Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision date: 25.02.2020
Version: 6.3
Print date: 25.02.2020

SECTION 1: Identification

Product identifier

Trade name/designation: Bromothymol blue ACS
Product No.: 0431
Synonyms: none
CAS No.: 76-59-5
Other means of identification:

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

Recommended Use: For Further Manufacturing Use Only
Uses advised against: Not for Human or Animal Drug Use

Details of the supplier of the safety data sheet

Supplier

VWR International LLC
100 Matsonford Road Radnor Corporate Center,
Building One, Suite 200 P. O. Box 6660
Radnor, PA 19087

Telephone: +1-800-932-5000 toll-free within US/Canada
+1-610-386-1700
Telefax: +1-610-728-2103

Emergency phone number

Telephone: +1-800-424-9300 (Chemtrec, 24 hrs/day, 7 days/week, USA)

Preparation Information

VWR International - Product Information Compliance
E-mail: sds@vwr.com

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910.1200 (OSHA HCS)

This substance is classified as not hazardous according to regulation 29 CFR 1910.1200 (OSHA HCS)
2.2 Label elements

Labelling in accordance with 29 CFR 1910.1200 (OSHA HCS)

According to regulation 29 CFR 1910.1200 (OSHA HCS) the product does not have to be labelled.

Hazards not otherwise classified (HNOC)
Not regulated

SECTION 3: Composition / information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Bromothymol blue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular formula</td>
<td>C27H28Br2O5S</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>624.38 g/mol</td>
</tr>
<tr>
<td>CAS No.</td>
<td>76-59-5</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1 General information

When in doubt or if symptoms are observed, get medical advice. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

In case of inhalation
Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. In case of respiratory tract irritation, consult a physician.

In case of skin contact
After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. In case of skin reactions, consult a physician.

After eye contact
In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

In case of ingestion
If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting. Give nothing to eat or drink.

4.2 Most important symptoms/effects, acute and delayed
no data available

4.3 Indication of any immediate medical attention and special treatment needed
no data available

4.4 Self-protection of the first aider
First aider: Pay attention to self-protection!

4.5 Information to physician
no data available
SECTION 5: Fire fighting measures

5.1 Extinguishing media

Suitable extinguishing media
The product itself does not burn.
Co-ordinate fire-fighting measures to the fire surroundings.

Extinguishing media which must not be used for safety reasons
no restriction

5.2 Specific hazards arising from the chemical
In case of fire may be liberated:
Carbon monoxide
Carbon dioxide (CO2)
Hydrogen bromide (HBr)
Sulphur oxides

5.3 Advice for firefighters
DO NOT fight fire when fire reaches explosives.
Protective equipment and precautions for firefighters
Wear a self-contained breathing apparatus and chemical protective clothing.

Additional information
Do not allow run-off from fire-fighting to enter drains or water courses.
Do not inhale explosion and combustion gases.
Use water spray/stream to protect personnel and to cool endangered containers.
In case of fire: Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation.

6.2 Environmental precautions
Do not allow to enter into surface water or drains.

6.3 Methods and material for containment and cleaning up
Spilled product must never be returned to the original container for recycling. Clean contaminated articles and floor according to the environmental legislation. Collect in closed and suitable containers for disposal.

6.4 Additional information
Clear spills immediately.
SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid:
- Inhalation
- Avoid contact with eyes and skin.
- Use extractor hood (laboratory).
- If handled uncovered, arrangements with local exhaust ventilation have to be used.
- If local exhaust ventilation is not possible or not sufficient, the entire working area must be ventilated by technical means.
- Protect from moisture.

7.2 Conditions for safe storage, including any incompatibilities
- Recommended storage temperature: Store between 15 °C and 30 °C.
- Keep container tightly closed and in a well-ventilated place.

7.3 Specific end use(s)
- no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
- Does not contain substances above concentration limits fixing an occupational exposure limit.

8.2 Engineering controls

- Appropriate engineering controls
  - Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

- Personal protection equipment (PPE)
  - Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

  - Eye/face protection
    - Eye glasses with side protection

  - Skin protection
    - Wear suitable gloves. When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Check leak tightness/impermeability prior to use.

