

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

Revision date: 11.08.2021

Product code: 16854

Page 1 of 12

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

1.1. Product identifier

Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

UFI: S0PG-K1TP-G00S-JQSJ

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Uses advised against

Do not use for private purposes (household).

1.3. Details of the supplier of the safety data sheet

Company name:	Fa. Bernd Kraft GmbH	
Street:	Stempelstraße 6	
Place:	D-47167 Duisburg	
Telephone:	0203/5194-0	Telefax: 0203/5194-290
e-mail:	info@berndkraft.de	
Contact person:	Abteilung Produktsicherheit	Telephone: 0203/5194-107/117
e-mail:	produktsicherheit@berndkraft.de	
Internet:	www.berndkraft.de	
Responsible Department:	Abteilung Produktsicherheit	

1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

Further Information

This product is a mixture. REACH Registration Number see section 3.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute Tox. 1; H330
Skin Corr. 1A; H314
Eye Dam. 1; H318
STOT SE 3; H335
Aquatic Acute 1; H400

Full text of hazard statements: see SECTION 16.

2.2. Label elements

Regulation (EC) No 1272/2008

Hazard components for labelling

hydrobromic acid 38,9 %
bromine

Signal word: Danger

Pictograms:



Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

Revision date: 11.08.2021

Product code: 16854

Page 2 of 12

Hazard statements

H314	Causes severe skin burns and eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.

Precautionary statements

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves and eye/face protection.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Mixtures in aqueous solution

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
10035-10-6	hydrobromic acid ... %			35 - < 40 %
	233-113-0	035-002-01-8	01-2119479072-39	
	Skin Corr. 1B, STOT SE 3; H314 H335			
7726-95-6	bromine			15 - < 20 %
	231-778-1	035-001-00-5	01-2119461714-37	
	Acute Tox. 1, Skin Corr. 1A, Aquatic Acute 1; H330 H314 H400			
10035-10-6	hydrogen bromide			< 0.1 %
	233-113-0	035-002-00-0		
	Skin Corr. 1A, STOT SE 3; H314 H335			

Full text of H and EUH statements: see section 16.

Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
10035-10-6	233-113-0	hydrobromic acid ... %	35 - < 40 %
		Skin Corr. 1B; H314: >= 40 - 100 Skin Irrit. 2; H315: >= 10 - < 40 Eye Irrit. 2; H319: >= 10 - < 40 STOT SE 3; H335: >= 10 - 100	
7726-95-6	231-778-1	bromine	15 - < 20 %
		inhalation: ATE = 0,05 mg/l (vapours); inhalation: ATE = 0,005 mg/l (dusts or mists) M acute; H400: M=100	

Further Information

This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of = 0.1 % (w/w).

Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

Revision date: 11.08.2021

Product code: 16854

Page 3 of 12

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Self-protection of the first aider
Take off immediately all contaminated clothing.

After inhalation

Provide fresh air.
If breathing is irregular or stopped, administer artificial respiration.
Call a physician immediately.

After contact with skin

Wash immediately with: Water
Take off immediately all contaminated clothing and wash it before reuse.
Call a physician immediately.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.
Remove contact lenses, if present and easy to do. Continue rinsing.
Protect uninjured eye.

After ingestion

Rinse mouth immediately and drink plenty of water.
Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

No data available

4.3. Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

no restriction

5.2. Special hazards arising from the substance or mixture

Non-combustible liquids
Hazardous combustion products
In case of fire may be liberated:
Bromine
Hydrogen bromide (HBr)

5.3. Advice for firefighters

Do not inhale explosion and combustion gases.
Avoid contact with skin, eyes and clothes.
In case of fire: Wear self-contained breathing apparatus.

Additional information

Suppress gases/vapours/mists with water spray jet.
Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
Move undamaged containers from immediate hazard area if it can be done safely.
Use water spray jet to protect personnel and to cool endangered containers.

SECTION 6: Accidental release measures

Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

Revision date: 11.08.2021

Product code: 16854

Page 4 of 12

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

- Provide adequate ventilation.
- Use personal protection equipment.
- Avoid contact with skin, eyes and clothes.
- Remove persons to safety.
- Emergency procedures
- Do not breathe dust/fume/gas/mist/vapours/spray.

For emergency responders

Precautionary statements For emergency responders : Personal protection equipment: see section 8

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

For containment

- Cover drains.
- Prevent spread over a wide area (e.g. by containment or oil barriers).
- Collect in closed and suitable containers for disposal.
- Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

For cleaning up

Clean contaminated articles and floor according to the environmental legislation.

Other information

- Provide adequate ventilation.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Wear breathing apparatus if exposed to vapours/dusts/aerosols.

6.4. Reference to other sections

- Safe handling: see section 7
- Personal protection equipment: see section 8
- Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

- Read label before use. Handle and open container with care.
- When using do not eat, drink, smoke, sniff. Keep container tightly closed.
- Use personal protection equipment. Use extractor hood (laboratory).
- Provide adequate ventilation. Do not breathe vapour/aerosol.
- Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

Usual measures for fire prevention.

