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

1.1 Product identifier

Identification of the substance
Trypan blue (C.I. 23850) for microscopy

Article number
CN76

CAS number
72-57-1

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

Relevant identified uses:
Laboratory chemical
Laboratory and analytical use

Uses advised against:
Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household).

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>NSW Poisons Information Centre Childrens Hospital</td>
<td>Hawkesbury Road</td>
<td>2145 Westmead, NSW</td>
<td>131126</td>
<td></td>
</tr>
</tbody>
</table>

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

<table>
<thead>
<tr>
<th>Section</th>
<th>Hazard class</th>
<th>Category</th>
<th>Hazard class and category</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6</td>
<td>Carcinogenicity</td>
<td>1B</td>
<td>Carc. 1B</td>
<td>H350</td>
</tr>
</tbody>
</table>

For full text of abbreviations: see SECTION 16

2.2 Label elements

Labelling
Signal word  Danger

Pictograms

GHS08

Hazard statements
H350  May cause cancer

Precautionary statements

Precautionary statements - prevention
P202  Do not handle until all safety precautions have been read and understood
P280  Wear protective gloves/protective clothing/eye protection/face protection

Precautionary statements - response
P308+P313  IF exposed or concerned: Get medical advice/attention

Precautionary statements - storage
P405  Store locked up

Precautionary statements - disposal
P501  Dispose of contents/container to industrial combustion plant

For professional users only

2.3  Other hazards

Results of PBT and vPvB assessment
According to the results of its assessment, this substance is not a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1  Substances

Name of substance  Trypan blue
Molecular formula  \( \text{C}_{34}\text{H}_{24}\text{N}_{6}\text{Na}_{4}\text{O}_{14}\text{S}_{4} \)
Molar mass  960.8 g/mol
CAS No  72-57-1
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.

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

Following ingestion
In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

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

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 firefighting measures to the fire surroundings
water, foam, alcohol resistant foam, dry extinguishing powder, ABC-powder

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: Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO₂), Sulphur oxides (SOx)

5.3 Advice for firefighters
In case of fire and/or explosion do not breathe fumes. 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, eyes and clothes. 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. Take up mechanically.

Advice 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
Avoid exposure. 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.

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)
This information is 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. 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. The times are approximate values from measurements at 22 °C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• 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). P2 (filters at least 94 % 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>solid</td>
</tr>
<tr>
<td>Form</td>
<td>powder</td>
</tr>
<tr>
<td>Colour</td>
<td>dark blue</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>300 °C (slow decomposition)</td>
</tr>
<tr>
<td>Boiling point or initial boiling point and boiling range</td>
<td>not determined</td>
</tr>
<tr>
<td>Flammability</td>
<td>this material is combustible, but will not ignite readily</td>
</tr>
<tr>
<td>Lower and upper explosion limit</td>
<td>not determined</td>
</tr>
<tr>
<td>Flash point</td>
<td>not applicable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>not determined</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>&gt;300 °C</td>
</tr>
<tr>
<td>pH (value)</td>
<td>9.8 (in aqueous solution: 10 g/l, 20 °C)</td>
</tr>
<tr>
<td>Kinematic viscosity</td>
<td>not relevant</td>
</tr>
<tr>
<td>Water solubility</td>
<td>10 g/l at 25 °C</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>this information is not available</td>
</tr>
<tr>
<td>Partition coefficient n-octanol/water (log value)</td>
<td>this information is not available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>not determined</td>
</tr>
<tr>
<td>Density and/or relative density</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>not determined</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>information on this property is not available</td>
</tr>
<tr>
<td>Bulk density</td>
<td>~800 kg/m³</td>
</tr>
<tr>
<td>Particle characteristics</td>
<td>No data available.</td>
</tr>
<tr>
<td>Oxidising properties</td>
<td>none</td>
</tr>
</tbody>
</table>
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: >300 °C.

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

Classification acc. to GHS

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>Method</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>oral</td>
<td>LD50</td>
<td>6,200 mg/kg</td>
<td>rat</td>
<td></td>
<td>RTECS</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 sensitisier.

Germ cell mutagenicity
Shall not be classified as germ cell mutagenic.