    **By short-term hand contact**
    - Suitable material: NBR (Nitrile rubber)
    - Thickness of the glove material: 0,12 mm
    - Breakthrough time (maximum wearing time): > 480 min

    **By long-term hand contact**
    - Suitable material: NBR (Nitrile rubber)
    - Thickness of the glove material: 0,38 mm
    - Breakthrough time (maximum wearing time): > 480 min

- Respiratory protection
  - Usually no personal respirative protection necessary.
Additional information
Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Environmental exposure controls	no data available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
(a) Appearance
   Physical state: solid
   Color: light brown
(b) Odour: no data available
(c) Odour threshold: no data available

Safety relevant basic data

(d) pH: no data available
(e) Melting point/freezing point: 202-204 °C
(f) Initial boiling point and boiling range: no data available
(g) Flash point: no data available
(h) Evaporation rate: no data available
(i) Flammability (solid, gas): not applicable
(j) Flammability or explosive limits
   Lower explosion limit: no data available
   Upper explosion limit: no data available
(k) Vapour pressure: no data available
(l) Vapour density: no data available
(m) Relative density: no data available
(n) Solubility(ies)
   Water solubility (g/L): unsoluble (20 °C)
   Soluble (g/L) in Ethanol: no data available
(o) Partition coefficient: n-octanol/water: no data available
(p) Auto-ignition temperature: no data available
(q) Decomposition temperature: no data available
(r) Viscosity
   Kinematic viscosity: no data available
   Dynamic viscosity: no data available
(s) Explosive properties: not applicable
(t) Oxidising properties: not applicable

9.2 Other information
Bulk density: no data available
Refraction index: no data available
Dissociation constant: no data available
Surface tension: no data available
Henry's Law Constant: no data available
SECTION 10: Stability and reactivity

10.1 Reactivity
no data available

10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
no data available

10.6 Hazardous decomposition products
no data available

10.7 Additional information
no data available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute effects
Acute oral toxicity:
no data available

Acute dermal toxicity:
no data available

Acute inhalation toxicity:
no data available

Irritant and corrosive effects
Primary irritation to the skin:
not applicable

Irritation to eyes:
not applicable

Irritation to respiratory tract:
not applicable
Respiratory or skin sensitization
In case of skin contact: not sensitising
In case of inhalation: not sensitising

STOT-single exposure
not applicable

STOT-repeated exposure
not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
Carcinogenicity
The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>no data available</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Germ cell mutagenicity
No indications of human germ cell mutagenicity exist.

Reproductive toxicity
No indications of human reproductive toxicity exist.

Aspiration hazard
not applicable

Other adverse effects
no data available

Additional information
no data available

SECTION 12: Ecological information

12.1 Ecotoxicity

Fish toxicity:
no data available

Daphnia toxicity:
no data available

Algae toxicity:
no data available

Bacteria toxicity:
no data available
12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
Partition coefficient: n-octanol/water: no data available

12.4 Mobility in soil:
no data available

12.5 Results of PBT/vPvB assessment
no data available

12.6 Other adverse effects
no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Appropriate disposal / Product
Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: no data available

Appropriate disposal / Package
Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

Additional information
no data available

SECTION 14: Transport information

Land transport (DOT)
No dangerous good in sense of this transport regulation.

Sea transport (IMDG)
No dangerous good in sense of this transport regulation.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code not relevant

Air transport (ICAO-TI / IATA-DGR)
No dangerous good in sense of this transport regulation.
SECTION 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

SARA 313 Components
Not listed.

Massachusetts Right To Know Components
Not listed.

Pennsylvania Right To Know Components
Not listed.

New Jersey Right To Know Components
Not listed.

California Prop. 65 Components
Not listed.
SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
DOT - Department of Transportation
IARC - International Agency for Research on Cancer
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
ICAO-TI - International Civil Aviation Organization-Technical Instructions
IMDG - International Maritime Code for Dangerous Goods
LTV - Long Term Value
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety & Health Administration
PBT - Persistent, Bioaccumulative and Toxic
PEL - Permissible Exposure Limit
STV - Short Term Value
SVHC - Substances of Very High Concern
TDG - Transport of Dangerous Goods
TLV - Threshold Limit Value
vPvB - very Persistent, very Bioaccumulative

Additional information

Indication of changes: general update

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guidance. The information in this document is based on the present state knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International and his Affiliates shall not be held liable for any damage resulting from handling.