SECTION 1: Identification

1.1 Product identifier

Identification of the substance: Agarose

Article number: K297

Registration number (REACH): The substance does not require registration according to Regulation (EC) No 1907/2006 [REACH]

EC number: 232-731-8

CAS number: 9012-36-6

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>Poison and Drug Information Services Foothills Medical Centre 1403</td>
<td>29th Street N.W.</td>
<td>T2N 2T9 Calgary</td>
<td>+1 403 944 1414</td>
<td></td>
</tr>
</tbody>
</table>

Emergency information service: +49/(0)89 19240

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification Hazardous Products Regulations

This substance does not meet the criteria for classification in accordance with Regulation No 1272/2008/EC. This substance does not meet the criteria for classification.

2.2 Label elements

Labeling GHS: not required

Signal word: not required
SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance: Agarose
EC number: 232-731-8
CAS number: 9012-36-6

SECTION 4: First-aid measures

4.1 Description of first-aid measures

General notes
Take off contaminated clothing.

Following inhalation
Provide fresh air.

Following skin contact
Rinse skin with water/shower.

Following eye contact
Rinse cautiously with water for several minutes.

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

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

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

SECTION 5: Fire-fighting 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
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 before breaks and after work.

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

Incompatible substances or mixtures
Observe compatible storage of chemicals.

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.
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, color 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)
- Color: whitish yellow
- Odor: odorless
- Odor threshold: No data available

**Other physical and chemical parameters**
- pH (value): This information is not available.
- Melting point/freezing point: 80 – 95 °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
- Vapor pressure: This information is not available.
- Density: This information is not available.
- Vapor density: This information is not available.
- Relative density: Information on this property is not available.

**Solubility(ies)**
- Water solubility: ~ 10 g/l at 80 °C

**Partition coefficient**
- n-octanol/water (log KOW): This information is not available.
- Auto-ignition temperature: Information on this property is not available.
- Decomposition temperature: no data available
- Viscosity: not relevant (solid matter)
- Explosive properties: Shall not be classified as explosive
- Oxidizing properties: none

9.2 Other information
- There is no additional information.
SECTION 10: Stability and reactivity

10.1 Reactivity
Dust explosibility.

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
No known hazardous reactions

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 sensitization
Shall not be classified as a respiratory or skin sensitizer.

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
diarrhoea

• If in eyes
data are not available

• If inhaled
Inhalation of dust may cause irritation of the respiratory system
• If on skin
Frequently or prolonged contact with skin may cause dermal irritation

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
Data are not available.

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.

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.

### SECTION 15: Regulatory information

15.1 **Safety, health and environmental regulations specific for the product in question**

#### National regulations (United States)

**Toxic Substance Control Act (TSCA)**
Not listed.

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)
Not listed.

**CERCLA**

List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)
Not listed.

**Clean Air Act**
Not listed.

**New Jersey Worker and Community Right to Know Act**
Not listed.

**California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987**
Not listed.

**Drug precursors**
Not listed.

**Industry or sector specific available guidance(s)**

**NPCA-HMIS® III**

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic</td>
<td>/</td>
<td>none</td>
</tr>
<tr>
<td>Health</td>
<td>0</td>
<td>no significant risk to health</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
<td>material that must be preheated before ignition can occur</td>
</tr>
<tr>
<td>Physical hazard</td>
<td>0</td>
<td>material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive</td>
</tr>
</tbody>
</table>
Agarose High Resolution ROTI® Garose for small fragments

text of the table:

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal protection</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

**NFPA® 704**


<table>
<thead>
<tr>
<th>Category</th>
<th>Degree of hazard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>1</td>
<td>material that must be preheated before ignition can occur</td>
</tr>
<tr>
<td>Health</td>
<td>0</td>
<td>material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material</td>
</tr>
<tr>
<td>Instability</td>
<td>0</td>
<td>material that is normally stable, even under fire conditions</td>
</tr>
</tbody>
</table>

**National regulations Canada:**

**Domestic Substances List (DSL)**

Substance is 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>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
- DSL: Domestic Substances List (DSL)
- ECSI: EC Substance Inventory (ELINCS, 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
- 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, including date of preparation or last revision**

**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): The substance does not require registration according to Regulation (EC) No 1907/2006 (REACH)</td>
<td>yes</td>
</tr>
<tr>
<td>2.1</td>
<td>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.</td>
<td>Classification Hazardous Products Regulations: This substance does not meet the criteria for classification in accordance with Regulation No 1272/2008/EC. This substance does not meet the criteria for classification.</td>
<td>yes</td>
</tr>
<tr>
<td>8.1</td>
<td>Occupational exposure limit values (Workplace Exposure Limits)</td>
<td>Occupational exposure limit values (Workplace Exposure Limits): Data are not available.</td>
<td>yes</td>
</tr>
<tr>
<td>8.1</td>
<td>Occupational exposure limit values (Workplace Exposure Limits): change in the listing (table)</td>
<td>Occupational exposure limit values (Workplace Exposure Limits):</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>

**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>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)</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>“Globally Harmonized System of Classification and Labelling of Chemicals” 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 “Marine Pollutant”)</td>
</tr>
<tr>
<td>NLP</td>
<td>No-Longer Polymer</td>
</tr>
</tbody>
</table>
Abbr. | Descriptions of used abbreviations
--- | ---
PBT | Persistent, Bioaccumulative and Toxic
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)
vPvB | very Persistent and very Bioaccumulative

Key literature references and sources for data
- Hazardous Products Regulations (HPR)
- UN Recommendations on the Transport of Dangerous Goods
- 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.