SAFETY DATA SHEET

Ethidium Bromide Drops

Section 1. Identification

GHS product identifier : Ethidium Bromide Drops
Code : 75816
Other means of identification : Not available.
Trade name : Ethidium Bromide Drops
Supplier/Manufacturer : 3420 Central Expressway, Santa Clara CA 95051
In case of emergency : Chemtrec: 1 800 424 9300
Outside USA & Canada: +1 703 527 3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (inhalation) - Category 3
GERM CELL MUTAGENICITY - Category 2
GHS label elements
Hazard pictograms :

Signal word : Danger
Hazard statements : Toxic if inhaled.
Harmful if swallowed.
Suspected of causing genetic defects.
Precautionary statements
Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Use only outdoors or in a well-ventilated area. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Response : IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.
Storage : Store locked up.
Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified : None known.
Section 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Substance/mixture</th>
<th>:</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingredient name</td>
<td>%</td>
<td>CAS number</td>
</tr>
<tr>
<td>phosphinic acid</td>
<td>0 - 1</td>
<td>6303-21-5</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

**Eye contact**

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

**Inhalation**

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Skin contact**

Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Ingestion**

Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

**Potential acute health effects**

- **Eye contact**: No known significant effects or critical hazards.
- **Inhalation**: Toxic if inhaled.
- **Skin contact**: No known significant effects or critical hazards.
- **Ingestion**: Harmful if swallowed.

**Over-exposure signs/symptoms**

- **Eye contact**: No specific data.
- **Inhalation**: No specific data.
- **Skin contact**: No specific data.
- **Ingestion**: No specific data.

Indication of immediate medical attention and special treatment needed, if necessary
Section 4. First aid measures

**Notes to physician**: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

**Specific treatments**: No specific treatment.

**Protection of first-aiders**: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

**Extinguishing media**

**Suitable extinguishing media**: Use an extinguishing agent suitable for the surrounding fire.

**Unsuitable extinguishing media**: None known.

**Specific hazards arising from the chemical**

**Decomposition products**: In a fire or if heated, a pressure increase will occur and the container may burst.

**Hazardous thermal decomposition products**: Decomposition products may include the following materials: phosphorus oxides

**Special protective actions for fire-fighters**: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters**: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

**For non-emergency personnel**: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders**: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions**: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**Methods and materials for containment and cleaning up**

**Small spill**: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Section 6. Accidental release measures

| Large spill | Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal. |

Section 7. Handling and storage

**Precautions for safe handling**

| Protective measures | Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. |

| Advice on general occupational hygiene | Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures. |

| Conditions for safe storage, including any incompatibilities | Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. |

Section 8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Control parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Occupational exposure limits</strong></td>
</tr>
<tr>
<td>None.</td>
</tr>
</tbody>
</table>

| Appropriate engineering controls | Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. |

| Environmental exposure controls | Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels. |

<table>
<thead>
<tr>
<th>Individual protection measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hygiene measures</strong></td>
</tr>
</tbody>
</table>
Section 8. Exposure controls/personal protection

**Hand protection**
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. To avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

**Skin protection**

**Hand protection**
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection**
Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection**
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection**
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

**Physical state**
Liquid.

**Flash point**
Not available.

**Auto-ignition temperature**
Not available.

**Flammable limits**
Not available.

**Molecular weight**
Not applicable.

**Molecular formula**
Not applicable.

**pH**
Not available.

**Boiling/condensation point**
Not available.

**Melting/freezing point**
Not available.

**Relative density**
Not available.

**Vapor pressure**
Not available.

**Vapor density**
Not available.

**Volutility**
Not available.

**Evaporation rate**
Not available.

**Viscosity**
Not available.

**Solubility**
Not available.

Section 10. Stability and reactivity

**Reactivity**
No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability**
The product is stable.

**Possibility of hazardous reactions**
Under normal conditions of storage and use, hazardous reactions will not occur.
Section 10. Stability and reactivity

**Conditions to avoid** : No specific data.

**Incompatible materials** : No specific data.

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

**Information on toxicological effects**

**Acute toxicity**
Not available.

**Irritation/Corrosion**
Not available.

**Sensitization**
Not available.

**Mutagenicity**
Not available.

**Carcinogenicity**
Not available.

**Reproductive toxicity**
Not available.

**Teratogenicity**
Not available.

**Specific target organ toxicity (single exposure)**
Not available.

**Specific target organ toxicity (repeated exposure)**
Not available.

**Aspiration hazard**
Not available.

**Information on the likely routes of exposure** : Not available.

**Potential acute health effects**

- **Eye contact** : No known significant effects or critical hazards.
- **Inhalation** : Toxic if inhaled.
- **Skin contact** : No known significant effects or critical hazards.
- **Ingestion** : Harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics**

