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

1.1 **Product identifier**
- **Identification of the substance**: Pyruvic acid sodium salt
- **Article number**: 8793
- **Registration number (REACH)**: It is not required to list the identified uses because the substance is not subject to registration according to REACH (< 1 t/a)
- **EC number**: 204-024-4
- **CAS number**: 113-24-6

1.2 **Relevant identified uses of the substance or mixture and uses advised against**
- **Identified uses**: laboratory chemical, laboratory and analytical use

1.3 **Details of the supplier of the safety data sheet**
Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

**Telephone**: +49 (0) 721 - 56 06 0
**Telefax**: +49 (0) 721 - 56 06 149
**e-mail**: sicherheit@carlroth.de
**Website**: www.carlroth.de

Competent person responsible for the safety data sheet: Department Health, Safety and Environment
**e-mail (competent person)**: sicherheit@carlroth.de

1.4 **Emergency telephone number**

<table>
<thead>
<tr>
<th>Name</th>
<th>Street</th>
<th>Postal code/city</th>
<th>Telephone</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Poisons Information Centre Beaumont Hospital</td>
<td>Beaumont Road</td>
<td>Dublin 9</td>
<td>01 809 2166</td>
<td><a href="https://www.poisons.ie/">https://www.poisons.ie/</a></td>
</tr>
</tbody>
</table>

**SECTION 2: Hazards identification**

2.1 **Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008 (CLP)**
This substance does not meet the criteria for classification in accordance with Regulation No 1272/2008/EC.

2.2 **Label elements**

**Labelling according to Regulation (EC) No 1272/2008 (CLP)**
not required

**Signal word** not required
Pyruvic acid sodium salt ≥99 % for biochemistry

article number: 8793

2.3 Other hazards
There is no additional information.

SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>Sodium pyruvate</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC number</td>
<td>204-024-4</td>
</tr>
<tr>
<td>CAS number</td>
<td>113-24-6</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C₃H₃NaO₃</td>
</tr>
<tr>
<td>Molar mass</td>
<td>110 g/mol</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes
Take off contaminated clothing.

Following inhalation
Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact
Rinse skin with water/shower. In all cases of doubt, or when symptoms persist, seek medical advice.

Following eye contact
Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

Following ingestion
Rinse mouth. Call a doctor if you feel unwell.

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

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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Co-ordinate fire-fighting measures to the fire surroundings
water spray, foam, dry extinguishing powder, carbon dioxide (CO₂)
Unsuitable extinguishing media
water jet

5.2 Special hazards arising from the substance or mixture
Combustible.

Hazardous combustion products
In case of fire may be liberated: carbon monoxide (CO), carbon dioxide (CO₂)

5.3 Advice for firefighters
Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Do not breathe dust.

6.2 Environmental precautions
Keep away from drains, surface and ground water.

6.3 Methods and material for containment and cleaning up
Advice on how to contain a spill
Covering of drains.

Advice on how to clean up a spill
Take up mechanically.

Other information relating to spills and releases
Place in appropriate containers for disposal.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid dust formation.

Advice on general occupational hygiene
Wash hands after use. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities
Store in a dry place. Keep container tightly closed.

Incompatible substances or mixtures
Observe hints for combined storage.

Consideration of other advice
• Ventilation requirements
Use local and general ventilation.

• Specific designs for storage rooms or vessels
Recommended storage temperature: 15 – 25 °C.

7.3 Specific end use(s)
No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

<table>
<thead>
<tr>
<th>Country</th>
<th>Name of agent</th>
<th>CAS No</th>
<th>Notation</th>
<th>Identifier</th>
<th>TWA [mg/m³]</th>
<th>STEL [mg/m³]</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>IE</td>
<td>dusts non-specific</td>
<td></td>
<td>i</td>
<td>OELV</td>
<td>10</td>
<td></td>
<td>S.I. No. 619 of 2001</td>
</tr>
<tr>
<td>IE</td>
<td>dusts non-specific</td>
<td></td>
<td>r</td>
<td>OELV</td>
<td>4</td>
<td></td>
<td>S.I. No. 619 of 2001</td>
</tr>
</tbody>
</table>

Notation
i  Inhalable fraction
r  Respirable fraction
STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection

Use safety goggle with side protection.

Skin protection

• hand protection
Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374.

• type of material
NBR (Nitrile rubber)

• material thickness
>0,11 mm

• breakthrough times of the glove material
>480 minutes (permeation: level 6)
• other protection measures
Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection

Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P1 (filters at least 80 % of airborne particles, colour code: White).

