

## SAFETY DATA SHEET

Creation Date 24-Nov-2010

Revision Date 18-Jan-2018

Revision Number 3

### 1. Identification

**Product Name** Ethidium bromide

**Cat No. :** BP102-1; BP102-5

**CAS-No** 1239-45-8  
**Synonyms** Homidium bromide

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Food, drug, pesticide or biocidal product use.  
**Details of the supplier of the safety data sheet**

**Company**

Fisher Scientific Company  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

**Emergency Telephone Number**

CHEMTREC®, Inside the USA: 800-424-9300  
CHEMTREC®, Outside the USA: 001-703-527-3887

### 2. Hazard(s) identification

**Classification**

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

|                                             |            |
|---------------------------------------------|------------|
| Acute oral toxicity                         | Category 4 |
| Acute Inhalation Toxicity - Dusts and Mists | Category 2 |
| Germ Cell Mutagenicity                      | Category 2 |

**Label Elements**

**Signal Word**

Danger

**Hazard Statements**

Harmful if swallowed  
Fatal if inhaled  
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  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Do not breathe dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Wear respiratory protection

**Response**

IF exposed or concerned: Get medical attention/advice

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Immediately call a POISON CENTER or doctor/physician

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth

**Storage**

Store locked up  
Store in a well-ventilated place. Keep container tightly closed

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

### 3. Composition/Information on Ingredients

| Component                                           | CAS-No    | Weight % |
|-----------------------------------------------------|-----------|----------|
| 3,8-Diamino-1-ethyl-6-phenylphenantridinium bromide | 1239-45-8 | 95       |

### 4. First-aid measures

|                                            |                                                                                                                                                |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye Contact</b>                         | Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.              |
| <b>Skin Contact</b>                        | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required. |
| <b>Inhalation</b>                          | Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Immediate medical attention is required.   |
| <b>Ingestion</b>                           | Do NOT induce vomiting. Call a physician immediately.                                                                                          |
| <b>Most important symptoms and effects</b> | No information available.                                                                                                                      |
| <b>Notes to Physician</b>                  | Treat symptomatically                                                                                                                          |

## 5. Fire-fighting measures

**Suitable Extinguishing Media** Water spray. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Chemical foam.

**Unsuitable Extinguishing Media** No information available

**Flash Point** > 100 °C / > 212 °F

**Method -** No information available

**Autoignition Temperature** Not applicable

**Explosion Limits**

**Upper** No data available

**Lower** No data available

**Sensitivity to Mechanical Impact** No information available

**Sensitivity to Static Discharge** No information available

**Specific Hazards Arising from the Chemical**

Keep product and empty container away from heat and sources of ignition.

**Hazardous Combustion Products**

Nitrogen oxides (NO<sub>x</sub>). Carbon monoxide (CO). Carbon dioxide (CO<sub>2</sub>). Hydrogen halides.

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**NFPA**

**Health**  
4

**Flammability**  
1

**Instability**  
0

**Physical hazards**  
N/A

## 6. Accidental release measures

**Personal Precautions** Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid dust formation.

**Environmental Precautions** See Section 12 for additional Ecological Information.

**Methods for Containment and Clean Up** Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

## 7. Handling and storage

**Handling** Do not breathe dust. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Wash hands before breaks and immediately after handling the product.

**Storage** Keep in a dry, cool and well-ventilated place. Refer product specification and/or product label for specific storage temperature requirement. Keep container tightly closed.

## 8. Exposure controls / personal protection

**Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Engineering Measures** Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment**

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by

|                                 |                                                                                                                                                                                                                                                   |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 | OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.                                                                                                                                                         |
| <b>Skin and body protection</b> | Wear appropriate protective gloves and clothing to prevent skin exposure.                                                                                                                                                                         |
| <b>Respiratory Protection</b>   | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. |
| <b>Hygiene Measures</b>         | Handle in accordance with good industrial hygiene and safety practice.                                                                                                                                                                            |

## 9. Physical and chemical properties

|                                               |                               |
|-----------------------------------------------|-------------------------------|
| <b>Physical State</b>                         | Powder Solid                  |
| <b>Appearance</b>                             | Purple                        |
| <b>Odor</b>                                   | Slight                        |
| <b>Odor Threshold</b>                         | No information available      |
| <b>pH</b>                                     | 4.0-7.0 2% aq.sol             |
| <b>Melting Point/Range</b>                    | 260 - 262 °C / 500 - 503.6 °F |
| <b>Boiling Point/Range</b>                    | No information available      |
| <b>Flash Point</b>                            | > 100 °C / > 212 °F           |
| <b>Evaporation Rate</b>                       | Not applicable                |
| <b>Flammability (solid,gas)</b>               | No information available      |
| <b>Flammability or explosive limits</b>       |                               |
| <b>Upper</b>                                  | No data available             |
| <b>Lower</b>                                  | No data available             |
| <b>Vapor Pressure</b>                         | No information available      |
| <b>Vapor Density</b>                          | Not applicable                |
| <b>Specific Gravity</b>                       | No information available      |
| <b>Solubility</b>                             | 40 g/L (25°C)                 |
| <b>Partition coefficient; n-octanol/water</b> | No data available             |
| <b>Autoignition Temperature</b>               | Not applicable                |
| <b>Decomposition Temperature</b>              | No information available      |
| <b>Viscosity</b>                              | Not applicable                |
| <b>Molecular Formula</b>                      | C21 H20 Br N3                 |
| <b>Molecular Weight</b>                       | 394.3                         |

