## 1 Identification

- **Product identifier**
  - **Trade name:** Trypan Blue (10X)
  - **Article number:** 400292

- **Application of the substance / the mixture**
  This product is for research use - Not for human or veterinary diagnostic or therapeutic use. It is the responsibility of the purchaser to determine suitability for other applications.

- **Details of the supplier of the safety data sheet**
  - **Manufacturer/Supplier:** Cayman Chemical Co.
    1180 E. Ellsworth Rd.
    Ann Arbor, MI 48108
    USA
  - **Information department:** Product safety department
  - **Emergency telephone number:**
    - During normal opening times: +1 (734) 971-3335
    - US/CANADA: 800-424-9300
    - Outside US/CANADA: 703-741-5970

## 2 Hazard(s) identification

- **Classification of the substance or mixture**
  - **GHS08 Health hazard**
  - Carc. 2 H351 Suspected of causing cancer.
  - Aquatic Acute 3 H402 Harmful to aquatic life.
  - Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- **Label elements**
  - **GHS label elements**
    The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**
    - GHS08

- **Signal word** Warning

(Contd. on page 2)
Trade name: Trypan Blue (10X)

- **Hazard statements**
  - H351 Suspected of causing cancer.
  - H402 Harmful to aquatic life.
  - H412 Harmful to aquatic life with long lasting effects.
- **Precautionary statements**
  - P201 Obtain special instructions before use.
  - P202 Do not handle until all safety precautions have been read and understood.
  - P273 Avoid release to the environment.
  - P280 Wear protective gloves/protective clothing/eye protection/face protection.
  - P308+P313 IF exposed or concerned: Get medical advice/attention.
  - P405 Store locked up.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**
  - **NFPA ratings (scale 0 - 4)**
  
<table>
<thead>
<tr>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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  - **HMIS-ratings (scale 0 - 4)**

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- **Other hazards**
  - **Results of PBT and vPvB assessment**
    - PBT: Not applicable.
    - vPvB: Not applicable.

### 3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
- **Description:** Mixture of the substances listed below with nonhazardous additions.

#### Dangerous components:

| CAS: 72-57-1 | RTECS: QJ6475000 | Trypan blue reagent | 0.4% |

#### Other ingredients:

| CAS: 7732-18-5 | RTECS: ZC0110000 | Water | 98.75% |
| CAS: 7647-14-5 | RTECS: VZ4725000 | Sodium chloride | 0.85% |

### 4 First-aid measures

- **Description of first aid measures**
  - **After inhalation:** Supply fresh air; consult doctor in case of complaints.
  - **After skin contact:** Generally the product does not irritate the skin.
  - **After eye contact:** Rinse opened eye for several minutes under running water.
  - **After swallowing:** If symptoms persist consult doctor.
5 Fire-fighting measures

- **Extinguishing media**
  - **Suitable extinguishing agents:**
    - Use fire fighting measures that suit the environment.
    - A solid water stream may be inefficient.

- **Special hazards arising from the substance or mixture** No further relevant information available.

- **Advice for firefighters**
  - **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.

- **Environmental precautions:**
  - Do not allow product to reach sewage system or any water course.
  - Inform respective authorities in case of seepage into water course or sewage system.
  - Dilute with plenty of water.

- **Methods and material for containment and cleaning up:**
  - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
  - Dispose contaminated material as waste according to item 13.

- **Reference to other sections**
  - See Section 7 for information on safe handling.
  - See Section 8 for information on personal protection equipment.
  - See Section 13 for disposal information.

- **Protective Action Criteria for Chemicals**

  - **PAC-1:**
    - None of the ingredients is listed.

  - **PAC-2:**
    - None of the ingredients is listed.

  - **PAC-3:**
    - None of the ingredients is listed.

7 Handling and storage

- **Handling:**
  - **Precautions for safe handling** Open and handle receptacle with care.

- **Information about protection against explosions and fires:**
  - Keep respiratory protective device available.

- **Conditions for safe storage, including any incompatibilities**

- **Storage:**

- **Requirements to be met by storerooms and receptacles:** No special requirements.
Trade name: Trypan Blue (10X)

- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: Keep receptacle tightly sealed.
- Specific end use(s) No further relevant information available.

### 8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
- Components with limit values that require monitoring at the workplace:
  The product does not contain any relevant quantities of materials with critical values that have to be
  monitored at the workplace.
- Additional information: The lists that were valid during the creation were used as basis.

- Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures:
    Keep away from foodstuffs, beverages and feed.
    Wash hands before breaks and at the end of work.
    Store protective clothing separately.
  - Breathing equipment: Not required.
  - Protection of hands:

  Protective gloves

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
  Due to missing tests no recommendation to the glove material can be given for the product/ the
  preparation/ the chemical mixture.
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the
  degradation

- Material of gloves
  The selection of the suitable gloves does not only depend on the material, but also on further marks of
  quality and varies from manufacturer to manufacturer. As the product is a preparation of several
  substances, the resistance of the glove material can not be calculated in advance and has therefore to
  be checked prior to the application.

- Penetration time of glove material
  The exact break through time has to be found out by the manufacturer of the protective gloves and has
  to be observed.

- Eye protection: Goggles recommended during refilling.

