

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

**SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**
**Product Identifier**

Nama Produk **Ethidium bromide**  
 Product Description: **Ethidium bromide**  
 Cat No. : BP102-1; BP102-5  
 Synonyms Homidium bromide  
 CAS-No 1239-45-8  
 Molecular Formula C<sub>21</sub> H<sub>20</sub> Br N<sub>3</sub>

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

Recommended Use Laboratory chemicals.  
 Uses advised against No Information available

**Details of the supplier of the safety data sheet**

Company Fisher Scientific (M) Sdn Bhd No. 3, Jalan Sepadu 25/123,  
 Taman Perindustrian Axis, Seksyen 25,  
 40400 Shah Alam, Selangor Darul Ehsan, Malaysia.

Supplier  
 E-mail address Enquiry.my@thermofisher.com

Emergency Telephone Number  
 (603) 5122 8888

**SECTION 2: HAZARDS IDENTIFICATION**
**Classification of the substance or mixture**

Acute oral toxicity	Category 4 (H302)
Acute Inhalation Toxicity - Vapors	Category 2 (H330)
Germ Cell Mutagenicity	Category 2 (H341)

**Label Elements**


Signal Word

Danger

**Hazard Statements**

H302 - Harmful if swallowed  
 H330 - Fatal if inhaled  
 H341 - Suspected of causing genetic defects

**Precautionary Statements**

ACRBP102

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P281 - Use personal protective equipment as required  
P310 - Immediately call a POISON CENTER or doctor/physician  
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

## Other Hazards

### SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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

### SECTION 4: FIRST AID MEASURES

#### Description of first aid measures

##### **Eye Contact**

Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

##### **Skin Contact**

Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.

##### **Ingestion**

Do NOT induce vomiting. Call a physician immediately.

##### **Inhalation**

Remove from exposure, lie down. Remove to fresh air. If not breathing, give artificial respiration. Immediate medical attention is required.

##### **Self-Protection of the First Aider**

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

#### Most important symptoms and effects, both acute and delayed

No information available.

#### Indication of any immediate medical attention and special treatment needed

##### **Notes to Physician**

Treat symptomatically.

### SECTION 5: FIREFIGHTING MEASURES

#### Extinguishing media

##### **Suitable Extinguishing Media**

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

##### **Extinguishing media which must not be used for safety reasons**

No information available.

#### Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors.

#### **Hazardous Combustion Products**

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

#### Advice for fire-fighters

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

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment and Emergency Procedures

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 and Material for Containment and Cleaning Up

Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

### Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

### Precautions for Safe 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.

### Conditions for Safe Storage, Including any Incompatibilities

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.

### Specific End Uses

Use in laboratories.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

### Exposure Controls

#### Engineering Measures

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

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

### Personal protective equipment

#### Eye Protection

Goggles

#### Hand Protection

Protective gloves

#### Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

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Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.  
(Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

## Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators

## Recommended Filter type:

Particulates filter conforming to EN 143

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

When RPE is used a face piece Fit Test should be conducted

## Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

## Environmental exposure controls

No information available

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

#### Appearance

Purple

#### Physical State

Powder Solid

#### Odor

Slight

#### Odor Threshold

No data available

#### pH

4.0-7.0

2% aq.sol

#### Melting Point/Range

260 - 262 °C / 500 - 503.6 °F

#### Softening Point

No data available

#### Boiling Point/Range

No information available

#### Flash Point

> 100 °C / > 212 °F

Method - No information available

#### Evaporation Rate

Not applicable

Solid

#### Flammability (solid,gas)

No information available

#### Explosion Limits

No data available

#### Vapor Pressure

No information available

#### Vapor Density

Not applicable

Solid

#### Specific Gravity / Density

No data available

#### Bulk Density

No data available

#### Water Solubility

40 g/L (25°C)

#### Solubility in other solvents

No information available

#### Partition Coefficient (n-octanol/water)

##### Component

log Pow

3,8-Diamino-1-ethyl-6-phenylphenantri

-0.38

dinium bromide

#### Autoignition Temperature

Not applicable

#### Decomposition Temperature

No data available

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Viscosity	Not applicable	Solid
Explosive Properties	No information available	
Oxidizing Properties	No information available	

Molecular Formula	C <sub>21</sub> H <sub>20</sub> Br N <sub>3</sub>
Molecular Weight	394.3

## SECTION 10: STABILITY AND REACTIVITY

### Reactivity

None known, based on information available.

