

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/27/2007

Reviewed on 03/27/2007

1 Identification of substance:

Product details:

Product name: Hydrobromic acid, 45% in acetic acid

Stock number:

A14475

L07060

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department.

After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Hydrogen bromide (CAS# 10035-10-6): 45%

Acetic acid (CAS# 64-19-7): 55%

3 Hazards identification

Hazard description:



C Corrosive

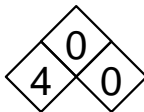
Information pertaining to particular dangers for man and environment

R 10 Flammable.

R 35 Causes severe burns.

Classification system

NFPA Ratings (scale 0-4)



Health = 4

Fire = 0

Reactivity = 0

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	3
FIRE	2
REACTIVITY	1

Health (acute effects) = 3

Flammability = 2

Reactivity = 1

4 First aid measures

General information

Immediately remove any clothing soiled by the product.

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After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents**

Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Hydrogen bromide (HBr)

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Keep away from ignition sources.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Prevent formation of aerosols.

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Information about protection against explosions and fires:

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Storage**Requirements to be met by storerooms and receptacles:**

No special requirements.

Information about storage in one common storage facility:

Store away from strong bases.

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Hydrogen bromide

	ppm
ACGIH TLV	2-CEILING
Austria MAK	3
Belgium TWA	2
Denmark TWA	3
Finland TWA	3
Germany MAK	2-STEL
Ireland TWA	3
Netherlands MAC-TGG	2
Norway TWA	3
Poland TWA	7, 21-STEL (mg/m ³)
Russia TWA	2-STEL (mg/m ³)
Sweden NGV	
Switzerland MAK-W	3; 6-KZG-W
United Kingdom TWA	3-STEL
USA PEL	3

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Components with limit values that require monitoring at the workplace:

Acetic acid

	ppm
ACGIH TLV	10; 15-STEL
Australia TWA	10; 15-STEL
Austria MAK	10
Belgium	10; 15-STEL
Denmark TWA	10
Finland TWA	10; 15-STEL (skin)
France VLE	10
Germany MAK	10
Hungary	4; 8-STEL
Japan OEL	10
Korea TLV	10; 15-STEL
Netherlands MAC-TGG	10
Norway TWA	10
Poland TWA	2; 14-STEL
Russia	2-STEL (skin)
Sweden NGV	5; 10-KTV
Switzerland MAK-W	10; 20-KZG-W
United Kingdom	10; 15-STEL
USA PEL	10

Additional information: No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection:

Safety glasses

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Liquid
Color:	Clear
Odor:	Acidic

Change in condition

Melting point/Melting range:	Not determined
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Boiling point/Boiling range:	126°C (259°F)
Sublimation temperature / start:	Not determined
Flash point:	Not determined
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density:	Not determined
Solubility in / Miscibility with Water:	Fully miscible

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Bases

Oxidizing agents

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide

Hydrogen bromide

11 Toxicological information**Acute toxicity:****LD/LC50 values that are relevant for classification:**

Hydrogen bromide (CAS# 10035-10-6)

Inhalative: LC50/1H: 814 ppm/1H (mus)

LC50/1H: 2858 ppm/1H (rat)

Primary irritant effect:**on the skin:**

Strong corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

on the eye:

Strong corrosive effect.

Irritating effect.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

Hydrobromic acid is corrosive and irritating to skin, eye and mucous membranes. Eye contact may result in severe burns and inhalation of fumes may cause lung damage. Dilute solutions have a reduced effect.

Acetic acid is corrosive and causes burns, lachrymation and conjunctivitis. It may cause skin ulcers and dermatitis. Inhalation or ingestion may cause irritation. Severity of symptoms is a function of concentration.

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Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus.

May cause skin burns or irritation depending on the severity of the exposure.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:****Recommendation**

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information**DOT regulations:**

Hazard class:	8
Identification number:	UN2920
Packing group:	II
Proper shipping name (technical name):	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Hydrobromic acid, 45% in acetic acid)
Label	8+3

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Land transport ADR/RID (cross-border)

ADR/RID class: 8 (CF1) Corrosive substances
Danger code (Kemler): 83
UN-Number: 2920
Packaging group: II
Description of goods: 2920 CORROSIVE LIQUID, FLAMMABLE, N.O.S.
 (Hydrobromic acid, 45% in acetic acid)

Maritime transport IMDG:

IMDG Class: 8
UN Number: 2920
Label 8+3
Packaging group: II
Proper shipping name: CORROSIVE LIQUID, FLAMMABLE, N.O.S.
 (Hydrobromic acid, 45% in acetic acid)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 8
UN/ID Number: 2920
Label 8+3
Packaging group: II
Proper shipping name: CORROSIVE LIQUID, FLAMMABLE, N.O.S.
 (Hydrobromic acid, 45% in acetic acid)

15 Regulations**Product related hazard informations:****Hazard symbols:**

C Corrosive

Risk phrases:

10 Flammable.

35 Causes severe burns.

Safety phrases:

20 When using do not eat or drink.

23 Do not breathe gas/fumes/vapour/spray.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately.

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National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Paul V. Connolly

USA