |     |
| STOT - single exposure                                                                     |                                                                      |       |     |
| No data available                                                                          |                                                                      |       |     |
| STOT - repeated exposure                                                                   |                                                                      |       |     |
| No data available                                                                          |                                                                      |       |     |
| Aspiration hazard                                                                          |                                                                      |       |     |
| No data available                                                                          |                                                                      |       |     |
| Endocrine disrupting properties                                                            |                                                                      |       |     |
| No data available                                                                          |                                                                      |       |     |
| Delayed and immediate effects as well as chronic effects from short and long-term exposure |                                                                      |       |     |
| Corrosive action on the skin and mucous membrane.                                          |                                                                      |       |     |

## 11.2 Information on other hazards

### Other information

No data available.

## SECTION 12: Ecological information

### 12.1 Toxicity

|                                      |                      |        |      |
|--------------------------------------|----------------------|--------|------|
| <b>Toxicity to fish (acute)</b>      |                      |        |      |
| LC50                                 | >                    | 300.82 | mg/l |
| Duration of exposure                 |                      | 96     | h    |
| Species                              | Oncorhynchus mykiss  |        |      |
| Source                               | CSR                  |        |      |
| <b>Toxicity to fish (chronic)</b>    |                      |        |      |
| No data available                    |                      |        |      |
| <b>Toxicity to Daphnia (acute)</b>   |                      |        |      |
| EC50                                 | >                    | 300.82 | mg/l |
| Duration of exposure                 |                      | 48     | h    |
| Species                              | Daphnia magna        |        |      |
| Source                               | CSR                  |        |      |
| <b>Toxicity to Daphnia (chronic)</b> |                      |        |      |
| No data available                    |                      |        |      |
| <b>Toxicity to algae (acute)</b>     |                      |        |      |
| EC50                                 | >                    | 300.82 | mg/l |
| Duration of exposure                 |                      | 72     | h    |
| Species                              | Skeletonema costatum |        |      |

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|                                    |     |
|------------------------------------|-----|
| Source                             | CSR |
| <b>Toxicity to algae (chronic)</b> |     |
| No data available                  |     |
| <b>Bacteria toxicity</b>           |     |
| No data available                  |     |

**12.2 Persistence and degradability**

|                                                                                                                               |                       |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| <b>Biodegradability</b>                                                                                                       |                       |
| Source                                                                                                                        | CSR                   |
| Evaluation                                                                                                                    | readily biodegradable |
| <b>Behaviour in sewers [waste treatment plants]</b>                                                                           |                       |
| The product is an acid. Neutralization is normally necessary before a waste water is discharged into sewage treatment plants. |                       |

**12.3 Bioaccumulative potential**

|                                      |                                  |
|--------------------------------------|----------------------------------|
| <b>Bioconcentration factor (BCF)</b> |                                  |
| Comments                             | Not potentially bioaccumulative. |

**12.4 Mobility in soil**

No data available.

**12.5 Results of PBT and vPvB assessment**

No data available.

**12.6 Endocrine disrupting properties**

No data available.

**12.7 Other adverse effects**

No data available.

**12.8 Other information**

|                                                                                                  |  |
|--------------------------------------------------------------------------------------------------|--|
| <b>Other information</b>                                                                         |  |
| Do not discharge into surface waters/groundwater.                                                |  |
| Product is not allowed to discharge into aquatic environment, drains or sewage treatment plants. |  |

**SECTION 13: Disposal considerations**
**13.1 Waste treatment methods**
**Product**

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

**Packaging**

Residues must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Incompletely emptied packaging must be disposed of in the form of disposal specified by the regional disposer.

**SECTION 14: Transport information**
**14.1 UN number or ID number**

ICAO-TI / IATA UN2789

**14.2 UN proper shipping name**

ADR/RID/ADN ACETIC ACID SOLUTION

IMDG ACETIC ACID SOLUTION

ICAO-TI / IATA Acetic acid solution

**14.3 Transport hazard class(es)**

ADR/RID/ADN - Class 8

Label 8+3

Classification code CF1

Tunnel restriction code D/E

Hazard identification no. 83

IMDG - Class 8

Subsidiary Risk 3

Label 8+3

ICAO-TI / IATA - Class 8

Subrisk 3

Label 8+3

**14.4 Packing group**

ADR/RID/ADN II

IMDG II



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ICAO-TI / IATA

II

**14.5 Environmental hazards**

EmS

F-E, S-C

**14.6 Special precautions for user**

No data available.

**14.7 Maritime transport in bulk according to IMO instruments**

Not relevant

**SECTION 15: Regulatory information**
**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
**EU regulations**
**Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)**

In accordance with the REACH regulation (EC) 1907/2006, the product does not contain any substances that are considered as subject to listing in annex XIV, inventory of substances requiring authorisation.

**REACH candidate list of substances of very high concern (SVHC) for authorisation**

In accordance with article 57 and article 59 of the Reach regulation (EC) 1907/2006, this substance is not considered as subject to listing in annex XIV, inventory of substances requiring authorisation ("Authorization list").

**Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES**

The product is considered being subject to REACH regulation (EC) 1907/2006 annex XVII. No 3, 40

The substance is considered being subject to REACH regulation (EC) 1907/2006 annex XVII.

| No | Substance name | CAS no. | EC no.    | No |
|----|----------------|---------|-----------|----|
| 1  | Acetic acid    | 64-19-7 | 200-580-7 | 75 |

**Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances**

This product is subject to Part I of Annex I, risk category: P5c

**15.2 Chemical safety assessment**

A chemical safety assessment has been carried out for this substance.

**SECTION 16: Other information**
**Sources of key data used to compile the data sheet:**

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

Directives 2000/39/EC, 2006/15/EC, 2009/161/EU, (EU) 2017/164.

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding section.

**Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)**

H318 Causes serious eye damage.

**Notes relating to the identification, classification and labelling of substances and mixtures ((EC) No 1272/2008, Annex VI)**

B Some substances (acids, bases, etc.) are placed on the market in aqueous solutions at various concentrations and, therefore, these solutions require different classification and labelling since the hazards vary at different concentrations. In Part 3 entries with Note B have a general designation of the following type: 'nitric acid ... %'. In this case the supplier must state the percentage concentration of the solution on the label. Unless otherwise stated, it is assumed that the percentage concentration is calculated on a weight/weight basis.

**List of existing exposition scenarios**

|       |                                                                        |
|-------|------------------------------------------------------------------------|
| ES001 | Use as an intermediate, process chemical - industrial use              |
| ES002 | Formulation and (re)packing of substance and mixtures - industrial use |
| ES003 | Use in Cleaning Agents - use in industrial settings                    |
| ES004 | Agrochemicals - professional use                                       |
| ES005 | Use as a laboratory reagent - use in professional settings             |
| ES006 | Water treatment - industrial use                                       |

**Creation of the safety data sheet**

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This information is based on our present knowledge and experience.

The safety data sheet describes products with a view to safety requirements.

It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

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**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 5.3.2, issued: 25.07.2025

**Replaced version:** 5.3.1, issued: 12.01.2022

**Region:** GB

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Prod-ID 44268

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

**SECTION 1: Title and scope of exposure scenario (ES)**
**1.1 Title exposure scenario (ES)**

ES1 Use as an intermediate, process chemical - industrial use

**1.2 Scope of exposure scenario (ES)**

ES Type Worker Exposure Scenario for substance/mixture

Life cycle stage Industrial end use

**Product identifier**

Trade name Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%  
 MSK Code: 60010, 60019, 90022, 90023, 90025, 90029, 90030, 90043, 90045, 90049

Substance name Acetic acid  
 REACH registration no. 01-2119475328-30-0018  
 CAS no. 64-19-7  
 EC no. 200-580-7

**Use descriptors**

| Sector of use (SU)                   |        |                                                                                                                          |
|--------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------|
| Category                             | Code   | Use description                                                                                                          |
| Main user group                      | SU3    | Industrial uses                                                                                                          |
| Environmental release category (ERC) |        |                                                                                                                          |
| Category                             | Code   | Use description                                                                                                          |
| Environmental release category (ERC) | ERC6a  | Industrial use resulting in manufacture of another substance (use of intermediates)                                      |
| Process category (PROC)              |        |                                                                                                                          |
| Category                             | Code   | Use description                                                                                                          |
| Process category (PROC)              | PROC1  | Use in closed process, no likelihood of exposure                                                                         |
|                                      | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                    |
|                                      | PROC3  | Use in closed batch process (synthesis or formulation)                                                                   |
|                                      | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                         |
|                                      | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
|                                      | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities     |
|                                      | PROC15 | Use as laboratory reagent                                                                                                |

**Other information**

The information in this ES originate from the CSR.

**SECTION 2: Operational conditions (OC) and risk management measures (RMM) controlling exposure towards environment and men**
**2.1 Product characteristics**

| State of aggregation                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|
| liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |     |
| Reference temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 25    | °C  |
| Dustiness                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |     |
| Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |     |
| Vapour pressure                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |     |
| Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 20.79 | hPa |
| Reference temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 25    | °C  |
| Other information                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |     |
| The efficiency of a risk management measure is a theoretical value. The efficiency describes to which extend (in percent) the calculated exposure can be diminished by applying a certain measure. If the described operational conditions and risk management measures are fulfilled by a downstream user, the efficiency as highlighted in the ES can be applied. A downstream user might check whether the efficiency of the LEV or general ventilation corresponds to his site. |       |     |

Trade name: Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

Current version : 2.2.0, issued: 11.06.2019

Replaced version: 2.1.0, issued: 06.02.2019

Region: GB

## 2.2 Contributing scenario controlling environmental exposure

| Affected environmental release category (ERC) |       |                                                                                     |
|-----------------------------------------------|-------|-------------------------------------------------------------------------------------|
| Category                                      | Code  | Use description                                                                     |
| Environmental release category (ERC)          | ERC6a | Industrial use resulting in manufacture of another substance (use of intermediates) |

### Risk management measures (RMM) controlling environmental exposure

| Technical measures and efficiency of the risk management measures (in exposure calculation model) |
|---------------------------------------------------------------------------------------------------|
| No special measures are required.                                                                 |

| Organisational measures           |
|-----------------------------------|
| No special measures are required. |

| Measures related to wastewater treatment and efficiency of the risk management measures (in exposure calculation model) |          |                                                            |
|-------------------------------------------------------------------------------------------------------------------------|----------|------------------------------------------------------------|
| ERC6a                                                                                                                   | Measures | Ensure all waste water is collected and treated via a WWTP |

| Measures related to waste treatment                                                                       |
|-----------------------------------------------------------------------------------------------------------|
| For further instructions related to waste management please refer to section 13 of the Safety Data Sheet. |

## 2.3 Contributing scenario controlling worker exposure

| Affected process category (PROC) |        |                                                                                                                          |
|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------|
| Category                         | Code   | Use description                                                                                                          |
| Process category (PROC)          | PROC1  | Use in closed process, no likelihood of exposure                                                                         |
|                                  | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                    |
|                                  | PROC3  | Use in closed batch process (synthesis or formulation)                                                                   |
|                                  | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                         |
|                                  | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
|                                  | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities     |
|                                  | PROC15 | Use as laboratory reagent                                                                                                |