## 10. Stability and reactivity

|                                         |                                                                                                  |
|-----------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>Reactive Hazard</b>                  | None known, based on information available                                                       |
| <b>Stability</b>                        | Stable under normal conditions.                                                                  |
| <b>Conditions to Avoid</b>              | Heat, flames and sparks. Incompatible products.                                                  |
| <b>Incompatible Materials</b>           | Strong oxidizing agents                                                                          |
| <b>Hazardous Decomposition Products</b> | Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Hydrogen halides |
| <b>Hazardous Polymerization</b>         | Hazardous polymerization does not occur.                                                         |
| <b>Hazardous Reactions</b>              | None under normal processing.                                                                    |

## 11. Toxicological information

### Acute Toxicity

### Product Information

#### Component Information

| Component                         | LD50 Oral        | LD50 Dermal               | LC50 Inhalation |
|-----------------------------------|------------------|---------------------------|-----------------|
| 3,8-Diamino-1-ethyl-6-phenylphena | 1503 mg/kg (rat) | LD50 > 2000 mg/kg ( Rat ) | Not listed      |

|                    |  |  |  |
|--------------------|--|--|--|
| ntridinium bromide |  |  |  |
|--------------------|--|--|--|

**Toxicologically Synergistic Products** No information available

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Irritation** Irritating to eyes, respiratory system and skin

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component                                           | CAS-No    | IARC       | NTP        | ACGIH      | OSHA       | Mexico     |
|-----------------------------------------------------|-----------|------------|------------|------------|------------|------------|
| 3,8-Diamino-1-ethyl-6-phenylphenantridinium bromide | 1239-45-8 | Not listed | Not listed | Not listed | Not listed | Not listed |

**Mutagenic Effects** Ames test: positive.

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** No information available

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Do not empty into drains.

**Persistence and Degradability** Persistence is unlikely

**Bioaccumulation/ Accumulation** No information available.

**Mobility** Will likely be mobile in the environment due to its water solubility.

| Component                                           | log Pow |
|-----------------------------------------------------|---------|
| 3,8-Diamino-1-ethyl-6-phenylphenantridinium bromide | -0.38   |

## 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

## 14. Transport information

### DOT

|                             |                                                     |
|-----------------------------|-----------------------------------------------------|
| <b>UN-No</b>                | UN2811                                              |
| <b>Proper Shipping Name</b> | Toxic solid, organic, n.o.s.                        |
| <b>Technical Name</b>       | 3,8-Diamino-1-ethyl-6-phenylphenantridinium bromide |
| <b>Hazard Class</b>         | 6.1                                                 |

|                             |                              |
|-----------------------------|------------------------------|
| <b>Packing Group</b>        | I                            |
| <b>TDG</b>                  |                              |
| <b>UN-No</b>                | UN2811                       |
| <b>Proper Shipping Name</b> | Toxic solid, organic, n.o.s. |
| <b>Hazard Class</b>         | 6.1                          |
| <b>Packing Group</b>        | I                            |
| <b>IATA</b>                 |                              |
| <b>UN-No</b>                | UN2811                       |
| <b>Proper Shipping Name</b> | Toxic solid, organic, n.o.s. |
| <b>Hazard Class</b>         | 6.1                          |
| <b>Packing Group</b>        | I                            |
| <b>IMDG/IMO</b>             |                              |
| <b>UN-No</b>                | UN2811                       |
| <b>Proper Shipping Name</b> | Toxic solid, organic, n.o.s. |
| <b>Hazard Class</b>         | 6.1                          |
| <b>Packing Group</b>        | I                            |

## 15. Regulatory information

### United States of America Inventory

| Component                                               | CAS-No    | TSCA | TSCA Inventory notification - Active/Inactive | TSCA - EPA Regulatory Flags |
|---------------------------------------------------------|-----------|------|-----------------------------------------------|-----------------------------|
| 3,8-Diamino-1-ethyl-6-phenylphen<br>antridinium bromide | 1239-45-8 | -    | -                                             | -                           |

#### Legend:

**TSCA** - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

**TSCA 12(b)** - Notices of Export      Not applicable

### International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

| Component                                               | CAS-No    | DSL | NDL | EINECS    | PICCS | ENCS | AICS | IECSC | KECL     |
|---------------------------------------------------------|-----------|-----|-----|-----------|-------|------|------|-------|----------|
| 3,8-Diamino-1-ethyl-6-phenylphen<br>antridinium bromide | 1239-45-8 | -   | -   | 214-984-6 | X     | -    | X    | X     | KE-09740 |

### U.S. Federal Regulations

|                                                             |                                                             |
|-------------------------------------------------------------|-------------------------------------------------------------|
| <b>SARA 313</b>                                             | Not applicable                                              |
| <b>SARA 311/312 Hazard Categories</b>                       | See section 2 for more information                          |
| <b>CWA (Clean Water Act)</b>                                | Not applicable                                              |
| <b>Clean Air Act</b>                                        | Not applicable                                              |
| <b>OSHA</b> - Occupational Safety and Health Administration | Not applicable                                              |
| <b>CERCLA</b>                                               | Not applicable                                              |
| <b>California Proposition 65</b>                            | This product does not contain any Proposition 65 chemicals. |
| <b>U.S. State Right-to-Know Regulations</b>                 | Not applicable                                              |

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

Mexico - Grade No information available

**16. Other information****Prepared By**

Regulatory Affairs  
Thermo Fisher Scientific  
Email: EMSDS.RA@thermofisher.com

**Creation Date**

24-Nov-2010

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18-Jan-2018

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18-Jan-2018

**Revision Summary**

This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**