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

1.1 Product identifier
Identification of the substance: Rosmarinic acid
Article number: N816
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: none
CAS number: 20283-92-5

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

1.4 Emergency telephone number
Emergency information service: Poison Centre Munich: +49/(0)89 19240

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

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>Rosmarinic acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS number</td>
<td>20283-92-5</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C₁₈H₁₆O₈</td>
</tr>
<tr>
<td>Molar mass</td>
<td>360.3 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
Symptoms and effects are not known to date

4.3 Indication of any immediate medical attention and special treatment needed
none

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
No special measures are necessary.

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

6.3 Methods and material for containment and cleaning up
Advises on how to contain a spill
Covering of drains.
Advises on how to clean up a spill
Take up mechanically.
Other information relating to spills and releases
Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Provision of sufficient ventilation. Avoid dust formation.
Advice on general occupational hygiene
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. Keep in a cool place.
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: 4 °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)
Data are not available.

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: whitish - light beige
- Odour: this information is not available
- Odour threshold: No data available

**Other physical and chemical parameters**
- pH (value): This information is not available.
- Melting point/freezing point: 170 – 175 °C
- Initial boiling point and boiling range: 694 °C
- Flash point: 254 °C
- 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**: This information is not available.
- Density: 0,91 g/cm³
- Vapour density: This information is not available.
- Relative density: Information on this property is not available.

**Solubility(ies)**
- Water solubility: 15 mg/ml
- Solubility in alcohol: Soluble.
- Partition coefficient: This information is not available.
- n-octanol/water (log KOW): Information on this property is not available.
- Auto-ignition temperature: no data available
- Decomposition temperature: not relevant (solid matter)
- Viscosity: none
- 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
There are no specific conditions known which have to be avoided.

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.

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
Rosmarinic acid ROTICHROM® HPLC
article number: N816

• If inhaled
cough, 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
Theoretical Oxygen Demand: 1,598 mg/mg
Theoretical Carbon Dioxide: 2,198 mg/mg

12.3 Bioaccumulative potential
Data are not available.

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.

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

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>14.1</td>
<td>UN number</td>
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<tr>
<td>14.2</td>
<td>UN proper shipping name</td>
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<tr>
<td>14.3</td>
<td>Transport hazard class(es)</td>
</tr>
<tr>
<td></td>
<td>Class</td>
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<tr>
<td>14.4</td>
<td>Packing group</td>
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<tr>
<td>14.5</td>
<td>Environmental hazards</td>
</tr>
<tr>
<td>14.6</td>
<td>Special precautions for user</td>
</tr>
<tr>
<td>14.7</td>
<td>Transport in bulk according to Annex II of MARPOL and the IBC Code</td>
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<tr>
<td>14.8</td>
<td>Information for each of the UN Model Regulations</td>
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<td></td>
<td>• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)</td>
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<tr>
<td></td>
<td>• International Maritime Dangerous Goods Code (IMDG)</td>
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<td></td>
<td>• International Civil Aviation Organization (ICAO-IATA/DGR)</td>
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</table>

## SECTION 15: Regulatory information

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
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<tbody>
<tr>
<td>15.1</td>
<td>Safety, health and environmental regulations/legislation specific for the substance or mixture</td>
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<tr>
<td></td>
<td>Relevant provisions of the European Union (EU)</td>
</tr>
<tr>
<td></td>
<td>• Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)</td>
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<tr>
<td></td>
<td>• Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)</td>
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<tr>
<td></td>
<td>• Regulation 850/2004/EC on persistent organic pollutants (POP)</td>
</tr>
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<td></td>
<td>• Restrictions according to REACH, Annex XVII</td>
</tr>
<tr>
<td></td>
<td>• Restrictions according to REACH, Title VIII</td>
</tr>
<tr>
<td></td>
<td>• List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list</td>
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</table>
• Seveso Directive

2012/18/EU (Seveso III)

<table>
<thead>
<tr>
<th>No</th>
<th>Dangerous substance/hazard categories</th>
<th>Qualifying quantity (tonnes) for the application of lower and upper-tier requirements</th>
<th>Notes</th>
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<tbody>
<tr>
<td></td>
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</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

Regulation 111/2005/EC laying down rules for the monitoring of trade between the Community and third countries in drug precursors

not listed

15.2 Chemical Safety Assessment

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

SECTION 16: Other information

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>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>MARPOL</td>
<td>International Convention for the Prevention of Pollution from Ships (abbr. of &quot;Marine Pollutant&quot;)</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
</tbody>
</table>
Abbr. | Descriptions of used abbreviations
--- | ---
REACH | Registration, Evaluation, Authorisation and Restriction of Chemicals
RID | Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
SVHC | Substance of Very High Concern
vPvB | very Persistent and very Bioaccumulative

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.