### Operational conditions controlling worker exposure

| Concentration of substance |         |         |              |
|----------------------------|---------|---------|--------------|
|                            | PROC1   | PROC2   | PROC3, PROC4 |
| Value                      | ≤ 100 % | ≤ 100 % | ≤ 100 %      |
|                            | PROC8a  | PROC8b  | PROC15       |
| Value                      | ≤ 100 % | ≤ 100 % | ≤ 100 %      |

| Amounts used |              |              |              |
|--------------|--------------|--------------|--------------|
|              | PROC1        | PROC2        | PROC3, PROC4 |
|              | Not relevant | Not relevant | Not relevant |
|              | PROC8a       | PROC8b       | PROC15       |
|              | Not relevant | Not relevant | Not relevant |

| Use conditions   |                         |                         |                 |
|------------------|-------------------------|-------------------------|-----------------|
|                  | PROC1                   | PROC2                   | PROC3, PROC4    |
| Location of use  | Indoor and outdoor use. | Indoor and outdoor use. | Indoor use      |
| Duration of use  | ≤ 8 hours/day           | ≤ 8 hours/day           | ≤ 8 hours/day   |
| Frequency of use | ≤ 220 days/year         | ≤ 220 days/year         | ≤ 220 days/year |
|                  | PROC8a                  | PROC8b                  | PROC15          |
| Location of use  | Indoor and outdoor use. | Indoor use              | Indoor use      |
| Duration of use  | ≤ 8 hours/day           | ≤ 8 hours/day           | ≤ 8 hours/day   |
| Frequency of use | ≤ 220 days/year         | ≤ 220 days/year         | ≤ 220 days/year |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

| Further operational conditions |                                                                                         |
|--------------------------------|-----------------------------------------------------------------------------------------|
| PROC1                          | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC2                          | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
|                                | Assumes a good basic standard of occupational hygiene is implemented.                   |
| PROC3, PROC4                   | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
|                                | Assumes a good basic standard of occupational hygiene is implemented.                   |
| PROC8a                         | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
|                                | Assumes a good basic standard of occupational hygiene is implemented.                   |
| PROC8b                         | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
|                                | Assumes a good basic standard of occupational hygiene is implemented.                   |
| PROC15                         | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |

**Risk management measures (RMM) controlling worker exposure**

| Technical measures and efficiency of the risk management measures (in exposure calculation model) |                |                                                                                                                         |
|---------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------|
| PROC1                                                                                             | Measures       | No special measures are required.                                                                                       |
| PROC2                                                                                             | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                   | Efficiency (%) | 30                                                                                                                      |
| PROC3, PROC4                                                                                      | Measures       | Handle only at a place with local exhaust system (or another appropriate exhaust).                                      |
|                                                                                                   | Efficiency (%) | 90                                                                                                                      |
| PROC8a                                                                                            | Measures       | No special measures are required.                                                                                       |
| PROC8b                                                                                            | Measures       | Ensure material transfers are under containment or extract ventilation.                                                 |
|                                                                                                   | Efficiency (%) | 97                                                                                                                      |
| PROC15                                                                                            | Measures       | Handle in a fume cupboard or under extract ventilation.                                                                 |
|                                                                                                   | Efficiency (%) | 90                                                                                                                      |

| Organisational measures |                                                                         |
|-------------------------|-------------------------------------------------------------------------|
| PROC1                   | No special measures are required.                                       |
| PROC2                   | No special measures are required.                                       |
| PROC3, PROC4            | No special measures are required.                                       |
| PROC8a                  | Drain down and flush system prior to equipment break-in or maintenance. |
| PROC8b                  | No special measures are required.                                       |
| PROC15                  | No special measures are required.                                       |

**Personal protective equipment and efficiency of the risk management measures (in exposure calculation model)**

| Advice       |                                                                                                                         |
|--------------|-------------------------------------------------------------------------------------------------------------------------|
| PROC1        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC2        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC3, PROC4 | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC8a       | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC8b       | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC15       | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

| Hand protection |                |                                                                                                                 |
|-----------------|----------------|-----------------------------------------------------------------------------------------------------------------|
| PROC1           | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC2           | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC3, PROC4    | Measures       | No special measures are required.                                                                               |
| PROC8a          | Measures       | Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.               |
|                 | Efficiency (%) | 80                                                                                                              |
| PROC8b          | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC15          | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |

### SECTION 3: Exposure estimation and reference to sources

#### 3.1 Advice

The Risk Characterization Ratio (RCR) is the quotient of predicted human/environmental exposure and the related DNEL/PNEC. Exposure is calculated based on exposure models as stated below. If  $RCR \leq 1$  a use is considered as safe under operational conditions and risk management measures as specified in the exposure scenario.

For DNEL/PNEC values please refer to section 8 of the safety data sheet.

#### 3.2 Exposure estimation - Environment

| Affected environmental release category (ERC)                            |                                                 |                                                                                     |
|--------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------------------------------------------|
| Category                                                                 | Code                                            | Use description                                                                     |
| Environmental release category (ERC)                                     | ERC6a                                           | Industrial use resulting in manufacture of another substance (use of intermediates) |
| Used exposure estimation model for calculation of environmental exposure |                                                 |                                                                                     |
| Used exposure estimation model                                           | Qualitative approach used to conclude safe use. |                                                                                     |
| Other information                                                        | The use is assessed to be safe.                 |                                                                                     |

#### 3.3 Exposure estimation - Worker

| Affected process category (PROC)                                  |                                                                           |                                                                                                                          |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Category                                                          | Code                                                                      | Use description                                                                                                          |
| Process category (PROC)                                           | PROC1                                                                     | Use in closed process, no likelihood of exposure                                                                         |
|                                                                   | PROC2                                                                     | Use in closed, continuous process with occasional controlled exposure                                                    |
|                                                                   | PROC3                                                                     | Use in closed batch process (synthesis or formulation)                                                                   |
|                                                                   | PROC4                                                                     | Use in batch and other process (synthesis) where opportunity for exposure arises                                         |
|                                                                   | PROC8a                                                                    | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
|                                                                   | PROC8b                                                                    | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities     |
|                                                                   | PROC15                                                                    | Use as laboratory reagent                                                                                                |
| Used exposure estimation model for calculation of worker exposure |                                                                           |                                                                                                                          |
| Used exposure estimation model                                    | ECETOC TRA Version 2                                                      |                                                                                                                          |
| Link to exposure estimation tool                                  | ECETOC: <a href="http://www.ecetoc.org/tra">http://www.ecetoc.org/tra</a> |                                                                                                                          |

| Risk characterisation ratio (RCR) |                     |            |        |       |
|-----------------------------------|---------------------|------------|--------|-------|
|                                   | Exposure estimation | inhalative | dermal | total |
| PROC1                             | Long-term local     | 0.00       | 0.03   | 0.03  |
| PROC2                             | Long-term local     | 0.70       | 0.14   | 0.84  |
| PROC3                             | Long-term local     | 0.25       | 0.00   | 0.25  |
| PROC4                             | Long-term local     | 0.20       | 0.07   | 0.27  |
| PROC8a                            | Long-term local     | 0.50       | 0.27   | 0.77  |
| PROC8b                            | Long-term local     | 0.15       | 0.07   | 0.22  |
| PROC15                            | Long-term local     | 0.10       | 0.00   | 0.10  |

### SECTION 4: Guidance to DU to evaluate whether he works inside the boundaries set by the ES

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

#### 4.1 Recommendations and advice

##### Recommendations and general advice

If a downstream user uses the substance/preparation differently than stated in the ES (different operational conditions and/or risk management measures), he has the possibility to vary certain parameters of the exposure assessment. With the help of easy calculations he can check whether he still operates under safe circumstances. This process is called Scaling.

- For additional instructions relating to adaptation of conditions of use in view of a scaling, pls. see the VCI practice guide, part I, section 7.7. <https://www.vci.de/Themen/Chemikaliensicherheit/REACH/Seiten/REACH-Praxisfuehrer.aspx>

##### Scaling advice

###### Type of ventilation

If the type of ventilation at the use site of a downstream user (DU) differs from the instructions in the ES, a linear correlation between the RCR (Inhalation) and the type of ventilation exists. Following scaling factors (f) apply: General ventilation (< 3 air changes per hour) = 1; good general ventilation (3 to 5 air changes per hour, corresponds to outdoor use) = 0,7; enhanced general ventilation (> 5 air changes per hour) = 0,3.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{type of ventilation stated in ES})$

In the same manner a scaling for the efficiency of the local extract ventilation (LEV) can be applied.

###### Duration of use

If the duration of the use by a worker at a downstream user (DU) site differs from the instructions in the ES, a linear correlation between the RCR (Inhalation) and the duration of use exist. Following scaling factors (f) apply: duration > 4 hours/day = 1; duration: 1-4 hours/day = 0,6; duration: 15 min/day – 1 hour/day = 0,2; duration < 15 min/day = 0,1.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{duration in ES})$

###### Concentration of the substance in the product

If the downstream user (DU) uses the substance in a different concentration than the one stated in the ES, a linear correlation between the RCR (Inhalation) and the RCR (dermal) and the concentration exists. Following scaling factors (f) apply: Concentration > 25% = 1; concentration >= 5% = 0,6; concentration >= 1% = 0,2; concentration < 1% = 0,1.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{concentration in ES})$

#### 4.2 Exposure estimation - Environment

| Used exposure estimation model for calculation of environmental exposure |                                                 |
|--------------------------------------------------------------------------|-------------------------------------------------|
| Used exposure estimation model                                           | Qualitative approach used to conclude safe use. |
| Other information                                                        | The use is assessed to be safe.                 |

#### 4.3 Exposure estimation - Worker

| Used exposure estimation model for calculation of worker exposure |                                                                           |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|
| Used exposure estimation model                                    | ECETOC TRA Version 2                                                      |
| Link to exposure estimation tool                                  | ECETOC: <a href="http://www.ecetoc.org/tra">http://www.ecetoc.org/tra</a> |
| Other information                                                 |                                                                           |
| PROC8a                                                            | For the organizational measure an efficiency of 90% was assumed.          |

Trade name: Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

Current version : 2.2.0, issued: 11.06.2019

Replaced version: 2.1.0, issued: 06.02.2019

Region: GB

**SECTION 1: Title and scope of exposure scenario (ES)**
**1.1 Title exposure scenario (ES)**

ES2 Formulation and (re)packing of substance and mixtures - industrial use

**1.2 Scope of exposure scenario (ES)**

ES Type

Worker Exposure Scenario for substance/mixture

Life cycle stage

Formulation

**Product identifier**

Trade name

Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

MSK Code: 60010, 60019, 90022, 90023, 90025, 90029, 90030, 90043, 90045, 90049

Substance name

Acetic acid

REACH registration no.

01-2119475328-30-0018

CAS no.

64-19-7

EC no.

200-580-7

**Use descriptors**

| Sector of use (SU)                   |        |                                                                                                                            |
|--------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------|
| Category                             | Code   | Use description                                                                                                            |
| Main user group                      | SU3    | Industrial uses                                                                                                            |
| Sector of end-use                    | SU8    | Manufacture of bulk, large scale chemicals (including petroleum products)                                                  |
|                                      | SU9    | Manufacture of fine chemicals                                                                                              |
|                                      | SU10   | Formulation [mixing] of preparations and/or re-packaging (excluding alloys)                                                |
| Environmental release category (ERC) |        |                                                                                                                            |
| Category                             | Code   | Use description                                                                                                            |
| Environmental release category (ERC) | ERC2   | Formulation of preparations                                                                                                |
| Process category (PROC)              |        |                                                                                                                            |
| Category                             | Code   | Use description                                                                                                            |
| Process category (PROC)              | PROC1  | Use in closed process, no likelihood of exposure                                                                           |
|                                      | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                      |
|                                      | PROC3  | Use in closed batch process (synthesis or formulation)                                                                     |
|                                      | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                           |
|                                      | PROC5  | Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) |
|                                      | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities   |
|                                      | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities       |
|                                      | PROC9  | Transfer of substance or preparation into small containers (dedicated filling line, including weighing)                    |
|                                      | PROC14 | Production of preparations or articles by tableting, compression, extrusion, pelettisation                                 |
|                                      | PROC15 | Use as laboratory reagent                                                                                                  |

**Other information**

The information in this ES originate from the CSR.

**SECTION 2: Operational conditions (OC) and risk management measures (RMM) controlling exposure towards environment and men**
**2.1 Product characteristics**

| State of aggregation  |       |     |
|-----------------------|-------|-----|
| liquid                |       |     |
| Reference temperature | 25    | °C  |
| Dustiness             |       |     |
| Not relevant          |       |     |
| Vapour pressure       |       |     |
| Value                 | 20.79 | hPa |
| Reference temperature | 25    | °C  |



Trade name: Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

Current version : 2.2.0, issued: 11.06.2019

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Region: GB

**Other information**

The efficiency of a risk management measure is a theoretical value. The efficiency describes to which extend (in percent) the calculated exposure can be diminished by applying a certain measure. If the described operational conditions and risk management measures are fulfilled by a downstream user, the efficiency as highlighted in the ES can be applied. A downstream user might check whether the efficiency of the LEV or general ventilation corresponds to his site.

