

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 07/07/2009

Reviewed on 07/03/2009

1 Identification of substance:**Product details:****Product name:** Piperazine dihydrochloride monohydrate**Stock number:** A18520**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#)**

Piperazine dihydrochloride monohydrate (CAS# 6091-62-9):
 100%

Identification number(s):**EINECS Number:** 205-551-2**Index number:** 612-241-00-4**3 Hazards identification****Hazard description:**

Xn Harmful

Information pertaining to particular dangers for man and environment

R 36/38 Irritating to eyes and skin.

R 42/43 May cause sensitization by inhalation and skin contact.

R 62 Possible risk of impaired fertility

R 52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

R 63 Possible risk of harm to the unborn child

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	1
REACTIVITY	1

Health (acute effects) = 1

Flammability = 1

Reactivity = 1

GHS label elements

Danger

3.4/1 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

3.2/2 - Causes skin irritation.

3.3/2A - Causes serious eye irritation.

3.4/1 - May cause an allergic skin reaction.

3.7/2 - Suspected of damaging fertility or the unborn child.

4.1/3 - Harmful to aquatic life with long lasting effects.

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

Contaminated work clothing should not be allowed out of the workplace.

Avoid release to the environment.

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

Use personal protective equipment as required.

In case of inadequate ventilation wear respiratory protection.

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Response:

IF ON SKIN: Wash with plenty of soap and water.

IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see label).

If skin irritation occurs: Get medical advice/attention.

If skin irritation or rash occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Take off contaminated clothing and wash before reuse.

Wash contaminated clothing before reuse.

Storage:

Store locked up.

Disposal:

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

4 First aid measures**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**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

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

Nitrogen oxides (NOx)

Hydrogen cyanide (HCN)

Hydrogen chloride (HCl)

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

Measures for environmental protection:

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

Measures for cleaning/collecting: Ensure adequate ventilation.**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.

Information about protection against explosions and fires: Keep ignition sources away.**Storage****Requirements to be met by storerooms and receptacles:** No special requirements.

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Information about storage in one common storage facility:

Store away from water/moisture.

Store away from oxidizing agents.

Further information about storage conditions:

This product is hygroscopic.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from humidity and water.

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: Not required.**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**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

Form:	Crystalline
Color:	White
Odor:	Odorless

Change in condition

Melting point/Melting range:	>300°C (>572°F)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

Flash point: Not applicable**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:**

Lower:	Not determined
Upper:	Not determined

Vapor pressure: Not determined**Density:** Not determined**Solubility in / Miscibility with**

Water:	Soluble
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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:

Water/moisture

Oxidizing agents

Dangerous reactions No dangerous reactions known

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Dangerous products of decomposition:

Carbon monoxide and carbon dioxide

Nitrogen oxides

Hydrogen chloride (HCl)

Hydrogen cyanide (prussic acid)

11 Toxicological information**Acute toxicity:****Primary irritant effect:****on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:**

Sensitization possible through inhalation.

Sensitization possible through skin contact.

Subacute to chronic toxicity:

Other than potential irritation (see above), no information on illness or injury to humans from acute or chronic exposure to this product is available.

Additional toxicological information:

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

Possible risk of impaired fertility.

Possible risk of harm to the unborn child.

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

12 Ecological information:**Ecotoxicological effects:****Remark:** Harmful to fish**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.

Harmful to aquatic organisms

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.**14 Transport information**

Not a hazardous material for transportation.

DOT regulations:**Hazard class:** None**Land transport ADR/RID (cross-border)****ADR/RID class:** None**Maritime transport IMDG:****IMDG Class:** None**Air transport ICAO-TI and IATA-DGR:****ICAO/IATA Class:** None**Transport/Additional information:** Not dangerous according to the above specifications.**15 Regulations****Product related hazard informations:****Hazard symbols:**

Xn Harmful

Risk phrases:

36/38 Irritating to eyes and skin.

42/43 May cause sensitization by inhalation and skin contact.

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62 Possible risk of impaired fertility

52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

63 Possible risk of harm to the unborn child

Safety phrases:

22 Do not breathe dust.

36/37 Wear suitable protective clothing and gloves.

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

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

63 In case of accident by inhalation: remove casualty to fresh air and keep at rest

National regulations

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

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:** Zachariah Holt**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)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

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