Environmental exposure controls
Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance
Physical state solid (powder)
Colour white
Odour odourless
Odour threshold No data available

Other physical and chemical parameters
pH (value) 5.5 – 6.5 (water: 100 g/l, 20 °C)
Melting point/freezing point 220 – 230 °C
Initial boiling point and boiling range This information is not available.
Flash point not applicable
Evaporation rate no data available
Flammability (solid, gas) These information are not available
Explosive limits
• lower explosion limit (LEL) this information is not available
• upper explosion limit (UEL) this information is not available
Explosion limits of dust clouds these information are not available
Vapour pressure 0 Pa at 20 °C
Density 1.781 g/cm³ at 20 °C
Vapour density This information is not available.
Relative density Information on this property is not available.
Solubility(ies)
Water solubility 1.000.000 mg/l at 25 °C
Partition coefficient n-octanol/water (log KOW) -5.05 (25 °C) (ECHA)
Auto-ignition temperature
Information on this property is not available.

Decomposition temperature
236,8 °C at 1.013 hPa (ECHA)

Viscosity
not relevant  (solid matter)

Explosive properties
Shall not be classified as explosive

Oxidising properties
none

9.2 Other information
There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity
The product in the delivered form is not dust explosion capable; the enrichment of fine dust however leads to the danger of dust explosion.

10.2 Chemical stability
The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions
Violent reaction with: Strong oxidiser

10.4 Conditions to avoid
Keep away from heat. Decomposition takes place from temperatures above: 236,8 °C at 1.013 hPa.

10.5 Incompatible materials
There is no additional information.

10.6 Hazardous decomposition products
Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Shall not be classified as acutely toxic.

<table>
<thead>
<tr>
<th>Exposure route</th>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>LD50</td>
<td>3.533</td>
<td>mouse</td>
<td>ECHA</td>
</tr>
</tbody>
</table>

Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation
Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitisation
Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties
Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

Specific target organ toxicity - single exposure
Shall not be classified as a specific target organ toxicant (single exposure).
• **Specific target organ toxicity - repeated exposure**
  Shall not be classified as a specific target organ toxicant (repeated exposure).

**Aspiration hazard**
Shall not be classified as presenting an aspiration hazard.

**Symptoms related to the physical, chemical and toxicological characteristics**

**• If swallowed**
data are not available

**• If in eyes**
data are not available

**• If inhaled**
cough, pain, choking, and breathing difficulties

**• If on skin**
data are not available

**Other information**
None

---

**SECTION 12: Ecological information**

**12.1 Toxicity**
acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

**12.2 Process of degradability**
The substance is readily biodegradable.
Theoretical Oxygen Demand: 0,6543 mg/mg
Theoretical Carbon Dioxide: 1,2 mg/mg

<table>
<thead>
<tr>
<th>Process</th>
<th>Degradation rate</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>oxygen depletion</td>
<td>81,6 %</td>
<td>28 d</td>
</tr>
</tbody>
</table>

**12.3 Bioaccumulative potential**
Does not significantly accumulate in organisms.

n-octanol/water (log KOW) -5,05 (25 °C)

**12.4 Mobility in soil**
Data are not available.

**12.5 Results of PBT and vPvB assessment**
Data are not available.

**12.6 Other adverse effects**
Data are not available.
SECTION 13: Disposal considerations

13.1 Waste treatment methods

Consult the appropriate local waste disposal expert about waste disposal.

**Sewage disposal-relevant information**

Do not empty into drains.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number

(not subject to transport regulations)

14.2 UN proper shipping name

not relevant

14.3 Transport hazard class(es)

Class

not relevant

14.4 Packing group

not relevant not assigned to a packing group

14.5 Environmental hazards

none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 Special precautions for user

There is no additional information.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

- **Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)**
  Not subject to ADR, RID and ADN.

- **International Maritime Dangerous Goods Code (IMDG)**
  Not subject to IMDG.

- **International Civil Aviation Organization (ICAO-IATA/DGR)**
  Not subject to ICAO-IATA.
15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant provisions of the European Union (EU)

- Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)
  Not listed.
- Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)
  Not listed.
- Regulation 850/2004/EC on persistent organic pollutants (POP)
  Not listed.
- Restrictions according to REACH, Annex XVII
  Not listed
- Restrictions according to REACH, Title VIII
  None.
- List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list
  Not listed
- Seveso Directive

<table>
<thead>
<tr>
<th>2012/18/EU (Seveso III)</th>
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</thead>
<tbody>
<tr>
<td>No</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>not assigned</td>
</tr>
</tbody>
</table>

- Directive 75/324/EEC relating to aerosol dispensers

  **Filling batch**

<table>
<thead>
<tr>
<th>VOC content</th>
<th>0 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 g/l</td>
<td></td>
</tr>
</tbody>
</table>