**2.2 Contributing scenario controlling environmental exposure****Affected environmental release category (ERC)**

| Category                             | Code | Use description             |
|--------------------------------------|------|-----------------------------|
| Environmental release category (ERC) | ERC2 | Formulation of preparations |

**Risk management measures (RMM) controlling environmental exposure****Technical measures and efficiency of the risk management measures (in exposure calculation model)**

No special measures are required.

**Organisational measures**

No special measures are required.

**Measures related to wastewater treatment and efficiency of the risk management measures (in exposure calculation model)**

|      |          |                                                             |
|------|----------|-------------------------------------------------------------|
| ERC2 | Measures | Ensure all waste water is collected and treated via a WWTP. |
|------|----------|-------------------------------------------------------------|

**Measures related to waste treatment**

For further instructions related to waste management please refer to section 13 of the Safety Data Sheet.

**2.3 Contributing scenario controlling worker exposure****Affected process category (PROC)**

| Category                | Code   | Use description                                                                                                            |
|-------------------------|--------|----------------------------------------------------------------------------------------------------------------------------|
| Process category (PROC) | PROC1  | Use in closed process, no likelihood of exposure                                                                           |
|                         | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                      |
|                         | PROC3  | Use in closed batch process (synthesis or formulation)                                                                     |
|                         | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                           |
|                         | PROC5  | Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) |
|                         | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities   |
|                         | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities       |
|                         | PROC9  | Transfer of substance or preparation into small containers (dedicated filling line, including weighing)                    |
|                         | PROC14 | Production of preparations or articles by tableting, compression, extrusion, pelettisation                                 |
|                         | PROC15 | Use as laboratory reagent                                                                                                  |

**Operational conditions controlling worker exposure****Concentration of substance**

|       | PROC1   | PROC2   | PROC3   |
|-------|---------|---------|---------|
| Value | ≤ 100 % | ≤ 100 % | ≤ 100 % |
|       | PROC4   | PROC5   | PROC8a  |
| Value | ≤ 100 % | ≤ 100 % | ≤ 100 % |
|       | PROC8b  | PROC9   | PROC14  |
| Value | ≤ 100 % | ≤ 100 % | ≤ 100 % |
|       | PROC15  |         |         |
| Value | ≤ 100 % |         |         |

Trade name: Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

Current version : 2.2.0, issued: 11.06.2019

Replaced version: 2.1.0, issued: 06.02.2019

Region: GB

| Amounts used |              |              |              |
|--------------|--------------|--------------|--------------|
|              | PROC1        | PROC2        | PROC3        |
|              | Not relevant | Not relevant | Not relevant |
|              | PROC4        | PROC5        | PROC8a       |
|              | Not relevant | Not relevant | Not relevant |
|              | PROC8b       | PROC9        | PROC14       |
|              | Not relevant | Not relevant | Not relevant |
|              | PROC15       |              |              |
|              | Not relevant |              |              |

| Use conditions   |                         |                         |                 |
|------------------|-------------------------|-------------------------|-----------------|
|                  | PROC1                   | PROC2                   | PROC3           |
| Location of use  | Indoor and outdoor use. | Indoor and outdoor use. | Indoor use      |
| Duration of use  | ≤ 8 hours/day           | ≤ 8 hours/day           | ≤ 4 hours/day   |
| Frequency of use | ≤ 220 days/year         | ≤ 220 days/year         | ≤ 220 days/year |
|                  | PROC4                   | PROC5                   | PROC8a          |
| Location of use  | Indoor use              | Indoor use              | Indoor use      |
| Duration of use  | ≤ 8 hours/day           | ≤ 8 hours/day           | ≤ 8 hours/day   |
| Frequency of use | ≤ 220 days/year         | ≤ 220 days/year         | ≤ 220 days/year |
|                  | PROC8b                  | PROC9                   | PROC14          |
| Location of use  | Indoor use              | Indoor use              | Indoor use      |
| Duration of use  | ≤ 8 hours/day           | ≤ 8 hours/day           | ≤ 8 hours/day   |
| Frequency of use | ≤ 220 days/year         | ≤ 220 days/year         | ≤ 220 days/year |
|                  | PROC15                  |                         |                 |
| Location of use  | Indoor use              |                         |                 |
| Duration of use  | ≤ 8 hours/day           |                         |                 |
| Frequency of use | ≤ 220 days/year         |                         |                 |

| Further operational conditions |                                                                                         |
|--------------------------------|-----------------------------------------------------------------------------------------|
| PROC1                          | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC2                          | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC3                          | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Operation is carried out at elevated temperature (> 20°C above ambient temperature)     |
| PROC4                          | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC5                          | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC8a                         | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC8b                         | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC9                          | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC14                         | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC15                         | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

**Risk management measures (RMM) controlling worker exposure**

| <b>Technical measures and efficiency of the risk management measures (in exposure calculation model)</b> |                |                                                                                                                         |
|----------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------|
| PROC1                                                                                                    | Measures       | No special measures are required.                                                                                       |
| PROC2                                                                                                    | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                          | Efficiency (%) | 30                                                                                                                      |
| PROC3                                                                                                    | Measures       | Handle only at a place with local exhaust system (or another appropriate exhaust).                                      |
|                                                                                                          | Efficiency (%) | 90                                                                                                                      |
| PROC4                                                                                                    | Measures       | Provide extract ventilation to points where emissions occur.                                                            |
|                                                                                                          | Efficiency (%) | 90                                                                                                                      |
| PROC5                                                                                                    | Measures       | Provide extract ventilation to points where emissions occur.                                                            |
|                                                                                                          | Efficiency (%) | 90                                                                                                                      |
| PROC8a                                                                                                   | Measures       | Provide extract ventilation to points where emissions occur.                                                            |
|                                                                                                          | Efficiency (%) | 90                                                                                                                      |
| PROC8b                                                                                                   | Measures       | Provide extract ventilation to points where emissions occur.                                                            |
|                                                                                                          | Efficiency (%) | 97                                                                                                                      |
| PROC9                                                                                                    | Measures       | Ensure material transfers are under containment or extract ventilation.                                                 |
|                                                                                                          | Efficiency (%) | 90                                                                                                                      |
| PROC14                                                                                                   | Measures       | Provide extract ventilation to points where emissions occur.                                                            |
|                                                                                                          | Efficiency (%) | 90                                                                                                                      |
| PROC15                                                                                                   | Measures       | Handle in a fume cupboard or under extract ventilation.                                                                 |
|                                                                                                          | Efficiency (%) | 90                                                                                                                      |

| <b>Organisational measures</b> |                                                                         |
|--------------------------------|-------------------------------------------------------------------------|
| PROC1                          | No special measures are required.                                       |
| PROC2                          | No special measures are required.                                       |
| PROC3                          | Avoid carrying out activities involving exposure for more than 4 hours. |
| PROC4                          | No special measures are required.                                       |
| PROC5                          | No special measures are required.                                       |
| PROC8a                         | Drain down and flush system prior to equipment break-in or maintenance. |
| PROC8b                         | Clear transfer lines prior to de-coupling.                              |
|                                | Avoid spillage when withdrawing pump.                                   |
| PROC9                          | Clear spills immediately.                                               |
|                                | Put lids on containers immediately after use.                           |
| PROC14                         | No special measures are required.                                       |
| PROC15                         | No special measures are required.                                       |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

**Personal protective equipment and efficiency of the risk management measures (in exposure calculation model)**

| <b>Advice</b> |                                                                                                                         |
|---------------|-------------------------------------------------------------------------------------------------------------------------|
| PROC1         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC2         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC3         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC4         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC5         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC8a        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC8b        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC9         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC14        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC15        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |

| <b>Hand protection</b> |                |                                                                                                                 |
|------------------------|----------------|-----------------------------------------------------------------------------------------------------------------|
| PROC1                  | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC2                  | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC3                  | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC4                  | Measures       | No special measures are required.                                                                               |
| PROC5                  | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC8a                 | Measures       | Wear suitable gloves tested to EN374.                                                                           |
|                        | Efficiency (%) | 80                                                                                                              |
| PROC8b                 | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC9                  | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC14                 | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC15                 | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |

| <b>Other</b> |          |                                                                                 |
|--------------|----------|---------------------------------------------------------------------------------|
| PROC8b       | Measures | If above technical control measures are not feasible, then adopt following PPE: |
|              | Measures | Wear a respirator conforming to EN140 with Type A filter or better.             |
|              | Measures | Wear suitable gloves tested to EN374.                                           |

**SECTION 3: Exposure estimation and reference to sources**
**3.1 Advice**

The Risk Characterization Ratio (RCR) is the quotient of predicted human/environmental exposure and the related DNEL/PNEC. Exposure is calculated based on exposure models as stated below. If  $RCR \leq 1$  a use is considered as safe under operational conditions and risk management measures as specified in the exposure scenario.

For DNEL/PNEC values please refer to section 8 of the safety data sheet.

Trade name: Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

Current version : 2.2.0, issued: 11.06.2019

Replaced version: 2.1.0, issued: 06.02.2019

Region: GB

### 3.2 Exposure estimation - Environment

| Affected environmental release category (ERC)                            |                                                 |                             |
|--------------------------------------------------------------------------|-------------------------------------------------|-----------------------------|
| Category                                                                 | Code                                            | Use description             |
| Environmental release category (ERC)                                     | ERC2                                            | Formulation of preparations |
| Used exposure estimation model for calculation of environmental exposure |                                                 |                             |
| Used exposure estimation model                                           | Qualitative approach used to conclude safe use. |                             |
| Other information                                                        | The use is assessed to be safe.                 |                             |

### 3.3 Exposure estimation - Worker

| Affected process category (PROC)                                  |                                                                           |                                                                                                                            |        |       |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------|-------|
| Category                                                          | Code                                                                      | Use description                                                                                                            |        |       |
| Process category (PROC)                                           | PROC1                                                                     | Use in closed process, no likelihood of exposure                                                                           |        |       |
|                                                                   | PROC2                                                                     | Use in closed, continuous process with occasional controlled exposure                                                      |        |       |
|                                                                   | PROC3                                                                     | Use in closed batch process (synthesis or formulation)                                                                     |        |       |
|                                                                   | PROC4                                                                     | Use in batch and other process (synthesis) where opportunity for exposure arises                                           |        |       |
|                                                                   | PROC5                                                                     | Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) |        |       |
|                                                                   | PROC8a                                                                    | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities   |        |       |
|                                                                   | PROC8b                                                                    | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities       |        |       |
|                                                                   | PROC9                                                                     | Transfer of substance or preparation into small containers (dedicated filling line, including weighing)                    |        |       |
|                                                                   | PROC14                                                                    | Production of preparations or articles by tableting, compression, extrusion, pelettisation                                 |        |       |
|                                                                   | PROC15                                                                    | Use as laboratory reagent                                                                                                  |        |       |
| Used exposure estimation model for calculation of worker exposure |                                                                           |                                                                                                                            |        |       |
| Used exposure estimation model                                    | ECETOC TRA Version 2                                                      |                                                                                                                            |        |       |
| Link to exposure estimation tool                                  | ECETOC: <a href="http://www.ecetoc.org/tra">http://www.ecetoc.org/tra</a> |                                                                                                                            |        |       |
| Risk characterisation ratio (RCR)                                 |                                                                           |                                                                                                                            |        |       |
|                                                                   | Exposure estimation                                                       | inhalative                                                                                                                 | dermal | total |
| PROC1                                                             | Long-term local                                                           | 0.00                                                                                                                       | 0.03   | 0.03  |
| PROC2                                                             | Long-term local                                                           | 0.70                                                                                                                       | 0.14   | 0.84  |
| PROC3                                                             | Long-term local                                                           | 0.60                                                                                                                       | 0.00   | 0.60  |
| PROC4                                                             | Long-term local                                                           | 0.20                                                                                                                       | 0.07   | 0.27  |
| PROC5                                                             | Long-term local                                                           | 0.50                                                                                                                       | 0.01   | 0.51  |
| PROC8a                                                            | Long-term local                                                           | 0.50                                                                                                                       | 0.27   | 0.77  |
| PROC8b                                                            | Long-term local                                                           | 0.15                                                                                                                       | 0.69   | 0.84  |
| PROC9                                                             | Long-term local                                                           | 0.50                                                                                                                       | 0.07   | 0.57  |
| PROC14                                                            | Long-term local                                                           | 0.50                                                                                                                       | 0.03   | 0.53  |
| PROC15                                                            | Long-term local                                                           | 0.10                                                                                                                       | 0.00   | 0.10  |

## SECTION 4: Guidance to DU to evaluate whether he works inside the boundaries set by the ES

### 4.1 Recommendations and advice

#### Recommendations and general advice

- For additional instructions relating to adaptation of conditions of use in view of a scaling, pls. see the VCI practice guide, part I, section 7.7. <https://www.vci.de/Themen/Chemikaliensicherheit/REACH/Seiten/REACH-Praxisfuehrer.aspx>  
 If a downstream user uses the substance/preparation differently than stated in the ES (different operational conditions and/or risk management measures), he has the possibility to vary certain parameters of the exposure assessment. With the help of easy calculations he can check whether he still operates under safe circumstances. This process is called Scaling.

