

**Safety data sheet**  
 according to 1907/2006/EC, Article 31

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 Version number 5

**SECTION 1: Identification of the substance/mixture and of the company/undertaking**

- **1.1 Product identifier**
- **Trade name:** Ethidium bromide - Solution 1 % BioChemica
- **Article number:** A1152
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
 No further relevant information available.
- **Application of the substance / the mixture**  
 Biochemistry  
 Laboratory chemical
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
 AppliChem GmbH  
 Ottoweg 4  
 D-64291 Darmstadt  
 Tel.: +49 (0)6151 93570  
 msds@appliChem.com
- **Further information obtainable from:** Abteilung Qualitätskontrolle / Dep. Quality Control
- **1.4 Emergency telephone number:**  
 +49(0)6151 93570 (während der normalen Geschäftszeiten / Inside normal business hours)

**SECTION 2: Hazards identification**

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**  
 Acute Tox. 1 H330 Fatal if inhaled.  
 Muta. 2 H341 Suspected of causing genetic defects.  
 Acute Tox. 4 H302 Harmful if swallowed.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**  
 T; Toxic  
 R23: Toxic by inhalation.  
 Xn; Harmful  
 R68: Possible risk of irreversible effects.
- **Information concerning particular hazards for human and environment:**  
 The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
- **Classification system:**  
 The classification is according to the latest editions of the EU-lists, and extended by company and literature data.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
 The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS06 GHS08

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**Trade name: Ethidium bromide - Solution 1 % BioChemica**

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- **Signal word** *Danger*
- **Hazard-determining components of labelling:**  
*ethidium bromide*
- **Hazard statements**  
*H302 Harmful if swallowed.*  
*H330 Fatal if inhaled.*  
*H341 Suspected of causing genetic defects.*
- **Precautionary statements**  
*P280 Wear protective gloves/protective clothing/eye protection/face protection.*  
*P260 Do not breathe dust/fume/gas/mist/vapours/spray.*  
*P308+P311 IF exposed or concerned: Call a POISON CENTER/doctor.*
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** *Not applicable.*
- **vPvB:** *Not applicable.*

### SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
- **Description:** *Mixture of substances listed below with nonhazardous additions.*

· **Dangerous components:**

|   |                   |          |
|---|-------------------|----------|
| CAS: 1239-45-8  | ethidium bromide  | >0.1-≤1% |
| EINECS: 214-984-6                                     | T+ R26; Xn R22-68 |          |
|   | Muta. Cat. 3      |          |
| Acute Tox. 2, H330; Muta. 2, H341; Acute Tox. 4, H302 |                   |          |

- **Additional information:** *For the wording of the listed risk phrases refer to section 16.*

### SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:** *Immediately remove any clothing soiled by the product.*
- **After inhalation:**  
*Take affected persons into fresh air and keep quiet.*  
*If breathing stops: mouth-to-mouth respiration or mechanical ventilation, oxygen mask if necessary.*  
*Immediately call a physician.*  
*In case of unconsciousness place patient stably in side position for transportation.*
- **After skin contact:**  
*Call a doctor immediately.*  
*Immediately wash with water and soap and rinse thoroughly.*
- **After eye contact:** *Rinse opened eye for several minutes under running water. Then consult a doctor.*
- **After swallowing:**  
*Rinse out mouth.*  
*Call a doctor immediately.*
- **4.2 Most important symptoms and effects, both acute and delayed** *No further relevant information available.*
- **4.3 Indication of any immediate medical attention and special treatment needed**  
*No further relevant information available.*

### SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** *Use fire extinguishing methods suitable to surrounding conditions.*
- **5.2 Special hazards arising from the substance or mixture**  
*Non-combustible.*  
*Formation of toxic gases is possible during heating or in case of fire.*  
*In case of fire, the following can be released:*

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Nitrogen oxides (NO<sub>x</sub>)

Hydrogen bromide (HBr)

carbon oxides (CO, CO<sub>2</sub>).

· **5.3 Advice for firefighters**

· **Protective equipment:** Wear self-contained respiratory protective device.

· **Additional information**

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

## **SECTION 6: Accidental release measures**

· **6.1 Personal precautions, protective equipment and emergency procedures** Avoid substance contact.

· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.

· **6.3 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.

Ensure adequate ventilation.

Clean up affected area.

Dispose of the material collected according to regulations.

· **6.4 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.

## **SECTION 7: Handling and storage**

· **7.1 Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.

Open and handle receptacle with care.

· **Information about fire - and explosion protection:** Keep respiratory protective device available.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Storage:**

· **Requirements to be met by storerooms and receptacles:** No special requirements.

· **Information about storage in one common storage facility:** Not required.

· **Further information about storage conditions:**

Keep container tightly sealed.

Store under lock and key and with access restricted to technical experts or their assistants only.

· **Recommended storage temperature:** +2 - +8 °C

· **Storage class:** 6.1 D

· **7.3 Specific end use(s)** No further relevant information available.

## **SECTION 8: Exposure controls/personal protection**

· **Additional information about design of technical facilities:** No further data; see item 7.

