

# Safety Data Sheet

acc. to OSHA HCS

Printing date 01/29/2018

Reviewed on 01/29/2018

## 1 Identification

- **Product identifier**
- **Trade name:** Bromine-Sodium Bromide Reagent
- **Article number:** UC082
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Aqua Solutions, Inc.  
6913 Highway 225  
DEER PARK, TX 77536  
USA  
800-256-2586
- **Information department:**  
Technical Coordinator  
Sherman Nelson sherman@aquasolutions.org
- **Emergency telephone number:**  
Chemtrec: 800-424-9300  
Canutec: 613-996-6666



## 2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 1 H224 Extremely flammable liquid and vapor.



GHS08 Health hazard

STOT SE 1 H370 Causes damage to organs.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.  
Skin Irrit. 2 H315 Causes skin irritation.  
Eye Irrit. 2A H319 Causes serious eye irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02



GHS07



GHS08

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
Methanol (Methyl Alcohol)

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**Trade name: Bromine-Sodium  
Bromide Reagent**

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- **Hazard statements**

*Extremely flammable liquid and vapor.*

*Harmful if swallowed.*

*Causes skin irritation.*

*Causes serious eye irritation.*

*Causes damage to organs.*

- **Precautionary statements**

*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

*Keep container tightly closed.*

*Ground/bond container and receiving equipment.*

*Use explosion-proof electrical/ventilating/lighting/equipment.*

*Use only non-sparking tools.*

*Take precautionary measures against static discharge.*

*Do not breathe dust/fume/gas/mist/vapors/spray.*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Wear protective gloves/protective clothing/eye protection/face protection.*

*If swallowed: Call a poison center/doctor if you feel unwell.*

*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Specific treatment (see on this label).*

*Rinse mouth.*

*If skin irritation occurs: Get medical advice/attention.*

*If eye irritation persists: Get medical advice/attention.*

*Take off contaminated clothing and wash it before reuse.*

*In case of fire: Use for extinction: CO2, powder or water spray.*

*Store in a well-ventilated place. Keep cool.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 4

Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = \*2

Fire = 4

Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Description:** Mixture of the substances listed below with nonhazardous additions.

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**Trade name: Bromine-Sodium  
Bromide Reagent**

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**· Dangerous components:**

CAS: 67-56-1	Methanol (Methyl Alcohol)	86.109%
CAS: 7726-95-6	Bromine	2.035%

**· Table of Nonhazardous Ingredients**

CAS: 7647-15-6	Sodium Bromide	11.857%
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## 4 First-aid measures

**· Description of first aid measures**

**· General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

**· After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Immediately call a doctor.

**· Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

## 5 Fire-fighting measures

**· Extinguishing media**

**· Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **For safety reasons unsuitable extinguishing agents:** Water with full jet

· **Special hazards arising from the substance or mixture** No further relevant information available.

**· Advice for firefighters**

· **Protective equipment:** No special measures required.

## 6 Accidental release measures

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

Wear protective equipment. Keep unprotected persons away.

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

**· 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.

**· 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.

**· Protective Action Criteria for Chemicals**

**· PAC-1:**

CAS: 67-56-1	Methanol (Methyl Alcohol)	530 ppm
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CAS: 7647-15-6	Sodium Bromide	12 mg/m <sup>3</sup>
CAS: 7726-95-6	Bromine	0.033 ppm
<b>· PAC-2:</b>		
CAS: 67-56-1	Methanol (Methyl Alcohol)	2,100 ppm
CAS: 7647-15-6	Sodium Bromide	130 mg/m <sup>3</sup>
CAS: 7726-95-6	Bromine	0.24 ppm
<b>· PAC-3:</b>		
CAS: 67-56-1	Methanol (Methyl Alcohol)	7200* ppm
CAS: 7647-15-6	Sodium Bromide	830 mg/m <sup>3</sup>
CAS: 7726-95-6	Bromine	8.5 ppm

## 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Open and handle receptacle with care.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store in a cool location.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Keep receptacle tightly sealed.  
Do not gas tight seal receptacle.  
Store in cool, dry conditions in well sealed receptacles.  
Protect from heat and direct sunlight.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**

**· Components with limit values that require monitoring at the workplace:**

<b>CAS: 67-56-1 Methanol (Methyl Alcohol)</b>	
PEL	Long-term value: 260 mg/m <sup>3</sup> , 200 ppm
REL	Short-term value: 325 mg/m <sup>3</sup> , 250 ppm Long-term value: 260 mg/m <sup>3</sup> , 200 ppm Skin
TLV	Short-term value: 328 mg/m <sup>3</sup> , 250 ppm Long-term value: 262 mg/m <sup>3</sup> , 200 ppm Skin; BEI
<b>CAS: 7726-95-6 Bromine</b>	
PEL	Long-term value: 0.7 mg/m <sup>3</sup> , 0.1 ppm