#### Scaling advice

##### Type of ventilation

If the type of ventilation at the use site of a downstream user (DU) differs from the instructions in the ES, a linear correlation between the RCR (Inhalation) and the type of ventilation exists. Following scaling factors (f) apply: General ventilation (< 3 air changes per hour) = 1; good general ventilation (3 to 5 air changes per hour, corresponds to outdoor use) = 0,7; enhanced general ventilation (> 5 air changes per hour) = 0,3.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{type of ventilation stated in ES})$

In the same manner a scaling for the efficiency of the local extract ventilation (LEV) can be applied.

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%**Current version :** 2.2.0, issued: 11.06.2019**Replaced version:** 2.1.0, issued: 06.02.2019**Region:** GB**Duration of use**

If the duration of the use by a worker at a downstream user (DU) site differs from the instructions in the ES, a linear correlation between the RCR (Inhalation) and the duration of use exist. Following scaling factors (f) apply: duration > 4 hours/day = 1; duration: 1-4 hours/day = 0,6; duration: 15 min/day – 1 hour/day = 0,2; duration < 15 min/day = 0,1.

$$\text{RCR (DU)} = \text{f(DU)} * \text{RCR (as stated in ES)} / \text{f (duration in ES)}$$
**Concentration of the substance in the product**

If the downstream user (DU) uses the substance in a different concentration than the one stated in the ES, a linear correlation between the RCR (Inhalation) and the RCR (dermal) and the concentration exists. Following scaling factors (f) apply: Concentration >25% =1; concentration >= 5% = 0,6; concentration >= 1% = 0,2; concentration < 1% = 0,1.

$$\text{RCR (DU)} = \text{f(DU)} * \text{RCR (as stated in ES)} / \text{f (concentration in ES)}$$
**4.2 Exposure estimation - Environment**

| Used exposure estimation model for calculation of environmental exposure |                                                 |
|--------------------------------------------------------------------------|-------------------------------------------------|
| Used exposure estimation model                                           | Qualitative approach used to conclude safe use. |
| Other information                                                        | The use is assessed to be safe.                 |

**4.3 Exposure estimation - Worker**

| Used exposure estimation model for calculation of worker exposure |                                                                           |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|
| Used exposure estimation model                                    | ECETOC TRA Version 2                                                      |
| Link to exposure estimation tool                                  | ECETOC: <a href="http://www.ecetoc.org/tra">http://www.ecetoc.org/tra</a> |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

**SECTION 1: Title and scope of exposure scenario (ES)**
**1.1 Title exposure scenario (ES)**

ES3 Use in cleaning agents - industrial use

**1.2 Scope of exposure scenario (ES)**

ES Type Worker Exposure Scenario for substance/mixture

Life cycle stage Industrial end use

**Product identifier**

Trade name Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%  
 MSK Code: 60010, 60019, 90022, 90023, 90025, 90029, 90030, 90043, 90045, 90049

Substance name Acetic acid  
 REACH registration no. 01-2119475328-30-0018  
 CAS no. 64-19-7  
 EC no. 200-580-7

**Use descriptors**

| <b>Sector of use (SU)</b>                   |        |                                                                                                                          |
|---------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------|
| Category                                    | Code   | Use description                                                                                                          |
| Main user group                             | SU3    | Industrial uses                                                                                                          |
| Sector of end-use                           | SU5    | Manufacture of textiles, leather, fur                                                                                    |
|                                             | SU6    | Manufacture of paper and paper products                                                                                  |
| <b>Environmental release category (ERC)</b> |        |                                                                                                                          |
| Category                                    | Code   | Use description                                                                                                          |
| Environmental release category (ERC)        | ERC4   | Industrial use of processing aids in processes and products, not becoming part of articles                               |
| <b>Process category (PROC)</b>              |        |                                                                                                                          |
| Category                                    | Code   | Use description                                                                                                          |
| Process category (PROC)                     | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                    |
|                                             | PROC3  | Use in closed batch process (synthesis or formulation)                                                                   |
|                                             | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                         |
|                                             | PROC7  | Industrial spraying                                                                                                      |
|                                             | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
|                                             | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities     |
|                                             | PROC10 | Roller application or brushing                                                                                           |
|                                             | PROC13 | Treatment of articles by dipping and pouring                                                                             |

**Other information**

The information in this ES originate from the CSR.

**SECTION 2: Operational conditions (OC) and risk management measures (RMM) controlling exposure towards environment and men**
**2.1 Product characteristics**

| <b>State of aggregation</b> |       |     |
|-----------------------------|-------|-----|
| liquid                      |       |     |
| Reference temperature       | 25    | °C  |
| <b>Dustiness</b>            |       |     |
| Not applicable              |       |     |
| <b>Vapour pressure</b>      |       |     |
| Value                       | 20.79 | hPa |
| Reference temperature       | 25    | °C  |

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**Current version :** 2.2.0, issued: 11.06.2019

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**Other information**

The efficiency of a risk management measure is a theoretical value. The efficiency describes to which extend (in percent) the calculated exposure can be diminished by applying a certain measure. If the described operational conditions and risk management measures are fulfilled by a downstream user, the efficiency as highlighted in the ES can be applied. A downstream user might check whether the efficiency of the LEV or general ventilation corresponds to his site.

**2.2 Contributing scenario controlling environmental exposure**

| Affected environmental release category (ERC) |      |                                                                                            |
|-----------------------------------------------|------|--------------------------------------------------------------------------------------------|
| Category                                      | Code | Use description                                                                            |
| Environmental release category (ERC)          | ERC4 | Industrial use of processing aids in processes and products, not becoming part of articles |

**Risk management measures (RMM) controlling environmental exposure**

| Technical measures and efficiency of the risk management measures (in exposure calculation model) |
|---------------------------------------------------------------------------------------------------|
| No special measures are required.                                                                 |

| Organisational measures           |
|-----------------------------------|
| No special measures are required. |

| Measures related to wastewater treatment and efficiency of the risk management measures (in exposure calculation model) |          |                                                             |
|-------------------------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------|
| ERC4                                                                                                                    | Measures | Ensure all waste water is collected and treated via a WWTP. |

| Measures related to waste treatment                                                                       |
|-----------------------------------------------------------------------------------------------------------|
| For further instructions related to waste management please refer to section 13 of the Safety Data Sheet. |

**2.3 Contributing scenario controlling worker exposure**

| Affected process category (PROC) |        |                                                                                                                          |
|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------|
| Category                         | Code   | Use description                                                                                                          |
| Process category (PROC)          | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                    |
|                                  | PROC3  | Use in closed batch process (synthesis or formulation)                                                                   |
|                                  | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                         |
|                                  | PROC7  | Industrial spraying                                                                                                      |
|                                  | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
|                                  | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities     |
|                                  | PROC10 | Roller application or brushing                                                                                           |
|                                  | PROC13 | Treatment of articles by dipping and pouring                                                                             |
|                                  |        |                                                                                                                          |
|                                  |        |                                                                                                                          |

**Operational conditions controlling worker exposure**

| Concentration of substance |         |         |         |
|----------------------------|---------|---------|---------|
|                            | PROC2   | PROC3   | PROC4   |
| Value                      | ≤ 100 % | ≤ 100 % | ≤ 100 % |
|                            | PROC7   | PROC8a  | PROC8b  |
| Value                      | ≤ 5 %   | ≤ 100 % | ≤ 100 % |
|                            | PROC10  | PROC13  |         |
| Value                      | ≤ 5 %   | ≤ 100 % |         |

| Amounts used |              |              |              |
|--------------|--------------|--------------|--------------|
|              | PROC2        | PROC3        | PROC4        |
|              | Not relevant | Not relevant | Not relevant |
|              | PROC7        | PROC8a       | PROC8b       |
|              | Not relevant | Not relevant | Not relevant |
|              | PROC10       | PROC13       |              |
|              | Not relevant | Not relevant |              |



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**Region:** GB

| Use conditions                 |                                                                                         |                         |                 |
|--------------------------------|-----------------------------------------------------------------------------------------|-------------------------|-----------------|
|                                | PROC2                                                                                   | PROC3                   | PROC4           |
| Location of use                | Indoor and outdoor use.                                                                 | Indoor and outdoor use. | Indoor use      |
| Duration of use                | ≤ 8 hours/day                                                                           | ≤ 1 hours/day           | ≤ 4 hours/day   |
| Frequency of use               | ≤ 220 days/year                                                                         | ≤ 220 days/year         | ≤ 220 days/year |
|                                | PROC7                                                                                   | PROC8a                  | PROC8b          |
| Location of use                | Indoor and outdoor use.                                                                 | Indoor use              | Indoor use      |
| Duration of use                | ≤ 1 hours/day                                                                           | ≤ 8 hours/day           | ≤ 8 hours/day   |
| Frequency of use               | ≤ 220 days/year                                                                         | ≤ 220 days/year         | ≤ 220 days/year |
|                                | PROC10                                                                                  | PROC13                  |                 |
| Location of use                | Indoor and outdoor use.                                                                 | Indoor use              |                 |
| Duration of use                | ≤ 4 hours/day                                                                           | ≤ 8 hours/day           |                 |
| Frequency of use               | ≤ 220 days/year                                                                         | ≤ 220 days/year         |                 |
| Further operational conditions |                                                                                         |                         |                 |
| PROC2                          | Assumes a good basic standard of occupational hygiene is implemented.                   |                         |                 |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |                         |                 |
| PROC3                          | Assumes a good basic standard of occupational hygiene is implemented.                   |                         |                 |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |                         |                 |
| PROC4                          | Assumes a good basic standard of occupational hygiene is implemented.                   |                         |                 |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |                         |                 |
| PROC7                          | Assumes a good basic standard of occupational hygiene is implemented.                   |                         |                 |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |                         |                 |
| PROC8a                         | Assumes a good basic standard of occupational hygiene is implemented.                   |                         |                 |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |                         |                 |
| PROC8b                         | Assumes a good basic standard of occupational hygiene is implemented.                   |                         |                 |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |                         |                 |
| PROC10                         | Assumes a good basic standard of occupational hygiene is implemented.                   |                         |                 |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |                         |                 |
| PROC13                         | Assumes a good basic standard of occupational hygiene is implemented.                   |                         |                 |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |                         |                 |