· **8.1 Control parameters**

· **Ingredients 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 valid during the making were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

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- **Respiratory protection:**  
Respiratory protection required when vapours/aerosols are generated.  
Filter ABEK
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
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.
- **For the permanent contact gloves made of the following materials are suitable:**  
Nitrile rubber, NBR  
Recommended thickness of the material:  $\geq 0.11$  mm  
Value for the permeation: Level  $\geq 480$  min
- **As protection from splashes gloves made of the following materials are suitable:**  
Nitrile rubber, NBR  
Recommended thickness of the material:  $\geq 0.11$  mm  
Value for the permeation: Level  $\geq 480$  min
- **Eye protection:** Safety glasses
- **Body protection:**  
Use protective suit.  
Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the hazardous substances handled.

## SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**  

|         |              |
|---------|--------------|
| Form:   | Fluid        |
| Colour: | Red          |
| Odour:  | Recognisable |
- **pH-value at 20 °C:** ~4.4
- **Change in condition**  

|                              |               |
|------------------------------|---------------|
| Melting point/Melting range: | 238-240 °C    |
| Boiling point/Boiling range: | Undetermined. |
- **Flash point:** Not applicable.
- **Self-igniting:** Product is not selfigniting.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Density at 20 °C:** 1 g/cm<sup>3</sup>
- **Solubility in / Miscibility with water:** Soluble.
- **Viscosity:**  

|          |                 |
|----------|-----------------|
| Dynamic: | Not determined. |
|----------|-----------------|

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**Kinematic:** Not determined.

· **Solvent content:**

**Organic solvents:** 0.0 %

· **9.2 Other information** No further relevant information available.

## SECTION 10: Stability and reactivity

· **10.1 Reactivity**

· **10.2 Chemical stability**

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

· **10.3 Possibility of hazardous reactions** No dangerous reactions known.

· **10.4 Conditions to avoid** No further relevant information available.

· **10.5 Incompatible materials:** No further relevant information available.

· **10.6 Hazardous decomposition products:** In the event of fire: See chapter 5

## SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values relevant for classification:**

| · Components                      | Type | Value            | Species |
|-----------------------------------|------|------------------|---------|
| <b>1239-45-8 ethidium bromide</b> |      |                  |         |
| Oral                              | LD50 | 1503 mg/kg (rat) |         |

· **Primary irritant effect:**

· **on the skin:** No irritant effect.

· **on the eye:** Slight irritation.

· **After inhalation:** No irritant effect.

· **Sensitisation:** No sensitising effects known.

· **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Toxic

· **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**

Muta. 2

## SECTION 12: Ecological information

· **12.2 Persistence and degradability** No further relevant information available.

· **12.3 Bioaccumulative potential** No further relevant information available.

· **12.4 Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow to enter waters, waste water, or soil.

· **12.5 Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **12.6 Other adverse effects** No further relevant information available.

GB

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### SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation**

Chemicals must be disposed of in compliance with the respective national regulations.  
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packaging:**

· **Recommendation:**

Disposal must be made according to official regulations.  
Packagings that may not be cleansed are to be disposed of in the same manner as the product.

### SECTION 14: Transport information

· **14.1 UN-Number**

· **ADR, IMDG, IATA**

UN2810

· **14.2 UN proper shipping name**

· **ADR, IMDG, IATA**

TOXIC LIQUID, ORGANIC, N.O.S. (3,8-diamino-1-ethyl-6-phenylphenantridiniumbromide)

· **14.3 Transport hazard class(es)**

· **ADR**



· **Class**

6.1 (T1) Toxic substances.

· **Label**

6.1

· **IMDG, IATA**



· **Class**

6.1 Toxic substances.

· **Label**

6.1

· **14.4 Packing group**

· **ADR, IMDG, IATA**

III

· **14.5 Environmental hazards:**

· **Marine pollutant:**

No

· **14.6 Special precautions for user**

· **Danger code (Kemler):**

Warning: Toxic substances.

60

· **EMS Number:**

F-A,S-A

· **14.7 Transport in bulk according to Annex II of**

**MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**

· **ADR**

· **Limited quantities (LQ)**

5L

· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· **Transport category**

2

· **Tunnel restriction code**

E

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|                                   |   |
|-----------------------------------|---|
| · <b>IMDG</b>                     | 5L  |
| · <b>Limited quantities (LQ)</b>  | Code: E1  |
| · <b>Excepted quantities (EQ)</b> | Maximum net quantity per inner packaging: 30 ml<br>Maximum net quantity per outer packaging: 1000 ml  |
| · <b>UN "Model Regulation":</b>   | UN2810, TOXIC LIQUID, ORGANIC, N.O.S. (3,8-diamino-1-ethyl-6-phenylphenanthridiniumbromide), 6.1, III |

## SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**  
No further relevant information available.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**  
H302 Harmful if swallowed.  
H330 Fatal if inhaled.  
H341 Suspected of causing genetic defects.  
R22 Harmful if swallowed.  
R26 Very toxic by inhalation.  
R68 Possible risk of irreversible effects.
- **Department issuing MSDS:** Abteilung Qualitätskontrolle / Dept. Quality Control
- **Contact:** Hr. / Mr. Th. Stöckle
- **Abbreviations and acronyms:**  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
ICAO: International Civil Aviation Organisation  
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
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)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
Acute Tox. 4: Acute toxicity, Hazard Category 4  
Acute Tox. 1: Acute toxicity, Hazard Category 1  
Acute Tox. 2: Acute toxicity, Hazard Category 2  
Muta. 2: Germ cell mutagenicity, Hazard Category 2
- **\* Data compared to the previous version altered.**