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REL	Short-term value: 2 mg/m <sup>3</sup> , 0.3 ppm Long-term value: 0.7 mg/m <sup>3</sup> , 0.1 ppm
TLV	Short-term value: 1.3 mg/m <sup>3</sup> , 0.2 ppm Long-term value: 0.66 mg/m <sup>3</sup> , 0.1 ppm

**· Ingredients with biological limit values:**

**CAS: 67-56-1 Methanol (Methyl Alcohol)**

BEI	15 mg/L LD50 Intraperitoneal: urine Time: end of shift LD50: Methanol (background, nonspecific)
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**· Additional information:** The lists that were valid during the creation were used as basis.

**· 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.
- Avoid contact with the eyes and skin.

**· Breathing equipment:** Not required.

**· Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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.

**· Eye protection:**



Tightly sealed goggles

**· Body protection:** Protective work clothing

## 9 Physical and chemical properties

**· Information on basic physical and chemical properties**

**· General Information**

**· Appearance:**

**Form:** Liquid

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**Trade name: Bromine-Sodium  
Bromide Reagent**

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<b>Color:</b>	Light orange color
<b>· Odor:</b>	Organic
<b>· Odor threshold:</b>	Not determined.
<b>· pH-value:</b>	Not determined.
<b>· Change in condition</b>	
<b>Melting point/Melting range:</b>	Undetermined.
<b>Boiling point/Boiling range:</b>	1 °C (33.8 °F)
<b>· Flash point:</b>	11 °C (51.8 °F)
<b>· Flammability (solid, gaseous):</b>	Not applicable.
<b>· Ignition temperature:</b>	455 °C (851 °F)
<b>· Decomposition temperature:</b>	Not determined.
<b>· Auto igniting:</b>	Product is not selfigniting.
<b>· Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
<b>· Explosion limits:</b>	
<b>Lower:</b>	5.5 Vol %
<b>Upper:</b>	44 Vol %
<b>· Vapor pressure at 20 °C (68 °F):</b>	128 hPa (96 mm Hg)
<b>· Density at 20 °C (68 °F):</b>	0.89916 g/cm <sup>3</sup> (7.50349 lbs/gal)
<b>· Relative density</b>	Not determined.
<b>· Vapor density</b>	Not determined.
<b>· Evaporation rate</b>	Not determined.
<b>· Solubility in / Miscibility with Water:</b>	Not miscible or difficult to mix.
<b>· Partition coefficient (n-octanol/water):</b>	Not determined.
<b>· Viscosity:</b>	
<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.
<b>· Solvent content:</b>	
<b>Organic solvents:</b>	86.1 %
<b>VOC content:</b>	86.11 %
	774.3 g/l / 6.46 lb/gl
<b>· Solids content:</b>	0.0 %
<b>· Other information</b>	No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.

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· **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

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

**ATE (Acute Toxicity Estimate)**

Oral	LD50	1,304-2,835 mg/kg (rat)
Inhalative	LC50/4 h	148 mg/l

**CAS: 67-56-1 Methanol (Methyl Alcohol)**

Oral	LD50	100 mg/kg (ATE)
Dermal	LD50	300 mg/kg (ATE)
Inhalative	LC50/4 h	3 mg/l (ATE)

**CAS: 7726-95-6 Bromine**

Inhalative	LC50/4 h	0.5 mg/l (ATE)
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- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
The product shows the following dangers according to internally approved calculation methods for preparations:  
Harmful  
Irritant
- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water  
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.

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- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

- |   |                                      |
|---|--------------------------------------|
| <b>· UN-Number</b>  | UN1993                               |
| <b>· DOT, IMDG, IATA</b>  |                                      |
| <b>· UN proper shipping name</b>  | Flammable liquids, n.o.s. (Methanol) |
| <b>· DOT</b>  | FLAMMABLE LIQUID, N.O.S. (METHANOL)  |
| <b>· IMDG, IATA</b>   |                                      |
| <b>· Transport hazard class(es)</b>   |                                      |
| <b>· DOT</b>  |                                      |
|  |                                      |
| <b>· Class</b>  | 3 Flammable liquids                  |
| <b>· Label</b>  | 3                                    |
|   |                                      |
| <b>· IMDG, IATA</b>   |                                      |
|  |                                      |
| <b>· Class</b>  | 3 Flammable liquids                  |
| <b>· Label</b>  | 3                                    |
| <b>· Packing group</b>  | II                                   |
| <b>· DOT, IMDG, IATA</b>  |                                      |
| <b>· Environmental hazards:</b>   | Not applicable.                      |
| <b>· Special precautions for user</b>   | Warning: Flammable liquids           |
| <b>· Danger code (Kemler):</b>  | 33                                   |
| <b>· EMS Number:</b>  | F-E, <u>S-E</u>                      |
| <b>· Stowage Category</b>   | B                                    |
| <b>· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>    | Not applicable.                      |

