

## 1. Identification of the substance/preparation and of the company

### Product details

**Trade Name:** 1% Ethidium Bromide Solution

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**Catalogue-No.:** M3178

### Manufacturer /Supplier:

Genaxxon BioScience GmbH, Söflinger Str. 100, 89077 Ulm/Germany.  
Tel.: +49 (0)731 3608 123

### Further information available from:

Genaxxon BioScience GmbH, Söflinger Str. 100, 89077 Ulm/Germany.  
Tel.: +49 (0)731 3608 123

### Information in case of emergency:

Poison Information Centre Mainz, Germany  
Tel.: +49 (0)6131 19240 / 24 h

**MSDS-No:** ethidium\_sol/1

**NOTE:** If this product is a kit or supplied with more than one material, please refer to the MSDS for each component for hazard information.

### Product Use:

This products are for laboratory research use only and are not intended for human or animal diagnostics, therapeutics or other clinical uses.

## 2. Composition/information on ingredients

### Chemical characterisation

**Synonyms:** 3,8-Diamino-5-ethyl-6-phenylphenanthridinium bromide  
EtBr  
Ethidium bromide  
Homidium bromide

**Formula:** C<sub>21</sub>H<sub>20</sub>N<sub>3</sub>Br

**Molecular Weight:** 394.33 g/mol

Product Name	Hazardous Symbol	Concentration (%)	CAS #	EC no	Annex I / Index Number
Ethidium bromide solution		1 %	None	None	---
Ingredient Name					
Water		99 %	7732-18-5	231-791-2	---
Ethidium Bromide Powder	T+	1 %	1239-45-8	214-984-6	---

R-Phrases: R22- R26- R36/37/38-R68

## 3. Hazardous identification

### Information concerning particular hazards for human and environment:

Harmful if swallowed. Very toxic by inhalation. Irritating to eyes, respiratory system and skin. Possible risk of irreversible effects.

## 4. First-aid measures

**After inhalation:** If inhaled, move person into fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Consult physician.

**After contact with skin:** Wash off with soap and plenty of water. Consult physician.

**After contact with eyes:** Flush immediately with copious amounts of water. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

**After swallowing:** Never give anything by mouth to an unconscious person. If swallowed, wash out mouth with plenty of water provided person is conscious. Call for doctor immediately.

#### **5. Fire-fighting measures**

**Suitable extinguishing agents:** Water Spray. Carbon Dioxide. Dry chemical powder, or appropriate foam.

**Special risks:** Specific Hazard(s): Emits toxic fumes under fire conditions.

**Protective equipment (For firefighters):** Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

#### **6. Accidental release measures**

**Personal precaution procedures to be followed in case of leak or spill:** Don't breath fume/aerosole. Avoid direct contact. Ventilate area and wash spill site after material pick-up is complete.

**Person related safety precautions:** Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

**Measures for environmental protection:** Avoid release to sewage system or environment.

**Measures for cleaning/collecting:** Combine material with commercial bleach, absorb on sand or vermiculate and place in a closed container for disposal. Pick up and arrange disposal without creating mist. Keep suitable, closed containers for disposal. Wahs spill site with commercial bleach followed by water.

#### **7. Handling and storage**

##### **Handling**

**Information for safe handling:** Avoid inhalation. Avoid contact with eyes, skin and clothing. Avoid formation of mist and areosols. Provide appropriate exhaust ventilation at places where mist or aerosol is formed.

**Information about fire – and explosion protection:** No special measures required.

##### **Storage:**

**Requirements to be met by storerooms and receptacles:** Keep bottles well closed.

**Information about storage in one common storage facility:** Keep bottles well closed.

**Further information about storage conditions:** Keep tightly closed. Store at RT.

**Special requirements:** No special measures required.

#### **8. Exposure controls/personal protection**

**Engineering controls:** Use only in a chemical fume hood.

**Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Protection of hands:** Handle with gloves. The selected protective gloves have to satisfy the specifications of EU Directive 89/689/EEC and the standard EN 374 derived from it.

**Skin and body protection:** Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**Materials of gloves:** The selection of suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

**Eye protection:** Chemical safety goggles.

**Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before and immediately after handling the product. Wash contaminated clothing before reuse.



## 9. Physical and chemical properties

### General Information

<b>Form:</b>	Liquid
<b>Colour:</b>	Dark Red solution
<b>Odour:</b>	none

### Change in conditions

<b>Melting point/Melting range:</b>	Not applicable
<b>Boiling point/Boiling range:</b>	Not applicable
<b>Flash point:</b>	Not applicable
<b>Self-ignition:</b>	data not available
<b>Danger of explosion:</b>	data not available
<b>Density at 20°C:</b>	1.00 g/L
<b>Solubility in / Miscibility with water:</b>	data not available
<b>pH value (1%, H2O):</b>	4.5 (20°C)

## 10. Stability and reactivity

**Thermal composition / conditions to be avoided:** Avoid strong heating.

**Materials to avoid:** Avoid strong oxidizing agents.

**Dangerous decomposition products:** Carbon monoxide, Carbon dioxide, Nitrogen oxides (NO<sub>x</sub>), Hydrogen bromide gas.