**Risk management measures (RMM) controlling worker exposure**

| Technical measures and efficiency of the risk management measures (in exposure calculation model) |                |                                                                                                                         |
|---------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------|
| PROC2                                                                                             | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                   | Efficiency (%) | 30                                                                                                                      |
| PROC3                                                                                             | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                   | Efficiency (%) | 30                                                                                                                      |
| PROC4                                                                                             | Measures       | Ensure material transfers are under containment or extract ventilation.                                                 |
|                                                                                                   | Efficiency (%) | 90                                                                                                                      |
| PROC7                                                                                             | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                   | Efficiency (%) | 30                                                                                                                      |
| PROC8a                                                                                            | Measures       | Ensure material transfers are under containment or extract ventilation.                                                 |
|                                                                                                   | Efficiency (%) | 90                                                                                                                      |
| PROC8b                                                                                            | Measures       | Ensure material transfers are under containment or extract ventilation.                                                 |
|                                                                                                   | Efficiency (%) | 97                                                                                                                      |
| PROC10                                                                                            | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                   | Efficiency (%) | 30                                                                                                                      |
| PROC13                                                                                            | Measures       | Provide extract ventilation to points where emissions occur.                                                            |
|                                                                                                   | Efficiency (%) | 90                                                                                                                      |

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**Region:** GB

| Organisational measures |                                                                                                                       |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------|
| PROC2                   | No special measures are required.                                                                                     |
| PROC3                   | Avoid carrying out activities involving exposure for more than 1 hour.                                                |
| PROC4                   | Avoid carrying out activities involving exposure for more than 4 hours.                                               |
| PROC7                   | For this PROC(s) no further measures are called.                                                                      |
| PROC8a                  | Drain down and flush system prior to equipment break-in or maintenance.<br>Clear transfer lines prior to de-coupling. |
| PROC8b                  | Clear transfer lines prior to de-coupling.                                                                            |
| PROC10                  | Avoid carrying out activities involving exposure for more than 4 hours.                                               |
| PROC13                  | Clear spills immediately.                                                                                             |

**Personal protective equipment and efficiency of the risk management measures (in exposure calculation model)**

| Advice |                                                                                                                         |
|--------|-------------------------------------------------------------------------------------------------------------------------|
| PROC2  | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC3  | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC4  | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC7  | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC8a | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC8b | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC10 | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC13 | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |

| Hand protection |                |                                                                                                                 |
|-----------------|----------------|-----------------------------------------------------------------------------------------------------------------|
| PROC2           | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC3           | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC4           | Measures       | No special measures are required.                                                                               |
| PROC7           | Measures       | Wear suitable gloves tested to EN374.                                                                           |
|                 | Efficiency (%) | 80                                                                                                              |
| PROC8a          | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC8b          | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC10          | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC13          | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |

**SECTION 3: Exposure estimation and reference to sources**
**3.1 Advice**

The Risk Characterization Ratio (RCR) is the quotient of predicted human/environmental exposure and the related DNEL/PNEC. Exposure is calculated based on exposure models as stated below. If  $RCR \leq 1$  a use is considered as safe under operational conditions and risk management measures as specified in the exposure scenario.

For DNEL/PNEC values please refer to section 8 of the safety data sheet.

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

### 3.2 Exposure estimation - Environment

| Affected environmental release category (ERC)                            |                                                 |                                                                                            |
|--------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------|
| Category                                                                 | Code                                            | Use description                                                                            |
| Environmental release category (ERC)                                     | ERC4                                            | Industrial use of processing aids in processes and products, not becoming part of articles |
| Used exposure estimation model for calculation of environmental exposure |                                                 |                                                                                            |
| Used exposure estimation model                                           | Qualitative approach used to conclude safe use. |                                                                                            |
| Other information                                                        | The use is assessed to be safe.                 |                                                                                            |

### 3.3 Exposure estimation - Worker

| Affected process category (PROC) |        |                                                                                                                          |
|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------|
| Category                         | Code   | Use description                                                                                                          |
| Process category (PROC)          | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                    |
|                                  | PROC3  | Use in closed batch process (synthesis or formulation)                                                                   |
|                                  | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                         |
|                                  | PROC7  | Industrial spraying                                                                                                      |
|                                  | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
|                                  | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities     |
|                                  | PROC10 | Roller application or brushing                                                                                           |
|                                  | PROC13 | Treatment of articles by dipping and pouring                                                                             |

| Used exposure estimation model for calculation of worker exposure |                                                                           |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|
| Used exposure estimation model                                    | ECETOC TRA Version 2                                                      |
| Link to exposure estimation tool                                  | ECETOC: <a href="http://www.ecetoc.org/tra">http://www.ecetoc.org/tra</a> |

| Risk characterisation ratio (RCR) |                     |            |        |       |
|-----------------------------------|---------------------|------------|--------|-------|
|                                   | Exposure estimation | inhalative | dermal | total |
| PROC2                             | Long-term local     | 0.70       | 0.14   | 0.84  |
| PROC3                             | Long-term local     | 0.35       | 0.03   | 0.38  |
| PROC4                             | Long-term local     | 0.60       | 0.07   | 0.67  |
| PROC7                             | Long-term local     | 0.70       | 0.17   | 0.87  |
| PROC8a                            | Long-term local     | 0.50       | 0.01   | 0.51  |
| PROC8b                            | Long-term local     | 0.15       | 0.07   | 0.22  |
| PROC10                            | Long-term local     | 0.42       | 0.55   | 0.97  |
| PROC13                            | Long-term local     | 0.50       | 0.07   | 0.57  |

## SECTION 4: Guidance to DU to evaluate whether he works inside the boundaries set by the ES

### 4.1 Recommendations and advice

#### Recommendations and general advice

- For additional instructions relating to adaptation of conditions of use in view of a scaling, pls. see the VCI practice guide, part I, section 7.7. <https://www.vci.de/Themen/Chemikaliensicherheit/REACH/Seiten/REACH-Praxisfuehrer.aspx>  
 If a downstream user uses the substance/preparation differently than stated in the ES (different operational conditions and/or risk management measures), he has the possibility to vary certain parameters of the exposure assessment. With the help of easy calculations he can check whether he still operates under safe circumstances. This process is called Scaling.

#### Scaling advice

##### Type of ventilation

If the type of ventilation at the use site of a downstream user (DU) differs from the instructions in the ES, a linear correlation between the RCR (Inhalation) and the type of ventilation exists. Following scaling factors (f) apply: General ventilation (< 3 air changes per hour) = 1; good general ventilation (3 to 5 air changes per hour, corresponds to outdoor use) = 0,7; enhanced general ventilation (> 5 air changes per hour) = 0,3.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{type of ventilation stated in ES})$

In the same manner a scaling for the efficiency of the local extract ventilation (LEV) can be applied.

##### Duration of use

If the duration of the use by a worker at a downstream user (DU) site differs from the instructions in the ES, a linear correlation between the RCR (Inhalation) and the duration of use exist. Following scaling factors (f) apply: duration > 4 hours/day = 1; duration: 1-4 hours/day = 0,6; duration: 15 min/day – 1 hour/day = 0,2; duration < 15 min/day = 0,1.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{duration in ES})$

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**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%**Current version :** 2.2.0, issued: 11.06.2019**Replaced version:** 2.1.0, issued: 06.02.2019**Region:** GB

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**Concentration of the substance in the product**

If the downstream user (DU) uses the substance in a different concentration than the one stated in the ES, a linear correlation between the RCR (Inhalation) and the RCR (dermal) and the concentration exists. Following scaling factors (f) apply: Concentration >25% =1; concentration >= 5% = 0,6; concentration >= 1% = 0,2; concentration < 1% = 0,1.  
 $RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{concentration in ES})$ .

**4.2 Exposure estimation - Environment**

| Used exposure estimation model for calculation of environmental exposure |                                                 |
|--------------------------------------------------------------------------|-------------------------------------------------|
| Used exposure estimation model                                           | Qualitative approach used to conclude safe use. |
| Other information                                                        | The use is assessed to be safe.                 |

**4.3 Exposure estimation - Worker**

| Used exposure estimation model for calculation of worker exposure |                                                                           |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|
| Used exposure estimation model                                    | ECETOC TRA Version 2                                                      |
| Link to exposure estimation tool                                  | ECETOC: <a href="http://www.ecetoc.org/tra">http://www.ecetoc.org/tra</a> |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

**SECTION 1: Title and scope of exposure scenario (ES)**
**1.1 Title exposure scenario (ES)**

ES4 Agrochemicals - professional use

**1.2 Scope of exposure scenario (ES)**

ES Type Worker-ES for products.

Life cycle stage Professional end use

**Product identifier**

Trade name Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%  
 MSK Code: 60010, 60019, 90022, 90023, 90025, 90029, 90030, 90043, 90045, 90049

Substance name Acetic acid  
 REACH registration no. 01-2119475328-30-0018  
 CAS no. 64-19-7  
 EC no. 200-580-7

**Use descriptors**

| Sector of use (SU)                   |        |                                                                                                                          |
|--------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------|
| Category                             | Code   | Use description                                                                                                          |
| Main user group                      | SU22   | Professional uses                                                                                                        |
| Environmental release category (ERC) |        |                                                                                                                          |
| Category                             | Code   | Use description                                                                                                          |
| Environmental release category (ERC) | ERC8d  | Wide dispersive outdoor use of processing aids in open systems                                                           |
| Process category (PROC)              |        |                                                                                                                          |
| Category                             | Code   | Use description                                                                                                          |
| Process category (PROC)              | PROC1  | Use in closed process, no likelihood of exposure                                                                         |
|                                      | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                    |
|                                      | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                         |
|                                      | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
|                                      | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities     |
|                                      | PROC11 | Non industrial spraying                                                                                                  |
|                                      | PROC13 | Treatment of articles by dipping and pouring                                                                             |

**Other information**

The information in this ES originate from the CSR.

**SECTION 2: Operational conditions (OC) and risk management measures (RMM) controlling exposure towards environment and men**
**2.1 Product characteristics**

| State of aggregation                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|
| liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |     |
| Reference temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 25    | °C  |
| Dustiness                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |     |
| Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |     |
| Vapour pressure                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |     |
| Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 20.79 | hPa |
| Reference temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 25    | °C  |
| Other information                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |     |
| The efficiency of a risk management measure is a theoretical value. The efficiency describes to which extend (in percent) the calculated exposure can be diminished by applying a certain measure. If the described operational conditions and risk management measures are fulfilled by a downstream user, the efficiency as highlighted in the ES can be applied. A downstream user might check whether the efficiency of the LEV or general ventilation corresponds to his site. |       |     |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

## 2.2 Contributing scenario controlling environmental exposure

| Affected environmental release category (ERC) |       |                                                                |
|-----------------------------------------------|-------|----------------------------------------------------------------|
| Category                                      | Code  | Use description                                                |
| Environmental release category (ERC)          | ERC8d | Wide dispersive outdoor use of processing aids in open systems |

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

## 2.3 Contributing scenario controlling worker exposure

| Affected process category (PROC) |        |                                                                                                                          |
|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------|
| Category                         | Code   | Use description                                                                                                          |
| Process category (PROC)          | PROC1  | Use in closed process, no likelihood of exposure                                                                         |
|                                  | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                    |
|                                  | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                         |
|                                  | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
|                                  | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities     |
|                                  | PROC11 | Non industrial spraying                                                                                                  |
|                                  | PROC13 | Treatment of articles by dipping and pouring                                                                             |