- **Eye contact** : No specific data.
- **Inhalation** : No specific data.
- **Skin contact** : No specific data.
- **Ingestion** : No specific data.
Section 11. Toxicological information

Delayed and immediate effects and also chronic effects from short and long term exposure

**Short term exposure**
- Potential immediate effects: Not available.
- Potential delayed effects: Not available.

**Long term exposure**
- Potential immediate effects: Not available.
- Potential delayed effects: Not available.

**Potential chronic health effects**
Not available.

- General: No known significant effects or critical hazards.
- Carcinogenicity: Suspected of causing genetic defects.
- Mutagenicity: No known significant effects or critical hazards.
- Teratogenicity: No known significant effects or critical hazards.
- Developmental effects: No known significant effects or critical hazards.
- Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

- **Acute toxicity estimates**
  Not available.

Section 12. Ecological information

**Toxicity**
Not available.

**Persistence and degradability**
Not available.

**Bioaccumulative potential**
Not available.

**Mobility in soil**

- Soil/water partition coefficient ($K_{OC}$): Not available.

**Other adverse effects**
Not available.
Section 13. Disposal considerations

Disposal methods: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>Mexico Classification</th>
<th>ADR/RID</th>
<th>IMDG</th>
<th>IATA</th>
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</thead>
<tbody>
<tr>
<td>UN number</td>
<td>UN2810</td>
<td>UN2810</td>
<td>UN2810</td>
<td>UN2810</td>
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<tr>
<td>UN proper shipping name</td>
<td>Toxic liquid, organic, n.o.s. (Ethidium Bromide Solution)</td>
<td>Toxic liquid, organic, n.o.s. (Ethidium Bromide Solution)</td>
<td>Toxic liquid, organic, n.o.s. (Ethidium Bromide Solution)</td>
<td>Toxic liquid, organic, n.o.s. (Ethidium Bromide Solution)</td>
<td>Toxic liquid, organic, n.o.s. (Ethidium Bromide Solution)</td>
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<td>Transport hazard class(es)</td>
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<td>6.1</td>
<td>6.1</td>
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<tr>
<td>Packing group</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>III</td>
<td>III</td>
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<tr>
<td>Additional information</td>
<td>Reportable quantity</td>
<td>24154.6 lbs / 10966.2 kg</td>
<td>Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Tunnel code (E)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Special precautions for user: Transport within user’s premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
Section 14. Transport information

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory information

U.S. Federal regulations:
- TSCA 5(a)2 final significant new use rules: sodium nitrite
- TSCA 8(a) CDR Exempt/Partial exemption: Not determined
- United States inventory (TSCA 8b): Not determined.
- Clean Water Act (CWA) 311: sodium nitrite

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs):
- Not listed

Clean Air Act Section 602 Class I Substances:
- Not listed

Clean Air Act Section 602 Class II Substances:
- Not listed

DEA List I Chemicals (Precursor Chemicals):
- Listed

DEA List II Chemicals (Essential Chemicals):
- Not listed

SARA 302/304
Composition/information on ingredients:
No products were found.

SARA 304 RQ:
- Not applicable.

SARA 311/312
Classification:
- Immediate (acute) health hazard
- Delayed (chronic) health hazard

Composition/information on ingredients:

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>phosphinic acid</td>
<td>0 - 1</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>Yes.</td>
<td>No.</td>
</tr>
</tbody>
</table>

State regulations:
- Massachusetts: None of the components are listed.
- New York: None of the components are listed.
- New Jersey: None of the components are listed.
- Pennsylvania: None of the components are listed.

International regulations:

Not listed.
Section 15. Regulatory information

Stockholm Convention on Persistent Organic Pollutants
Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)
Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals
Not listed.

Canada
WHMIS (Canada) : Not controlled under WHMIS (Canada).
Canadian lists
Canadian NPRI : None of the components are listed.
CEPA Toxic substances : None of the components are listed.
Canada inventory : Not determined.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

<table>
<thead>
<tr>
<th>Category</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>0</td>
</tr>
<tr>
<td>Flammability</td>
<td>0</td>
</tr>
<tr>
<td>Physical hazards</td>
<td>0</td>
</tr>
</tbody>
</table>

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

- Health: 0
- Flammability: 0
- Instability/Reactivity: 0
- Special: 0

History
- Date of issue/Date of revision : 05/11/2016.
- Date of previous issue : No previous validation.
- Version : 1

Key to abbreviations
- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader
Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.