Advice on general occupational hygiene

- Keep away from food, drink and animal feedingstuffs. Make available sufficient washing facilities
- Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme.
- Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Further information on handling

- Draw up and observe skin protection programme.
- Wash hands and face before breaks and after work and take a shower if necessary.
- Take off immediately all contaminated clothing and wash it before reuse.
- If handled uncovered, arrangements with local exhaust ventilation have to be used.

7.2. Conditions for safe storage, including any incompatibilities

Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

Revision date: 11.08.2021

Product code: 16854

Page 5 of 12

Requirements for storage rooms and vessels

Store in a well-ventilated place. Keep container tightly closed.
Store in a place accessible by authorized persons only.

Further information on storage conditions

Store in a dry place.
Keep cool. Protect from sunlight.

7.3. Specific end use(s)

Laboratory chemicals

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits

CAS No	Substance	ppm	mg/m ³	fib/cm ³	Category	Origin
7726-95-6	Bromine	0.1	0.7		TWA (8 h)	
10035-10-6	Hydrogen bromide	2	6.6		STEL (15 min)	

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
7726-95-6	bromine			
Worker DNEL, long-term		inhalation	systemic	0,7 mg/m ³
Worker DNEL, acute		inhalation	systemic	0,7 mg/m ³
Worker DNEL, long-term		inhalation	local	0,7 mg/m ³
Worker DNEL, acute		inhalation	local	0,7 mg/m ³
10035-10-6	hydrogen bromide			
Worker DNEL, long-term		inhalation	systemic	6,7 mg/m ³
Worker DNEL, acute		inhalation	systemic	6,7 mg/m ³
Worker DNEL, long-term		inhalation	local	6,7 mg/m ³
Worker DNEL, acute		inhalation	local	6,7 mg/m ³

PNEC values

CAS No	Substance	Value
7726-95-6	bromine	
Freshwater		0,001 mg/l
Marine water		0,001 mg/l
10035-10-6	hydrogen bromide	
Freshwater		0,019 mg/l

8.2. Exposure controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Do not breathe gas/fumes/vapour/spray.

Individual protection measures, such as personal protective equipment

Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

Revision date: 11.08.2021

Product code: 16854

Page 6 of 12

Eye/face protection

goggles
Wear eye/face protection.

Hand protection

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: vertrieb@kcl.de With specification (test according to EN374):

By long-term hand contact
Trade name/designation KCL 890 Vitoject®
Suitable material: FKM (fluoro rubber) 0,7 mm
Wearing time with permanent contact: > 480 min

By short-term hand contact
Trade name/designation KCL 890 Vitoject®
Suitable material: FKM (fluoro rubber) 0,7 mm
Wearing time with occasional contact (splashes): > 480 min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Skin protection

Wear suitable protective clothing.
Take off immediately all contaminated clothing.
Wash hands before breaks and after work.

Respiratory protection

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

Environmental exposure controls

Do not allow to enter into surface water or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Liquid
Colour:	clear red
Odour:	characteristic
Odour threshold:	No data available

Changes in the physical state

Melting point/freezing point:	No data available
Boiling point or initial boiling point and boiling range:	No data available
Sublimation point:	No data available
Softening point:	No data available
Pour point:	No data available
No data available:	
Flash point:	No data available

Flammability

Solid/liquid:	No data available
Gas:	No data available

Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

Revision date: 11.08.2021

Product code: 16854

Page 7 of 12

Explosive properties

No data available

Lower explosion limits:

No data available

Upper explosion limits:

No data available

Auto-ignition temperature:

No data available

Self-ignition temperature

Solid:

No data available

Gas:

No data available

Decomposition temperature:

No data available

pH-Value (at 20 °C):

<0

Viscosity / dynamic:

No data available

Viscosity / kinematic:

No data available

Flow time:

No data available

Water solubility:

No data available

Solubility in other solvents

No data available

Dissolution rate:

No data available

Partition coefficient n-octanol/water:

No data available

Dispersion stability:

No data available

Vapour pressure:

No data available

Vapour pressure:

No data available

Density:

1,68375 g/cm³

Relative density:

No data available

Bulk density:

No data available

Relative vapour density:

No data available

Particle characteristics:

No data available

9.2. Other information

Information with regard to physical hazard classes

Sustaining combustion:

No data available

Oxidizing properties

No data available

Other safety characteristics

Solvent separation test:

No data available

Solvent content:

0

Solid content:

0

Evaporation rate:

No data available

Further Information

No data available

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available

10.2. Chemical stability

No data available

10.3. Possibility of hazardous reactions

Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

Revision date: 11.08.2021

Product code: 16854

Page 8 of 12

No data available

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

No data available

10.6. Hazardous decomposition products

In case of fire may be liberated:
SECTION 5: Firefighting measures

Further information

No data available

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Toxicokinetics, metabolism and distribution

There are no data available on the preparation/mixture itself.

Acute toxicity

Fatal if inhaled.