### Operational conditions controlling worker exposure

| Concentration of substance |         |         |         |
|----------------------------|---------|---------|---------|
|                            | PROC1   | PROC2   | PROC4   |
| Value                      | ≤ 100 % | ≤ 100 % | ≤ 100 % |
|                            | PROC8a  | PROC8b  | PROC11  |
| Value                      | ≤ 5 %   | ≤ 100 % | ≤ 5 %   |
|                            | PROC13  |         |         |
| Value                      | ≤ 5 %   |         |         |

| Amounts used |              |              |              |
|--------------|--------------|--------------|--------------|
|              | PROC1        | PROC2        | PROC4        |
|              | Not relevant | Not relevant | Not relevant |
|              | PROC8a       | PROC8b       | PROC11       |
|              | Not relevant | Not relevant | Not relevant |
|              | PROC13       |              |              |
|              | Not relevant |              |              |

| Use conditions   |                         |                         |                         |
|------------------|-------------------------|-------------------------|-------------------------|
|                  | PROC1                   | PROC2                   | PROC4                   |
| Location of use  | Indoor and outdoor use. | Indoor and outdoor use. | Indoor and outdoor use. |
| Duration of use  | ≤ 8 hours/day           | ≤ 4 hours/day           | ≤ 1 hours/day           |
| Frequency of use | ≤ 220 days/year         | ≤ 220 days/year         | ≤ 220 days/year         |
|                  | PROC8a                  | PROC8b                  | PROC11                  |
| Location of use  | Indoor and outdoor use. | Indoor and outdoor use. | Indoor and outdoor use. |
| Duration of use  | ≤ 1 hours/day           | ≤ 4 hours/day           | ≤ 4 hours/day           |
| Frequency of use | ≤ 220 days/year         | ≤ 220 days/year         | ≤ 220 days/year         |
|                  | PROC13                  |                         |                         |
| Location of use  | Indoor and outdoor use. |                         |                         |
| Duration of use  | ≤ 1 hours/day           |                         |                         |
| Frequency of use | ≤ 220 days/year         |                         |                         |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

| Further operational conditions |                                                                                         |
|--------------------------------|-----------------------------------------------------------------------------------------|
| PROC1                          | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC2                          | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC4                          | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC8a                         | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC8b                         | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC11                         | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC13                         | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |

**Risk management measures (RMM) controlling worker exposure**

| Technical measures and efficiency of the risk management measures (in exposure calculation model) |                |                                                                                                                         |
|---------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------|
| PROC1                                                                                             | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                   | Efficiency (%) | 30                                                                                                                      |
| PROC2                                                                                             | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                   | Efficiency (%) | 30                                                                                                                      |
| PROC4                                                                                             | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                   | Efficiency (%) | 30                                                                                                                      |
| PROC8a                                                                                            | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                   | Efficiency (%) | 30                                                                                                                      |
| PROC8b                                                                                            | Measures       | Use drum pumps or carefully pour from container.                                                                        |
|                                                                                                   | Efficiency (%) | 80                                                                                                                      |
| PROC11                                                                                            | Measures       | Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20.       |
|                                                                                                   | Efficiency (%) | 95                                                                                                                      |
| PROC13                                                                                            | Measures       | No special measures are required.                                                                                       |

| Organisational measures |                                                                         |
|-------------------------|-------------------------------------------------------------------------|
| PROC1                   | No special measures are required.                                       |
| PROC2                   | Avoid carrying out activities involving exposure for more than 4 hours. |
| PROC4                   | Avoid carrying out activities involving exposure for more than 1 hour.  |
| PROC8a                  | Avoid carrying out activities involving exposure for more than 1 hour.  |
| PROC8b                  | Avoid carrying out activities involving exposure for more than 4 hours. |
| PROC11                  | Avoid carrying out activities involving exposure for more than 4 hours. |
| PROC13                  | Avoid carrying out activities involving exposure for more than 1 hour.  |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

**Personal protective equipment and efficiency of the risk management measures (in exposure calculation model)**

| <b>Advice</b> |                                                                                                                         |
|---------------|-------------------------------------------------------------------------------------------------------------------------|
| PROC1         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC2         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC4         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC8a        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC8b        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC11        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC13        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |

| <b>Hand protection</b> |                |                                                                                                                 |
|------------------------|----------------|-----------------------------------------------------------------------------------------------------------------|
| PROC1                  | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC2                  | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC4                  | Measures       | Wear suitable gloves tested to EN374.                                                                           |
|                        | Efficiency (%) | 80                                                                                                              |
| PROC8a                 | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC8b                 | Measures       | Wear suitable gloves tested to EN374.                                                                           |
|                        | Efficiency (%) | 80                                                                                                              |
| PROC11                 | Measures       | Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.               |
|                        | Efficiency (%) | 90                                                                                                              |
| PROC13                 | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |

| <b>Other</b> |                |                                                                                 |
|--------------|----------------|---------------------------------------------------------------------------------|
| PROC11       | Measures       | If above technical control measures are not feasible, then adopt following PPE: |
|              | Measures       | Wear a respirator conforming to EN140 with Type A filter or better.             |
|              | Efficiency (%) | 90                                                                              |

**SECTION 3: Exposure estimation and reference to sources**
**3.1 Advice**

The Risk Characterization Ratio (RCR) is the quotient of predicted human/environmental exposure and the related DNEL/PNEC. Exposure is calculated based on exposure models as stated below. If  $RCR \leq 1$  a use is considered as safe under operational conditions and risk management measures as specified in the exposure scenario.

For DNEL/PNEC values please refer to section 8 of the safety data sheet.

**3.2 Exposure estimation - Environment**

| <b>Affected environmental release category (ERC)</b>                            |                                                 |                                                                |
|---------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------------------------------------|
| Category                                                                        | Code                                            | Use description                                                |
| Environmental release category (ERC)                                            | ERC8d                                           | Wide dispersive outdoor use of processing aids in open systems |
| <b>Used exposure estimation model for calculation of environmental exposure</b> |                                                 |                                                                |
| Used exposure estimation model                                                  | Qualitative approach used to conclude safe use. |                                                                |
| Other information                                                               | The use is assessed to be safe.                 |                                                                |



**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

### 3.3 Exposure estimation - Worker

| Affected process category (PROC) |        |                                                                                                                          |  |  |
|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------|--|--|
| Category                         | Code   | Use description                                                                                                          |  |  |
| Process category (PROC)          | PROC1  | Use in closed process, no likelihood of exposure                                                                         |  |  |
|                                  | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                    |  |  |
|                                  | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                         |  |  |
|                                  | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |  |  |
|                                  | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities     |  |  |
|                                  | PROC11 | Non industrial spraying                                                                                                  |  |  |
|                                  | PROC13 | Treatment of articles by dipping and pouring                                                                             |  |  |

  

| Used exposure estimation model for calculation of worker exposure |                                                                           |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|
| Used exposure estimation model                                    | ECETOC TRA Version 2                                                      |
| Link to exposure estimation tool                                  | ECETOC: <a href="http://www.ecetoc.org/tra">http://www.ecetoc.org/tra</a> |

  

| Risk characterisation ratio (RCR) |                     |            |        |       |
|-----------------------------------|---------------------|------------|--------|-------|
|                                   | Exposure estimation | inhalative | dermal | total |
| PROC1                             | Long-term local     | 0.00       | 0.00   | 0.00  |
| PROC2                             | Long-term local     | 0.84       | 0.01   | 0.85  |
| PROC4                             | Long-term local     | 0.70       | 0.14   | 0.84  |
| PROC8a                            | Long-term local     | 0.28       | 0.27   | 0.55  |
| PROC8b                            | Long-term local     | 0.60       | 0.14   | 0.74  |
| PROC11                            | Long-term local     | 0.21       | 0.60   | 0.81  |
| PROC13                            | Long-term local     | 0.40       | 0.27   | 0.67  |

## SECTION 4: Guidance to DU to evaluate whether he works inside the boundaries set by the ES

### 4.1 Recommendations and advice

#### Recommendations and general advice

If a downstream user uses the substance/preparation differently than stated in the ES (different operational conditions and/or risk management measures), he has the possibility to vary certain parameters of the exposure assessment. With the help of easy calculations he can check whether he still operates under safe circumstances. This process is called Scaling.

- For additional instructions relating to adaptation of conditions of use in view of a scaling, pls. see the VCI practice guide, part I, section 7.7. <https://www.vci.de/Themen/Chemikaliensicherheit/REACH/Seiten/REACH-Praxisfuehrer.aspx>

#### Scaling advice

##### Type of ventilation

If the type of ventilation at the use site of a downstream user (DU) differs from the instructions in the ES, a linear correlation between the RCR (Inhalation) and the type of ventilation exists. Following scaling factors (f) apply: General ventilation (< 3 air changes per hour) = 1; good general ventilation (3 to 5 air changes per hour, corresponds to outdoor use) = 0,7; enhanced general ventilation (> 5 air changes per hour) = 0,3.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{type of ventilation stated in ES})$

In the same manner a scaling for the efficiency of the local extract ventilation (LEV) can be applied.

##### Duration of use

If the duration of the use by a worker at a downstream user (DU) site differs from the instructions in the ES, a linear correlation between the RCR (Inhalation) and the duration of use exist. Following scaling factors (f) apply: duration > 4 hours/day = 1; duration: 1-4 hours/day = 0,6; duration: 15 min/day – 1 hour/day = 0,2; duration < 15 min/day = 0,1.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{duration in ES})$

##### Concentration of the substance in the product

If the downstream user (DU) uses the substance in a different concentration than the one stated in the ES, a linear correlation between the RCR (Inhalation) and the RCR (dermal) and the concentration exists. Following scaling factors (f) apply: Concentration >25% = 1; concentration >= 5% = 0,6; concentration >= 1% = 0,2; concentration < 1% = 0,1.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{concentration in ES})$

### 4.2 Exposure estimation - Environment

| Used exposure estimation model for calculation of environmental exposure |                                                 |
|--------------------------------------------------------------------------|-------------------------------------------------|
| Used exposure estimation model                                           | Qualitative approach used to conclude safe use. |
| Other information                                                        | The use is assessed to be safe.                 |

### 4.3 Exposure estimation - Worker

| Used exposure estimation model for calculation of worker exposure |                      |
|-------------------------------------------------------------------|----------------------|
| Used exposure estimation model                                    | ECETOC TRA Version 2 |

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**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

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**Region:** GB

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|                                  |                                                                           |
|----------------------------------|---------------------------------------------------------------------------|
| Link to exposure estimation tool | ECETOC: <a href="http://www.ecetoc.org/tra">http://www.ecetoc.org/tra</a> |
|----------------------------------|---------------------------------------------------------------------------|

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

**SECTION 1: Title and scope of exposure scenario (ES)**
**1.1 Title exposure scenario (ES)**

ES5 Use as a laboratory reagent - professional use

**1.2 Scope of exposure scenario (ES)**

ES Type Worker Exposure Scenario for substance/mixture

Life cycle stage Professional end use

**Product identifier**

|                        |                                                                                |
|------------------------|--------------------------------------------------------------------------------|
| Trade name             | Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%            |
|                        | MSK Code: 60010, 60019, 90022, 90023, 90025, 90029, 90030, 90043, 90045, 90049 |
| Substance name         | Acetic acid                                                                    |
| REACH registration no. | 01-2119475328-30-0018                                                          |
| CAS no.                | 64-19-7                                                                        |
| EC no.                 | 200-580-7                                                                      |

**Use descriptors**

| Sector of use (SU)                   |        |                                                               |
|--------------------------------------|--------|---------------------------------------------------------------|
| Category                             | Code   | Use description                                               |
| Main user group                      | SU22   | Professional uses                                             |
| Environmental release category (ERC) |        |                                                               |
| Category                             | Code   | Use description                                               |
| Environmental release category (ERC) | ERC8a  | Wide dispersive indoor use of processing aids in open systems |
| Process category (PROC)              |        |                                                               |
| Category                             | Code   | Use description                                               |
| Process category (PROC)              | PROC10 | Roller application or brushing                                |
|                                      | PROC15 | Use as laboratory reagent                                     |

**Other information**

The information in this ES originate from the CSR.

**SECTION 2: Operational conditions (OC) and risk management measures (RMM) controlling exposure towards environment and men**
**2.1 Product characteristics**

| State of aggregation                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|
| liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |     |
| Reference temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 25    | °C  |
| Dustiness                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |     |
| Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |     |
| Vapour pressure                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |     |
| Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 20.79 | hPa |
| Reference temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 25    | °C  |
| Other information                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |     |
| The efficiency of a risk management measure is a theoretical value. The efficiency describes to which extend (in percent) the calculated exposure can be diminished by applying a certain measure. If the described operational conditions and risk management measures are fulfilled by a downstream user, the efficiency as highlighted in the ES can be applied. A downstream user might check whether the efficiency of the LEV or general ventilation corresponds to his site. |       |     |

**2.2 Contributing scenario controlling environmental exposure**

| Affected environmental release category (ERC) |       |                                                               |
|-----------------------------------------------|-------|---------------------------------------------------------------|
| Category                                      | Code  | Use description                                               |
| Environmental release category (ERC)          | ERC8a | Wide dispersive indoor use of processing aids in open systems |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed.