**Hazardous Polymerisation:** Will not occur.

## 11. Toxicological information

### Acute Toxicity

LD50 (subcutaneous - Mouse): 110 mg/kg

**Irritation and corrosion:** No data available.

**Sensitisation:** No data available.

### Chronic exposure:

Human (2 µmol/L - Cell Type: fibroblast)	DNA damage
Human (5 mg/L - Cell Type: leukocyte)	DNA damage
Human (40 µmol/L - Cell Type: HeLa cell)	DNA inhibition
Rat (40 mg/L - Cell Type: Other cell types)	DNA damage
Rat (200 µmol/L - Cell Type: liver)	DNA damage
Rat (2500 nmol/L - Cell Type: liver)	Unscheduled DNA synthesis
Rat (500 nmol/L - Cell Type: liver)	DNA inhibition
Rat (10 mg/L - Cell Type: liver)	Sister chromatid exchange
Mouse (117 µmol/L - Cell Type: Ascites tumor)	DNA damage
Mouse (100 nmol/L - Cell Type: mammary gland)	DNA damage
Mouse (100 mg/KG – Intraperitoneal)	DNA inhibition



Mouse (500 µmol/L - Cell Type: Other cell types)	DNA inhibition
Mouse (500 µmol/L - Cell Type: leukocyte)	DNA inhibition
Mouse (500 µmol/L - Cell Type: leukocyte)	Other mutation test systems
Mouse (100 µmol/L - Cell Type: lymphocyte)	DNA inhibition
Mouse (100 µmol/L - Cell Type: lymphocyte)	Other mutation test systems
Mouse (1 mg/L - Cell Type: fibroblast)	Cytogenetic analysis
Mouse (5 mg/L - Cell Type: leukocyte)	Cytogenetic analysis
Mouse (10 mg/L - Cell Type: Other cell types)	Cytogenetic analysis
Mouse (80 mg/kg – Intravenous)	Sister chromatid exchange
Hamster (10 mg/L - Cell Type: fibroblast)	DNA damage
Hamster (10 mg/L - Cell Type: ovary)	Cytogenetic analysis
Hamster (10 mg/L - Cell Type: fibroblast)	Cytogenetic analysis
Hamster (41 mg/L - Cell Type: lung)	Cytogenetic analysis
Hamster (10 mg/L - Cell Type: lung)	Sister chromatid exchange
Hamster (75 µmol/L - Cell Type: lung)	Mutation in mammalian somatic cells.
Hamster (45 mg/L - Cell Type: ovary)	Mutation in mammalian somatic cells.
Bird (wild) (37.5 µmol/L - Cell Type: leukocyte)	DNA damage
Bird (1 mmol/L - Cell Type: leukocyte)	DNA damage
Bird (1 mmol/L - Cell Type: liver)	DNA damage

Laboratory experiments have shown mutagenic effects

**Potential Health Effects:**

**Route of Exposure.**

<b>Inhalation:</b>	May be fatal if inhaled. Causes respiratory tract irritation.
<b>Skin Absorption:</b>	May be harmful if absorbed through the skin. Causes irritation of skin.
<b>Eye contact:</b>	May cause irritation of eyes.
<b>Ingestion:</b>	Harmful if swallowed.

**Signs and Symptoms of Exposure**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**12. Ecological Information**

**Biological Degradation**

No data available

**Ecotoxicity effects**

No data available

**General notes:**

No data available

**13. Disposal considerations**

**Product:**

**Recommendation:** Must not be disposed together with household garbage. Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

**Uncleaned packaging:**

**Recommendation:** Disposal must be made according to official regulations.

**Contaminated packaging:** Dispose of as unused product.

**14. Transport information**

**Land transport ADR/RID (cross border)**

**ADR/RID class:** UN-Number: 2810 Class: 6.1 Packing group: III  
**Proper shipping name:** TOXIC LIQUID, ORGANIC, N.O.S.

**Maritime transport IMDG:**

**IMDG Class:** UN-Number: 2810 Class: 6.1 Packing group: III  
**Proper shipping name:** TOXIC LIQUID, ORGANIC, N.O.S.

**Marine pollutant:** No

**Severe marine pollutant:** No

**Air transport ICAO-TI and IATA-DGR:**

**ICAO/IATA Class:** UN-Number: 2810 Class: 6.1 Packing group: III  
**Proper shipping name:** Toxic liquid, organic n.o.s.  
**Inhalation Packaging Group I:** No  
**Technical Name:** Required

**15. Regulatory information**

**Labelling according to EU guidelines:**

**Indication of danger:** T+ (very toxic)  
**R-Phrases:** 22 (harmful if swallowed)  
26 (Very toxic by inhalation)  
36/37/38 (Irritating to eyes, respiratory system and skin)  
68 (Possible risk of irreversible effects)  
**S-Phrases:** 26 (In case of contact with eyes, rinse immediately with plenty of water and seek  
28 (After contact with skin, wash immediately with plenty of water and soap  
36/37 (Wear suitable protective clothing and gloves  
45 (In case of accident or if you feel unwell, seek medical advice immediately and  
show label.

**National Regulations:** Germany

WKG: 2  
Self-Classification

**16. Other information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Genaxxon BioScience GmbH, shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.