ATEmix calculated

ATE (inhalation vapour) 0,26 mg/l; ATE (inhalation dust/mist) 0,026 mg/l

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
7726-95-6	bromine				
	inhalation vapour	ATE 0,05 mg/l			
	inhalation dust/mist	ATE 0,005 mg/l			

Irritation and corrosivity

Causes severe skin burns and eye damage.
Causes serious eye damage.

Sensitising effects

Based on available data, the classification criteria are not met.

Carcinogenic/mutagenic/toxic effects for reproduction

Based on available data, the classification criteria are not met.

STOT-single exposure

May cause respiratory irritation. (hydrobromic acid ... %)

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.

Information on likely routes of exposure

There are no data available on the preparation/mixture itself.

Specific effects in experiment on an animal

There are no data available on the preparation/mixture itself.

Additional information on tests

There are no data available on the preparation/mixture itself.

Practical experience

There are no data available on the preparation/mixture itself.

11.2. Information on other hazards

Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

Revision date: 11.08.2021

Product code: 16854

Page 9 of 12

Endocrine disrupting properties

There are no data available on the preparation/mixture itself.

Other information

There are no data available on the preparation/mixture itself.

Further information

There are no data available on the preparation/mixture itself.

SECTION 12: Ecological information

12.1. Toxicity

There are no data available on the mixture itself.

CAS No	Chemical name						
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method	
10035-10-6	hydrobromic acid ... %						
	Acute algae toxicity	ErC50 56 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (1999)	EU Method C.3	
7726-95-6	bromine						
	Acute crustacea toxicity	EC50 mg/l ca. 1	48 h	Daphnia magna	Bull. Environ. Contam. Toxicol., Vol. 24	The study authors employed standard acut	
10035-10-6	hydrogen bromide						
	Acute algae toxicity	ErC50 56 mg/l	72 h	Pseudokirchneriella subcapitata	Study report (1999)	EU Method C.3	

12.2. Persistence and degradability

There are no data available on the mixture itself.

12.3. Bioaccumulative potential

There are no data available on the mixture itself.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
7726-95-6	bromine	-1,49

12.4. Mobility in soil

There are no data available on the mixture itself.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

There are no data available on the mixture itself.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

There are no data available on the mixture itself.

12.7. Other adverse effects

There are no data available on the mixture itself.

Further information

Do not allow to enter into surface water or drains.

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

Revision date: 11.08.2021

Product code: 16854

Page 10 of 12

Disposal recommendations

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.
Dispose of waste according to applicable legislation.
Do not allow to enter into surface water or drains.
Send to a hazardous waste incinerator facility under observation of official regulations.

Contaminated packaging

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.
Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number or ID number: UN 2922
14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (hydrogen bromide, bromine)
14.3. Transport hazard class(es): 8
14.4. Packing group: I
Hazard label: 8+6.1
Classification code: CT1
Special Provisions: 274
Limited quantity: 0
Excepted quantity: E0
Transport category: 1
Hazard No: 886
Tunnel restriction code: C/D

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 2922
14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (hydrogen bromide, bromine)
14.3. Transport hazard class(es): 8
14.4. Packing group: I
Hazard label: 8+6.1
Classification code: CT1
Special Provisions: 274 802
Limited quantity: 0
Excepted quantity: E0

Marine transport (IMDG)

14.1. UN number or ID number: UN 2922
14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (hydrogen bromide, bromine)
14.3. Transport hazard class(es): 8
14.4. Packing group: I
Hazard label: 8+6.1
Special Provisions: 274
Limited quantity: 0
Excepted quantity: E0
EmS: F-A, S-B

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 2922
14.2. UN proper shipping name: CORROSIVE LIQUID, TOXIC, N.O.S. (hydrogen bromide, bromine)
14.3. Transport hazard class(es): 8
14.4. Packing group: I
Hazard label: 8+6.1
Special Provisions: A3 A803
Limited quantity Passenger: Forbidden

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

Revision date: 11.08.2021

Product code: 16854

Page 11 of 12

Passenger LQ:	Forbidden	
Excepted quantity:	E0	
IATA-packing instructions - Passenger:		850
IATA-max. quantity - Passenger:		0.5 L
IATA-packing instructions - Cargo:		854
IATA-max. quantity - Cargo:		2.5 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS:	Yes
Danger releasing substance:	bromine

SECTION 15: Regulatory information

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

EU regulatory information

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 75

Information according to 2012/18/EU (SEVESO III): H1 ACUTE TOXIC

Additional information: E1

National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

Water hazard class (D): 2 - obviously hazardous to water

SECTION 16: Other information

Changes

This data sheet contains changes from the previous version in section(s): 1,2,8,9,11,12,14,15.

Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Acute Tox. 1; H330	Calculation method
Skin Corr. 1A; H314	Calculation method
Eye Dam. 1; H318	Calculation method
STOT SE 3; H335	Calculation method
Aquatic Acute 1; H400	Calculation method

Relevant H and EUH statements (number and full text)

H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Bromine-hydrobromic acid mixture pure mixed 1 : 9 volumetrically

Revision date: 11.08.2021

Product code: 16854

Page 12 of 12

The receiver of our product is singularly responsible for adhering to existing laws and regulations.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)