### 2.3 Contributing scenario controlling worker exposure

| Affected process category (PROC) |        |                                |
|----------------------------------|--------|--------------------------------|
| Category                         | Code   | Use description                |
| Process category (PROC)          | PROC10 | Roller application or brushing |
|                                  | PROC15 | Use as laboratory reagent      |

#### Operational conditions controlling worker exposure

| Concentration of substance |        |       |         |
|----------------------------|--------|-------|---------|
|                            | PROC10 |       | PROC15  |
| Value                      | ≤      | 100 % | ≤ 100 % |

| Amounts used |              |   |         |
|--------------|--------------|---|---------|
|              | PROC10       |   | PROC15  |
|              | Not relevant |   |         |
| Value        |              | < | 1000 ml |

| Use conditions   |            |               |                 |
|------------------|------------|---------------|-----------------|
|                  | PROC10     |               | PROC15          |
| Location of use  | Indoor use |               | Indoor use      |
| Duration of use  | ≤          | 1 hours/day   | ≤ 8 hours/day   |
| Frequency of use | ≤          | 220 days/year | ≤ 220 days/year |

| Further operational conditions |                                                                                                                                                                  |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROC10                         | Assumes use at not more than 20°C above ambient temperature, unless stated differently.<br>Assumes a good basic standard of occupational hygiene is implemented. |
| PROC15                         | Assumes a good basic standard of occupational hygiene is implemented.<br>Assumes use at not more than 20°C above ambient temperature, unless stated differently. |

#### Risk management measures (RMM) controlling worker exposure

| Technical measures and efficiency of the risk management measures (in exposure calculation model) |                |                                                                                    |
|---------------------------------------------------------------------------------------------------|----------------|------------------------------------------------------------------------------------|
| PROC10                                                                                            | Measures       | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). |
|                                                                                                   | Efficiency (%) | 70                                                                                 |
| PROC15                                                                                            | Measures       | Handle in a fume cupboard or under extract ventilation.                            |
|                                                                                                   | Efficiency (%) | 80                                                                                 |

| Organisational measures |                                                                        |
|-------------------------|------------------------------------------------------------------------|
| PROC10                  | Avoid carrying out activities involving exposure for more than 1 hour. |
| PROC15                  | No special measures are required.                                      |

#### Personal protective equipment and efficiency of the risk management measures (in exposure calculation model)

| Advice |                                                                                                                         |
|--------|-------------------------------------------------------------------------------------------------------------------------|
| PROC10 | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC15 | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |

| Hand protection |                |                                                                                                                 |
|-----------------|----------------|-----------------------------------------------------------------------------------------------------------------|
| PROC10          | Measures       | Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.               |
|                 | Efficiency (%) | 90                                                                                                              |
| PROC15          | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |

| Further risk management measures |                                        |
|----------------------------------|----------------------------------------|
| PROC10                           | Use long handled tools where possible. |

Trade name: Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

Current version : 2.2.0, issued: 11.06.2019

Replaced version: 2.1.0, issued: 06.02.2019

Region: GB

### SECTION 3: Exposure estimation and reference to sources

#### 3.1 Advice

The Risk Characterization Ratio (RCR) is the quotient of predicted human/environmental exposure and the related DNEL/PNEC. Exposure is calculated based on exposure models as stated below. If  $RCR \leq 1$  a use is considered as safe under operational conditions and risk management measures as specified in the exposure scenario.

For DNEL/PNEC values please refer to section 8 of the safety data sheet.

#### 3.2 Exposure estimation - Environment

| Affected environmental release category (ERC)                            |                                                 |                                                               |
|--------------------------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------|
| Category                                                                 | Code                                            | Use description                                               |
| Environmental release category (ERC)                                     | ERC8a                                           | Wide dispersive indoor use of processing aids in open systems |
| Used exposure estimation model for calculation of environmental exposure |                                                 |                                                               |
| Used exposure estimation model                                           | Qualitative approach used to conclude safe use. |                                                               |
| Other information                                                        | The use is assessed to be safe.                 |                                                               |

#### 3.3 Exposure estimation - Worker

| Affected process category (PROC)                                  |                                                                           |                                |        |       |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------|--------|-------|
| Category                                                          | Code                                                                      | Use description                |        |       |
| Process category (PROC)                                           | PROC10                                                                    | Roller application or brushing |        |       |
|                                                                   | PROC15                                                                    | Use as laboratory reagent      |        |       |
|                                                                   |                                                                           |                                |        |       |
| Used exposure estimation model for calculation of worker exposure |                                                                           |                                |        |       |
| Used exposure estimation model                                    | ECETOC TRA Version 2                                                      |                                |        |       |
| Link to exposure estimation tool                                  | ECETOC: <a href="http://www.ecetoc.org/tra">http://www.ecetoc.org/tra</a> |                                |        |       |
|                                                                   |                                                                           |                                |        |       |
| Risk characterisation ratio (RCR)                                 |                                                                           |                                |        |       |
|                                                                   | Exposure estimation                                                       | inhalative                     | dermal | total |
| PROC10                                                            | Long-term local                                                           | 0.60                           | 0.27   | 0.87  |
| PROC15                                                            | Long-term local                                                           | 0.20                           | 0.00   | 0.20  |

### SECTION 4: Guidance to DU to evaluate whether he works inside the boundaries set by the ES

#### 4.1 Recommendations and advice

##### Recommendations and general advice

- For additional instructions relating to adaptation of conditions of use in view of a scaling, pls. see the VCI practice guide, part I, section 7.7. <https://www.vci.de/Themen/Chemikaliensicherheit/REACH/Seiten/REACH-Praxisfuehrer.aspx>  
If a downstream user uses the substance/preparation differently than stated in the ES (different operational conditions and/or risk management measures), he has the possibility to vary certain parameters of the exposure assessment. With the help of easy calculations he can check whether he still operates under safe circumstances. This process is called Scaling.

##### Scaling advice

##### Type of ventilation

If the type of ventilation at the use site of a downstream user (DU) differs from the instructions in the ES, a linear correlation between the RCR (Inhalation) and the type of ventilation exists. Following scaling factors (f) apply: General ventilation (< 3 air changes per hour) = 1; good general ventilation (3 to 5 air changes per hour, corresponds to outdoor use) = 0,7; enhanced general ventilation (> 5 air changes per hour) = 0,3.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{type of ventilation stated in ES})$

In the same manner a scaling for the efficiency of the local extract ventilation (LEV) can be applied.

##### Duration of use

If the duration of the use by a worker at a downstream user (DU) site differs from the instructions in the ES, a linear correlation between the RCR (Inhalation) and the duration of use exist. Following scaling factors (f) apply: duration > 4 hours/day = 1; duration: 1-4 hours/day = 0,6; duration: 15 min/day – 1 hour/day = 0,2; duration < 15 min/day = 0,1.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{duration in ES})$

##### Concentration of the substance in the product

If the downstream user (DU) uses the substance in a different concentration than the one stated in the ES, a linear correlation between the RCR (Inhalation) and the RCR (dermal) and the concentration exists. Following scaling factors (f) apply: Concentration > 25% = 1; concentration >= 5% = 0,6; concentration >= 1% = 0,2; concentration < 1% = 0,1.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{concentration in ES})$

#### 4.2 Exposure estimation - Environment

| Used exposure estimation model for calculation of environmental exposure |                                                 |
|--------------------------------------------------------------------------|-------------------------------------------------|
| Used exposure estimation model                                           | Qualitative approach used to conclude safe use. |
| Other information                                                        | The use is assessed to be safe.                 |

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**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%**Current version :** 2.2.0, issued: 11.06.2019**Replaced version:** 2.1.0, issued: 06.02.2019**Region:** GB

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#### 4.3 Exposure estimation - Worker

| Used exposure estimation model for calculation of worker exposure |                                                                           |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|
| Used exposure estimation model                                    | ECETOC TRA Version 2                                                      |
| Link to exposure estimation tool                                  | ECETOC: <a href="http://www.ecetoc.org/tra">http://www.ecetoc.org/tra</a> |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

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**Region:** GB

**SECTION 1: Title and scope of exposure scenario (ES)**
**1.1 Title exposure scenario (ES)**

ES6 Water treatment - industrial use

**1.2 Scope of exposure scenario (ES)**

ES Type Worker Exposure Scenario for substance/mixture

Life cycle stage Industrial end use

**Product identifier**

Trade name Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%  
 MSK Code: 60010, 60019, 90022, 90023, 90025, 90029, 90030, 90043, 90045, 90049

Substance name Acetic acid  
 REACH registration no. 01-2119475328-30-0018  
 CAS no. 64-19-7  
 EC no. 200-580-7

**Use descriptors**

| Sector of use (SU)                   |        |                                                                                                                          |
|--------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------|
| Category                             | Code   | Use description                                                                                                          |
| Main user group                      | SU3    | Industrial uses                                                                                                          |
| Environmental release category (ERC) |        |                                                                                                                          |
| Category                             | Code   | Use description                                                                                                          |
| Environmental release category (ERC) | ERC4   | Industrial use of processing aids in processes and products, not becoming part of articles                               |
| Process category (PROC)              |        |                                                                                                                          |
| Category                             | Code   | Use description                                                                                                          |
| Process category (PROC)              | PROC1  | Use in closed process, no likelihood of exposure                                                                         |
|                                      | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                    |
|                                      | PROC3  | Use in closed batch process (synthesis or formulation)                                                                   |
|                                      | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                         |
|                                      | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
|                                      | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities     |
|                                      | PROC13 | Treatment of articles by dipping and pouring                                                                             |

**Other information**

The information in this ES originate from the CSR.

**SECTION 2: Operational conditions (OC) and risk management measures (RMM) controlling exposure towards environment and men**
**2.1 Product characteristics**

| State of aggregation                                                                                                                                                                                                                                                                                                                                                                                                                                                                |       |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-----|
| liquid                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |       |     |
| Reference temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 25    | °C  |
| Dustiness                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |     |
| Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |     |
| Vapour pressure                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |     |
| Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 20.79 | hPa |
| Reference temperature                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 25    | °C  |
| Other information                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |     |
| The efficiency of a risk management measure is a theoretical value. The efficiency describes to which extend (in percent) the calculated exposure can be diminished by applying a certain measure. If the described operational conditions and risk management measures are fulfilled by a downstream user, the efficiency as highlighted in the ES can be applied. A downstream user might check whether the efficiency of the LEV or general ventilation corresponds to his site. |       |     |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

## 2.2 Contributing scenario controlling environmental exposure

| Affected environmental release category (ERC) |      |                                                                                            |
|-----------------------------------------------|------|--------------------------------------------------------------------------------------------|
| Category                                      | Code | Use description                                                                            |
| Environmental release category (ERC)          | ERC4 | Industrial use of processing aids in processes and products, not becoming part of articles |

### Risk management measures (RMM) controlling environmental exposure

| Technical measures and efficiency of the risk management measures (in exposure calculation model) |
|---------------------------------------------------------------------------------------------------|
| No special measures are required.                                                                 |

| Organisational measures           |
|-----------------------------------|
| No special measures are required. |

| Measures related to wastewater treatment and efficiency of the risk management measures (in exposure calculation model) |          |                                                            |
|-------------------------------------------------------------------------------------------------------------------------|----------|------------------------------------------------------------|
| ERC4                                                                                                                    | Measures | Ensure all waste water is collected and treated via a WWTP |

| Measures related to waste treatment                                                                       |
|-----------------------------------------------------------------------------------------------------------|
| For further instructions related to waste management please refer to section 13 of the Safety Data Sheet. |