  Directive on industrial emissions (VOCs, 2010/75/EU)

<table>
<thead>
<tr>
<th>VOC content</th>
<th>0 %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 g/l</td>
<td></td>
</tr>
</tbody>
</table>

- Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II
  Not listed
- Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)
  Not listed
- Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)
  Not listed
- Regulation 98/2013/EU on the marketing and use of explosives precursors
  Not listed
### National inventories

Substance is listed in the following national inventories:

<table>
<thead>
<tr>
<th>Country</th>
<th>National inventories</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>AICS</td>
<td>substance is listed</td>
</tr>
<tr>
<td>CA</td>
<td>DSL</td>
<td>substance is listed</td>
</tr>
<tr>
<td>CN</td>
<td>IECSC</td>
<td>substance is listed</td>
</tr>
<tr>
<td>EU</td>
<td>ECSI</td>
<td>substance is listed</td>
</tr>
<tr>
<td>EU</td>
<td>REACH Reg.</td>
<td>substance is listed</td>
</tr>
<tr>
<td>JP</td>
<td>CSCL-ENCS</td>
<td>substance is listed</td>
</tr>
<tr>
<td>KR</td>
<td>KECI</td>
<td>substance is listed</td>
</tr>
<tr>
<td>NZ</td>
<td>NZIoC</td>
<td>substance is listed</td>
</tr>
<tr>
<td>PH</td>
<td>PICCS</td>
<td>substance is listed</td>
</tr>
<tr>
<td>TW</td>
<td>TCSI</td>
<td>substance is listed</td>
</tr>
<tr>
<td>US</td>
<td>TSCA</td>
<td>substance is listed</td>
</tr>
</tbody>
</table>

**Legend**

- AICS: Australian Inventory of Chemical Substances
- CSCL-ENCS: List of Existing and New Chemical Substances (CSCL-ENCS)
- DSL: Domestic Substances List (DSL)
- ECSI: EC Substance Inventory (EINECS, ELINCS, NLP)
- IECSC: Inventory of Existing Chemical Substances Produced or Imported in China
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- REACH Reg.: REACH registered substances
- TCSI: Taiwan Chemical Substance Inventory
- TSCA: Toxic Substance Control Act

### 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

### SECTION 16: Other information

#### Indication of changes (revised safety data sheet)

<table>
<thead>
<tr>
<th>Section</th>
<th>Former entry (text/value)</th>
<th>Actual entry (text/value)</th>
<th>Safety-relevant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Registration number (REACH): This information is not available.</td>
<td>Registration number (REACH): It is not required to list the identified uses because the substance is not subject to registration according to REACH (&lt; 1 t/a)</td>
<td>yes</td>
</tr>
<tr>
<td>14.4</td>
<td>Packing group: not relevant</td>
<td>Packing group: not relevant not assigned to a packing group</td>
<td>yes</td>
</tr>
<tr>
<td>14.8</td>
<td></td>
<td>• International Civil Aviation Organization (ICAO-IATA/DGR): Not subject to ICAO-IATA.</td>
<td>yes</td>
</tr>
</tbody>
</table>
Safety data sheet
according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU

Pyruvic acid sodium salt  ≥99 % for biochemistry
article number: 8793

Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADN</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)</td>
</tr>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</td>
</tr>
<tr>
<td>CLP</td>
<td>Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures</td>
</tr>
<tr>
<td>CMR</td>
<td>Carcinogenic, Mutagenic or toxic for Reproduction</td>
</tr>
<tr>
<td>DGR</td>
<td>Dangerous Goods Regulations (see IATA/DGR)</td>
</tr>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>ELINCS</td>
<td>European List of Notified Chemical Substances</td>
</tr>
<tr>
<td>GHS</td>
<td>&quot;Globally Harmonized System of Classification and Labelling of Chemicals&quot; developed by the United Nations</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>IATA/DGR</td>
<td>Dangerous Goods Regulations (DGR) for the air transport (IATA)</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IMDG</td>
<td>International Maritime Dangerous Goods Code</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval</td>
</tr>
<tr>
<td>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>NLP</td>
<td>No-Longer Polymer</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>REACH</td>
<td>Registration, Evaluation, Authorisation and Restriction of Chemicals</td>
</tr>
<tr>
<td>RID</td>
<td>Règlement concernant le transport international ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)</td>
</tr>
<tr>
<td>STEL</td>
<td>short-term exposure limit</td>
</tr>
<tr>
<td>SVHC</td>
<td>Substance of Very High Concern</td>
</tr>
<tr>
<td>TWA</td>
<td>time-weighted average</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compounds</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>

Key literature references and sources for data
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

List of relevant phrases (code and full text as stated in chapter 2 and 3)
not relevant.
Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.