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

1.1 Product identifier

Identification of the substance: Astra blue
Article number: 5165
Registration number (REACH): This information is not available.
EC number: 280-054-1
CAS number: 82864-57-1

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)

<table>
<thead>
<tr>
<th>Classification acc. to GHS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Section</strong></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>3.2</td>
</tr>
<tr>
<td>3.3</td>
</tr>
<tr>
<td>3.8R</td>
</tr>
</tbody>
</table>

2.2 Label elements

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

<table>
<thead>
<tr>
<th>Signal word</th>
<th>Warning</th>
</tr>
</thead>
</table>
Safety data sheet  
according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU 

Astra blue  FM (C.I. 48048) for microscopy  
article number: 5165

Pictograms

Hazard statements

H315  Causes skin irritation  
H319  Causes serious eye irritation  
H335  May cause respiratory irritation  

Precautionary statements

Precautionary statements - prevention

P261  Avoid breathing dust.  
P280  Wear protective gloves/eye protection.  

Precautionary statements - response

P302+P352  IF ON SKIN: Wash with plenty of soap and water.  
P305+P351+P338  IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  

Labelling of packages where the contents do not exceed 125 ml  
Signal word: Warning  
Symbol(s)

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>Astra blue</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC number</td>
<td>280-054-1</td>
</tr>
<tr>
<td>CAS number</td>
<td>82864-57-1</td>
</tr>
<tr>
<td>Molecular formula</td>
<td>C_{47}H_{52}CuN_{14}O_{6}S_{3}</td>
</tr>
<tr>
<td>Molar mass</td>
<td>1.069 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 case of skin irritation, consult a physician.

Following eye contact
Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

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

4.2 Most important symptoms and effects, both acute and delayed
Irritation, Cough, Dyspnoea, Nausea

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
None.

Hazardous combustion products
In case of fire may be liberated: nitrogen oxides (NOx), carbon monoxide (CO), carbon dioxide (CO2), sulphur oxides (SOx)

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
Use personal protective equipment as required. Avoid contact with skin and eyes. 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

Advices on how to contain a spill
Covering of drains.

Advices on how to clean up a spill
Take up mechanically. Control of dust.

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.

• Measures to prevent fire as well as aerosol and dust generation
Removal of dust deposits.

Advice on general occupational hygiene
Wash hands before breaks and after work. 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.

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)
Notation

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. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

• 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, crystalline)
Colour  dark blue
Odour  faintly perceptible
### Other physical and chemical parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH (value)</td>
<td>4,9 (water: 10 g/l, 20 °C)</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>not determined</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>These information are not available</td>
</tr>
<tr>
<td><strong>Explosive limits</strong></td>
<td></td>
</tr>
<tr>
<td>• lower explosion limit (LEL)</td>
<td>this information is not available</td>
</tr>
<tr>
<td>• upper explosion limit (UEL)</td>
<td>this information is not available</td>
</tr>
<tr>
<td>Explosion limits of dust clouds</td>
<td>these information are not available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Density</td>
<td>(~1 \text{ g/cm}^3)</td>
</tr>
<tr>
<td>Vapour density</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>Information on this property is not available.</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>soluble</td>
</tr>
<tr>
<td><strong>Partition coefficient</strong></td>
<td></td>
</tr>
<tr>
<td>n-octanol/water (log KOW)</td>
<td>This information is not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Information on this property is not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>not relevant (solid matter)</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Shall not be classified as explosive</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>none</td>
</tr>
</tbody>
</table>

#### 9.2 Other information

There is no additional information.

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

This material is not reactive under normal ambient conditions.

#### 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
Causes skin irritation.

Serious eye damage/eye irritation
Causes serious eye irritation.

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
  May cause respiratory irritation.

• 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
  Irritating to eyes

• If inhaled
  Irritation to respiratory tract

• If on skin
  causes skin 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
Theoretical Oxygen Demand with nitrification: 1,844 mg/mg
Theoretical Oxygen Demand: 1,527 mg/mg
Theoretical Carbon Dioxide: 1,935 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
This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

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

14.1 UN number (not subject to transport regulations)

14.2 UN proper shipping name not relevant

14.3 Transport hazard class(es) not relevant

Class -

14.4 Packing group not relevant
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/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.

  Not listed.

- **Restrictions according to REACH, Annex XVII**

<table>
<thead>
<tr>
<th>Name of substance</th>
<th>CAS No</th>
<th>Wt%</th>
<th>Type of registration</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Astra blue</td>
<td></td>
<td>100</td>
<td>1907/2006/EC annex XVII</td>
<td>3</td>
</tr>
</tbody>
</table>

- **List of substances subject to authorisation (REACH, Annex XIV)**
  Not listed

- **Seveso Directive**

<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>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>not assigned</td>
<td></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

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>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>PH</td>
<td>PICCS</td>
<td>substance is listed</td>
</tr>
<tr>
<td>TW</td>
<td>TCSI</td>
<td>substance is listed</td>
</tr>
</tbody>
</table>

Legend
AICS Australian Inventory of Chemical Substances
ECSI EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC Inventory of Existing Chemical Substances Produced or Imported in China
PICCS Philippine Inventory of Chemicals and Chemical Substances
TCSI Taiwan Chemical Substance Inventory

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>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>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>
</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)

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H315</td>
<td>causes skin irritation</td>
</tr>
<tr>
<td>H319</td>
<td>causes serious eye irritation</td>
</tr>
<tr>
<td>H335</td>
<td>may cause respiratory irritation</td>
</tr>
</tbody>
</table>

### 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.