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**· Transport/Additional information:**

**· DOT**

**· Quantity limitations**

On passenger aircraft/rail: 1 L

On cargo aircraft only: 5 L

**· IMDG**

**· Limited quantities (LQ)**

1L

**· Excepted quantities (EQ)**

Code: E2

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 500 ml

**· UN "Model Regulation":**

UN 1993 FLAMMABLE LIQUIDS, N.O.S. (METHANOL), 3, II

## 15 Regulatory information

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

**· Sara**

**· Section 355 (extremely hazardous substances):**

CAS: 7726-95-6	Bromine
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**· Section 313 (Specific toxic chemical listings):**

CAS: 67-56-1	Methanol (Methyl Alcohol)
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CAS: 7726-95-6	Bromine
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**· TSCA (Toxic Substances Control Act):**

Methanol (Methyl Alcohol)

Sodium Bromide

Bromine

**· Proposition 65**

**· Chemicals known to cause cancer:**

None of the ingredients is listed.

**· Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

**· Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

**· Chemicals known to cause developmental toxicity:**

CAS: 67-56-1	Methanol (Methyl Alcohol)
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**· Carcinogenic categories**

**· EPA (Environmental Protection Agency)**

None of the ingredients is listed.

**· TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

**· NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

**· GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

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· **Hazard pictograms**



GHS02    GHS07    GHS08

· **Signal word** *Danger*

· **Hazard-determining components of labeling:**

*Methanol (Methyl Alcohol)*

· **Hazard statements**

*Extremely flammable liquid and vapor.*

*Harmful if swallowed.*

*Causes skin irritation.*

*Causes serious eye irritation.*

*Causes damage to organs.*

· **Precautionary statements**

*Keep away from heat/sparks/open flames/hot surfaces. - No smoking.*

*Keep container tightly closed.*

*Ground/bond container and receiving equipment.*

*Use explosion-proof electrical/ventilating/lighting/equipment.*

*Use only non-sparking tools.*

*Take precautionary measures against static discharge.*

*Do not breathe dust/fume/gas/mist/vapors/spray.*

*Wash thoroughly after handling.*

*Do not eat, drink or smoke when using this product.*

*Wear protective gloves/protective clothing/eye protection/face protection.*

*If swallowed: Call a poison center/doctor if you feel unwell.*

*If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.*

*If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.*

*Continue rinsing.*

*Specific treatment (see on this label).*

*Rinse mouth.*

*If skin irritation occurs: Get medical advice/attention.*

*If eye irritation persists: Get medical advice/attention.*

*Take off contaminated clothing and wash it before reuse.*

*In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.*

*Store in a well-ventilated place. Keep cool.*

*Store locked up.*

*Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 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.*

· **Department issuing SDS:** Environment protection department.

· **Contact:**

· **Date of preparation / last revision**

*01-29-2018: review SDS for accuracy. STN*

*Revision 0.0. 01-11-2016: creation date for SDS. STN*

*01/29/2018 / -*

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**· Abbreviations and acronyms:**

*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*

*DOT: US Department of Transportation*

*IATA: International Air Transport Association*

*ACGIH: American Conference of Governmental Industrial Hygienists*

*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)*

*NFPA: National Fire Protection Association (USA)*

*HMIS: Hazardous Materials Identification System (USA)*

*VOC: Volatile Organic Compounds (USA, EU)*

*LC50: Lethal concentration, 50 percent*

*LD50: Lethal dose, 50 percent*

*PBT: Persistent, Bioaccumulative and Toxic*

*vPvB: very Persistent and very Bioaccumulative*

*NIOSH: National Institute for Occupational Safety*

*OSHA: Occupational Safety & Health*

*TLV: Threshold Limit Value*

*PEL: Permissible Exposure Limit*

*REL: Recommended Exposure Limit*

*BEI: Biological Exposure Limit*

*Flam. Liq. 1: Flammable liquids – Category 1*

*Acute Tox. 4: Acute toxicity – Category 4*

*Skin Irrit. 2: Skin corrosion/irritation – Category 2*

*Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A*

*STOT SE 1: Specific target organ toxicity (single exposure) – Category 1*

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