## 2.3 Contributing scenario controlling worker exposure

| Affected process category (PROC) |        |                                                                                                                          |
|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------|
| Category                         | Code   | Use description                                                                                                          |
| Process category (PROC)          | PROC1  | Use in closed process, no likelihood of exposure                                                                         |
|                                  | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                    |
|                                  | PROC3  | Use in closed batch process (synthesis or formulation)                                                                   |
|                                  | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                         |
|                                  | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
|                                  | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities     |
|                                  | PROC13 | Treatment of articles by dipping and pouring                                                                             |

### Operational conditions controlling worker exposure

| Concentration of substance |         |         |         |
|----------------------------|---------|---------|---------|
|                            | PROC1   | PROC2   | PROC3   |
| Value                      | ≤ 100 % | ≤ 100 % | ≤ 100 % |
|                            | PROC4   | PROC8a  | PROC8b  |
| Value                      | ≤ 100 % | ≤ 100 % | ≤ 100 % |
|                            | PROC13  |         |         |
| Value                      | ≤ 100 % |         |         |

| Amounts used |              |              |              |
|--------------|--------------|--------------|--------------|
|              | PROC1        | PROC2        | PROC3        |
|              | Not relevant | Not relevant | Not relevant |
|              | PROC4        | PROC8a       | PROC8b       |
|              | Not relevant | Not relevant | Not relevant |
|              | PROC13       |              |              |
|              | Not relevant |              |              |

| Use conditions   |                         |                         |                         |
|------------------|-------------------------|-------------------------|-------------------------|
|                  | PROC1                   | PROC2                   | PROC3                   |
| Location of use  | Indoor and outdoor use. | Indoor and outdoor use. | Indoor and outdoor use. |
| Duration of use  | ≤ 8 hours/day           | ≤ 4 hours/day           | ≤ 1 hours/day           |
| Frequency of use | ≤ 220 days/year         | ≤ 220 days/year         | ≤ 220 days/year         |
|                  | PROC4                   | PROC8a                  | PROC8b                  |
| Location of use  | Indoor and outdoor use. | Indoor and outdoor use. | Indoor and outdoor use. |
| Duration of use  | ≤ 4 hours/day           | ≤ 8 hours/day           | ≤ 4 hours/day           |
| Frequency of use | ≤ 220 days/year         | ≤ 220 days/year         | ≤ 220 days/year         |
|                  | PROC13                  |                         |                         |
| Location of use  | Indoor use              |                         |                         |
| Duration of use  | ≤ 4 hours/day           |                         |                         |
| Frequency of use | ≤ 220 days/year         |                         |                         |



**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

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**Region:** GB

| <b>Further operational conditions</b> |                                                                                         |
|---------------------------------------|-----------------------------------------------------------------------------------------|
| PROC1                                 | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                       | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC2                                 | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                       | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC3                                 | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                       | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC4                                 | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                       | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC8a                                | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                       | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC8b                                | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                       | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |
| PROC13                                | Assumes a good basic standard of occupational hygiene is implemented.                   |
|                                       | Assumes use at not more than 20°C above ambient temperature, unless stated differently. |

**Risk management measures (RMM) controlling worker exposure**

| <b>Technical measures and efficiency of the risk management measures (in exposure calculation model)</b> |                |                                                                                                                         |
|----------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------|
| PROC1                                                                                                    | Measures       | No special measures are required.                                                                                       |
| PROC2                                                                                                    | Measures       | No special measures are required.                                                                                       |
| PROC3                                                                                                    | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                          | Efficiency (%) | 30                                                                                                                      |
| PROC4                                                                                                    | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                          | Efficiency (%) | 30                                                                                                                      |
| PROC8a                                                                                                   | Measures       | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour, corresponds to outdoor use). |
|                                                                                                          | Efficiency (%) | 30                                                                                                                      |
| PROC8b                                                                                                   | Measures       | Use drum pumps.                                                                                                         |
|                                                                                                          | Efficiency (%) | 80                                                                                                                      |
| PROC13                                                                                                   | Measures       | Provide extract ventilation to points where emissions occur.                                                            |
|                                                                                                          | Efficiency (%) | 80                                                                                                                      |

| <b>Organisational measures</b> |                                                                         |
|--------------------------------|-------------------------------------------------------------------------|
| PROC1                          | No special measures are required.                                       |
| PROC2                          | Avoid carrying out activities involving exposure for more than 4 hours. |
| PROC3                          | Avoid carrying out activities involving exposure for more than 1 hour.  |
| PROC4                          | Avoid carrying out activities involving exposure for more than 4 hours. |
| PROC8a                         | Drain down and flush system prior to equipment break-in or maintenance. |
| PROC8b                         | Avoid carrying out activities involving exposure for more than 4 hours. |
| PROC13                         | Avoid carrying out activities involving exposure for more than 4 hours. |

**Personal protective equipment and efficiency of the risk management measures (in exposure calculation model)**

| <b>Advice</b> |                                                                                                                         |
|---------------|-------------------------------------------------------------------------------------------------------------------------|
| PROC1         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC2         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC3         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC4         | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC8a        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC8b        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |
| PROC13        | For further instructions related to "Personal protective equipment" please refer to section 8 of the Safety Data Sheet. |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

| Hand protection |                |                                                                                                                 |
|-----------------|----------------|-----------------------------------------------------------------------------------------------------------------|
| PROC1           | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC2           | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC3           | Measures       | Wear suitable gloves for handling strong sensitizing and corrosive substances in cases where exposure can occur |
| PROC4           | Measures       | Wear suitable gloves tested to EN374.                                                                           |
| PROC8a          | Efficiency (%) | 80                                                                                                              |
|                 | Measures       | Wear suitable gloves tested to EN374.                                                                           |
| PROC8b          | Efficiency (%) | 80                                                                                                              |
|                 | Measures       | Wear suitable gloves tested to EN374.                                                                           |
| PROC13          | Efficiency (%) | 80                                                                                                              |
|                 | Measures       | Wear suitable gloves tested to EN374.                                                                           |

### SECTION 3: Exposure estimation and reference to sources

#### 3.1 Advice

The Risk Characterization Ratio (RCR) is the quotient of predicted human/environmental exposure and the related DNEL/PNEC. Exposure is calculated based on exposure models as stated below. If  $RCR \leq 1$  a use is considered as safe under operational conditions and risk management measures as specified in the exposure scenario.

For DNEL/PNEC values please refer to section 8 of the safety data sheet.

#### 3.2 Exposure estimation - Environment

| Affected environmental release category (ERC)                            |                                                 |                                                                                            |
|--------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------|
| Category                                                                 | Code                                            | Use description                                                                            |
| Environmental release category (ERC)                                     | ERC4                                            | Industrial use of processing aids in processes and products, not becoming part of articles |
| Used exposure estimation model for calculation of environmental exposure |                                                 |                                                                                            |
| Used exposure estimation model                                           | Qualitative approach used to conclude safe use. |                                                                                            |
| Other information                                                        | The use is assessed to be safe.                 |                                                                                            |

#### 3.3 Exposure estimation - Worker

| Affected process category (PROC) |        |                                                                                                                          |
|----------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------|
| Category                         | Code   | Use description                                                                                                          |
| Process category (PROC)          | PROC1  | Use in closed process, no likelihood of exposure                                                                         |
|                                  | PROC2  | Use in closed, continuous process with occasional controlled exposure                                                    |
|                                  | PROC3  | Use in closed batch process (synthesis or formulation)                                                                   |
|                                  | PROC4  | Use in batch and other process (synthesis) where opportunity for exposure arises                                         |
|                                  | PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
|                                  | PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities     |
|                                  | PROC13 | Treatment of articles by dipping and pouring                                                                             |

| Used exposure estimation model for calculation of worker exposure |                                                                           |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|
| Used exposure estimation model                                    | ECETOC TRA Version 2                                                      |
| Link to exposure estimation tool                                  | ECETOC: <a href="http://www.ecetoc.org/tra">http://www.ecetoc.org/tra</a> |

| Risk characterisation ratio (RCR) |                     |            |        |       |
|-----------------------------------|---------------------|------------|--------|-------|
|                                   | Exposure estimation | inhalative | dermal | total |
| PROC1                             | Long-term local     | 0.00       | 0.00   | 0.00  |
| PROC2                             | Long-term local     | 0.60       | 0.14   | 0.74  |
| PROC3                             | Long-term local     | 0.35       | 0.03   | 0.38  |
| PROC4                             | Long-term local     | 0.84       | 0.14   | 0.98  |
| PROC8a                            | Long-term local     | 0.70       | 0.27   | 0.97  |
| PROC8b                            | Long-term local     | 0.60       | 0.14   | 0.74  |
| PROC13                            | Long-term local     | 0.60       | 0.27   | 0.87  |

**Trade name:** Acetic Acid, technical/foodstuff 99.8%, pharmaceutical 99.5%-100,5%

**Current version :** 2.2.0, issued: 11.06.2019

**Replaced version:** 2.1.0, issued: 06.02.2019

**Region:** GB

## SECTION 4: Guidance to DU to evaluate whether he works inside the boundaries set by the ES

### 4.1 Recommendations and advice

#### Recommendations and general advice

If a downstream user uses the substance/preparation differently than stated in the ES (different operational conditions and/or risk management measures), he has the possibility to vary certain parameters of the exposure assessment. With the help of easy calculations he can check whether he still operates under safe circumstances. This process is called Scaling.

- For additional instructions relating to adaptation of conditions of use in view of a scaling, pls. see the VCI practice guide, part I, section 7.7. <https://www.vci.de/Themen/Chemikaliensicherheit/REACH/Seiten/REACH-Praxisfuehrer.aspx>

#### Scaling advice

##### Type of ventilation

If the type of ventilation at the use site of a downstream user (DU) differs from the instructions in the ES, a linear correlation between the RCR (Inhalation) and the type of ventilation exists. Following scaling factors (f) apply: General ventilation (< 3 air changes per hour) = 1; good general ventilation (3 to 5 air changes per hour, corresponds to outdoor use) = 0,7; enhanced general ventilation (> 5 air changes per hour) = 0,3.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{type of ventilation stated in ES})$

In the same manner a scaling for the efficiency of the local extract ventilation (LEV) can be applied.

##### Duration of use

If the duration of the use by a worker at a downstream user (DU) site differs from the instructions in the ES, a linear correlation between the RCR (Inhalation) and the duration of use exist. Following scaling factors (f) apply: duration > 4 hours/day = 1; duration: 1-4 hours/day = 0,6; duration: 15 min/day – 1 hour/day = 0,2; duration < 15 min/day = 0,1.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{duration in ES})$

##### Concentration of the substance in the product

If the downstream user (DU) uses the substance in a different concentration than the one stated in the ES, a linear correlation between the RCR (Inhalation) and the RCR (dermal) and the concentration exists. Following scaling factors (f) apply: Concentration > 25% = 1; concentration >= 5% = 0,6; concentration >= 1% = 0,2; concentration < 1% = 0,1.

$RCR(DU) = f(DU) * RCR(\text{as stated in ES}) / f(\text{concentration in ES})$ .

### 4.2 Exposure estimation - Environment

| Used exposure estimation model for calculation of environmental exposure |                                                 |
|--------------------------------------------------------------------------|-------------------------------------------------|
| Used exposure estimation model                                           | Qualitative approach used to conclude safe use. |
| Other information                                                        | The use is assessed to be safe.                 |

### 4.3 Exposure estimation - Worker

| Used exposure estimation model for calculation of worker exposure |                                                                           |
|-------------------------------------------------------------------|---------------------------------------------------------------------------|
| Used exposure estimation model                                    | ECETOC TRA Version 2                                                      |
| Link to exposure estimation tool                                  | ECETOC: <a href="http://www.ecetoc.org/tra">http://www.ecetoc.org/tra</a> |
| Other information                                                 |                                                                           |
| PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC13                | For the organizational measure an efficiency of 90% was assumed.          |