### 9 Physical and chemical properties

- Information on basic physical and chemical properties
  - General Information
  - Appearance:
    - Form: Liquid
    - Color: Colorless
    - Odor: Odorless
    - Structural Formula: H2 O
    - Molecular Weight: 18 g/mol
Trade name: Trypan Blue (10X)

- Odor threshold: Not determined.
- Formulation: This vial contains 500 µl of Trypan Blue at 0.4% in normal saline.
- pH-value: Not determined.
- Change in condition:
  - Melting point/Melting range: 0 °C (32 °F)
  - Boiling point/Boiling range: 100 °C (212 °F)
- Flash point: Not applicable.
- Flammability (solid, gaseous): Not applicable.
- Decomposition temperature: Not determined.
- Auto igniting: Product is not selfigniting.
- Danger of explosion: Product does not present an explosion hazard.
- Explosion limits:
  - Lower: Not determined.
  - Upper: Not determined.
- Vapor pressure at 20 °C (68 °F): 23 hPa (17.3 mm Hg)
- Density at 20 °C (68 °F): 0.9904–1.00969 g/cm³ (8.26489–8.42586 lbs/gal)
- Relative density: Not determined.
- Vapor density: Not determined.
- Evaporation rate: Not determined.
- Solubility in / Miscibility with:
  - Water: Fully miscible.
- Partition coefficient (n-octanol/water): Not determined.
- Viscosity:
  - Dynamic at 20 °C (68 °F): 0.952 mPas
  - Kinematic: Not determined.
- Solvent content:
  - Water: 98.8 %
  - VOC content: 0.00 %
  - 0.0 g/l / 0.00 lb/gal
- Solids content: 1.3 %
- Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided:
  - No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: strong oxidizing agents

(Contd. from page 4)
11 Toxicological information

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

<table>
<thead>
<tr>
<th>72-57-1 Trypan blue reagent</th>
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</thead>
<tbody>
<tr>
<td>Oral LD50</td>
</tr>
<tr>
<td>Interperitoneal LDLO</td>
</tr>
<tr>
<td>Subcutaneous LD50</td>
</tr>
<tr>
<td>Subcutaneous LDLO</td>
</tr>
</tbody>
</table>

Primary irritant effect:

on the skin: No irritant effect.

on the eye: No irritating effect.

Sensitization: No sensitizing effects known.

Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Carcinogenic categories

<table>
<thead>
<tr>
<th>IARC (International Agency for Research on Cancer)</th>
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<table>
<thead>
<tr>
<th>NTP (National Toxicology Program)</th>
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<tbody>
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<td>None of the ingredients is listed.</td>
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</table>

<table>
<thead>
<tr>
<th>OSHA-Ca (Occupational Safety &amp; Health Administration)</th>
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</tbody>
</table>

12 Ecological information

Toxicity

Aquatic toxicity: No further relevant information available.

Persistence and degradability: No further relevant information available.

Behavior in environmental systems:

Bioaccumulative potential: No further relevant information available.

Mobility in soil: No further relevant information available.

Ecotoxicological effects:

Remark: Harmful to fish.

Additional ecological information:

General notes:

Not hazardous for water.

Harmful to aquatic organisms.

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

Other adverse effects: No further relevant information available.
13 Disposal considerations

- Waste treatment methods
  - Recommendation: Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- Uncleaned packagings:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

- UN-Number
  - DOT, IMDG, IATA: not regulated

- UN proper shipping name
  - DOT, IMDG, IATA: not regulated

- Transport hazard class(es)
  - DOT, ADN, IMDG, IATA: not regulated

- Packing group
  - DOT, IMDG, IATA: not regulated

- Environmental hazards: Not applicable.

- Special precautions for user: Not applicable.

- Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable.

- UN "Model Regulation": not regulated

15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  - No further relevant information available.
  - Sara

- Section 355 (extremely hazardous substances):
  - None of the ingredients is listed.

- Section 313 (Specific toxic chemical listings):
  - 72-57-1 Trypan blue reagent

- TSCA (Toxic Substances Control Act):
  - All components have the value ACTIVE.

- Hazardous Air Pollutants
  - None of the ingredients is listed.

- Proposition 65
  - Chemicals known to cause cancer:
    - 72-57-1 Trypan blue reagent
· Chemicals known to cause reproductive toxicity for females:
   None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:
   None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:
   None of the ingredients is listed.

· Carcinogenic categories
   · EPA (Environmental Protection Agency)
     None of the ingredients is listed.
   · TLV (Threshold Limit Value)
     None of the ingredients is listed.
   · NIOSH-Ca (National Institute for Occupational Safety and Health)
     None of the ingredients is listed.

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user’s responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

· Department issuing SDS: Environment protection department.
· Contact: -
· Date of preparation / last revision 01/12/2022 / -
· Abbreviations and acronyms:
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NIOSH: Hazardous Materials Identification System (USA)
  VOC: Volatile Organic Compounds (USA, EU)
  LCS50: Lethal concentration, 50 percent
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  NIOSH: National Institute for Occupational Safety
  OSHA: Occupational Safety & Health
  TLV: Threshold Limit Value
  PEL: Permissible Exposure Limit
  REL: Recommended Exposure Limit
  Carc. 2: Carcinogenicity – Category 2
  Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3
  Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3