Carcinogenicity
May cause cancer.
Reproductive toxicity
Shall not be classified 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
causes slight to moderate irritation

• If inhaled
Inhalation of dust may cause irritation of the respiratory system, cough, Dyspnoea

• If on skin
Frequently or prolonged contact with skin may cause dermal irritation, risk of absorption via the skin

• Other information
none

11.2 Endocrine disrupting properties
Not listed.

SECTION 12: Ecological information

12.1 Toxicity
Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

<table>
<thead>
<tr>
<th>Endpoint</th>
<th>Value</th>
<th>Species</th>
<th>Source</th>
<th>Exposure time</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50</td>
<td>&gt;1,000 mg/l</td>
<td>japanese ricefish/medaka (Oryzias latipes)</td>
<td>ECOTOX Database</td>
<td>48 h</td>
</tr>
</tbody>
</table>

Biodegradation
Data are not available.

12.2 Process of degradability
Theoretical Oxygen Demand with nitrification: 1.308 mg/mg
Theoretical Oxygen Demand: 1.151 mg/mg
Theoretical Carbon Dioxide: 1.557 mg/mg

12.3 Bioaccumulative potential
Data are not available.
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12.4 Mobility in soil
Data are not available.

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

12.6 Endocrine disrupting properties
Not listed.

12.7 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.

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 assigned

14.3 Transport hazard class(es)
not assigned

14.4 Packing group
not assigned

14.5 Environmental hazards
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 IMO instruments
The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Transport information
National regulations
Additional information (UN RTDG)
Not subject to transport regulations. UN RTDG

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

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information
Not subject to ICAO-IATA.
SECTION 15: Regulatory information

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

There is no additional information.

National regulations (Australia)

Australian Inventory of Chemical Substances (AICS)

Substance is listed.

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

National inventories

<table>
<thead>
<tr>
<th>Country</th>
<th>Inventory</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU</td>
<td>AIIC</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>MX</td>
<td>INSQ</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

AIIC    Australian Inventory of Industrial Chemicals
DSL     Domestic Substances List (DSL)
ECSI    EC Substance Inventory (EINECS, ELINCS, NLP)
IECS    Inventory of Existing Chemical Substances Produced or Imported in China
INSQ    National Inventory of Chemical Substances
KECI    Korea Existing Chemicals Inventory
NZIoC   New Zealand Inventory of Chemicals
PICCS   Philippine Inventory of Chemicals and Chemical Substances (PICCS)
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)

Alignment to regulation: Globally Harmonized System of Classification and Labelling of Chemicals ("Purple book").

Restructuring: section 9, section 14
### Safety data sheet
acc. to Safe Work Australia - Code of Practice

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**article number: CN76**

<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>2.1</td>
<td>Classification acc. to GHS: change in the listing (table)</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Precautionary statements - prevention: change in the listing (table)</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Labelling of packages where the contents do not exceed 125 ml: Signal word: Danger</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>2.3</td>
<td>Other hazards: There is no additional information.</td>
<td>Other hazards</td>
<td>yes</td>
</tr>
<tr>
<td>2.3</td>
<td>Results of PBT and vPvB assessment: According to the results of its assessment, this substance is not a PBT or a vPvB.</td>
<td>yes</td>
<td></td>
</tr>
</tbody>
</table>

### Abbreviations and acronyms

<table>
<thead>
<tr>
<th>Abbr.</th>
<th>Descriptions of used abbreviations</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)</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>LC50</td>
<td>Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval</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>NLP</td>
<td>No-Longer Polymer</td>
</tr>
<tr>
<td>PBT</td>
<td>Persistent, Bioaccumulative and Toxic</td>
</tr>
<tr>
<td>UN RTDG</td>
<td>UN Recommendations on the Transport of Dangerous Good</td>
</tr>
<tr>
<td>vPvB</td>
<td>Very Persistent and very Bioaccumulative</td>
</tr>
</tbody>
</table>
Safety data sheet
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Key literature references and sources for data
Safe Work Australia's Code of Practice for Labelling of Workplace Hazardous Chemicals (under WHS Regulations).

List of relevant phrases (code and full text as stated in section 2 and 3)

<table>
<thead>
<tr>
<th>Code</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>H350</td>
<td>May cause cancer.</td>
</tr>
</tbody>
</table>

Disclaimer
This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.