### Chemical Stability

Stable under normal conditions.

### Possibility of Hazardous Reactions

Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	No information available.

### Conditions to Avoid

Heat, flames and sparks. Incompatible products.

### Incompatible Materials

Strong oxidizing agents.

### Hazardous Decomposition Products

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

## SECTION 11: TOXICOLOGICAL INFORMATION

### Information on Toxicological Effects

#### Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
3,8-Diamino-1-ethyl-6-phenylphenanthridinium bromide	1503 mg/kg (rat)	LD50 > 2000 mg/kg ( Rat )	

#### Chronic Toxicity

##### **Carcinogenicity**

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

##### **Sensitization**

##### **Mutagenic Effects**

No information available  
Ames test: positive.

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**Reproductive Effects** No information available  
**Developmental Effects** No information available  
**Target Organs** No information available.

## SECTION 12: ECOLOGICAL INFORMATION

**Ecotoxicity effects** Contains no substances known to be hazardous to the environment or that are not degradable in waste water treatment plants.

**Persistence and degradability**  
**Persistence** Persistence is unlikely.

**Bioaccumulative potential** Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
3,8-Diamino-1-ethyl-6-phenylphenantridinium bromide	-0.38	No data available

**Mobility in soil** The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

**Other adverse effects** No information available

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste treatment methods**  
**Waste from Residues/Unused Products** Waste is classified as hazardous Dispose of in accordance with the European Directives on waste and hazardous waste Dispose of in accordance with local regulations  
**Contaminated Packaging** Dispose of this container to hazardous or special waste collection point.  
**Other Information** Waste codes should be assigned by the user based on the application for which the product was used Do not empty into drains

## SECTION 14: TRANSPORT INFORMATION

**IMDG/IMO**  
**UN-No** UN2811  
**Hazard Class** 6.1  
**Packing Group** I  
**Proper Shipping Name** Toxic solid, organic, n.o.s.  
Ethidium bromide

**Road and Rail Transport**  
**UN-No** UN2811  
**Hazard Class** 6.1  
**Packing Group** I

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**Proper Shipping Name** Toxic solid, organic, n.o.s.  
Ethidium bromide

## IATA

**UN-No** UN2811  
**Hazard Class** 6.1  
**Packing Group** I  
**Proper Shipping Name** Toxic solid, organic, n.o.s.  
Ethidium bromide

**Special Precautions for User** No special precautions required

## SECTION 15: REGULATORY INFORMATION

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

**International Inventories** X = listed

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	IECSC	AICS	KECL
3,8-Diamino-1-ethyl-6-phenylp henantridinium bromide	214-984-6	-		-	-	-	X	-	X	X	KE-0974 0

### National Regulations

**Persistent Organic Pollutant** This product does not contain any known or suspected substance  
**Ozone Depletion Potential** This product does not contain any known or suspected substance

## SECTION 16: OTHER INFORMATION

### Legend

**CAS** - Chemical Abstracts Service

**EINECS/ELINCS** - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

**PICCS** - Philippines Inventory of Chemicals and Chemical Substances

**IECSC** - Chinese Inventory of Existing Chemical Substances

**KECL** - Korean Existing and Evaluated Chemical Substances

**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory

**DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

**ENCS** - Japanese Existing and New Chemical Substances

**AICS** - Australian Inventory of Chemical Substances

**NZIoC** - New Zealand Inventory of Chemicals

**WEL** - Workplace Exposure Limit

**ACGIH** - American Conference of Governmental Industrial Hygienists

**RPE** - Respiratory Protective Equipment

**LC50** - Lethal Concentration 50%

**POW** - Partition coefficient Octanol:Water

**TWA** - Time Weighted Average

**IARC** - International Agency for Research on Cancer

**LD50** - Lethal Dose 50%

**EC50** - Effective Concentration 50%

**ADR** - European Agreement Concerning the International Carriage of Dangerous Goods by Road

**IMO/IMDG** - International Maritime Organization/International Maritime Dangerous Goods Code

**OECD** - Organisation for Economic Co-operation and Development

**BCF** - Bioconcentration factor

**ICAO/IATA** - International Civil Aviation Organization/International Air Transport Association

**MARPOL** - International Convention for the Prevention of Pollution from Ships

**ATE** - Acute Toxicity Estimate

**VOC** (volatile organic compound)

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## Key literature references and sources for data

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

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Revision Summary

Not applicable.

**In accordance with local and national regulations: Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013**

## 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 Safety Data Sheet**