

**Safety Data Sheet**  
according to 1907/2006/EC, Article 31

Revision: 05.08.2010

Printing date 05.08.2010

**1 Identification of substance****Product details**

Trade name

**1,4-Dimethylpiperazine**

Stock number:

B24419, L11079

Manufacturer/Supplier:

Alfa Aesar GmbH & Co.KG  
Benzstrasse 3  
D-76185 Karlsruhe / GermanyE-mail: gcat@matthey.com  
www.alfa-chemcat.com

Informing department:

Product safety department.

Emergency information:

Giftnotruf Universität Mainz / Poison Information Center Mainz  
www.giftinfo.uni-mainz.de Telefon:+49(0)6131/19240**2 Hazards identification**

Hazard designation:



C Corrosive

Information pertaining to particular dangers for man and environment

R 10 Flammable.  
R 34 Causes burns.

GHS label elements

**Danger**

H225 - Highly flammable liquid and vapour.

**Danger**

H314 - Causes severe skin burns and eye damage.

Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Response:

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**3 Composition/information on ingredients**

Chemical characterization:

1,4-Dimethylpiperazine

Designation: (CAS#)

Identification number(s):

203-412-0

EINECS Number:

**4 First aid measures**

General information

Instantly remove any clothing soiled by the product.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

After skin contact

Seek immediate medical advice.

After eye contact

Instantly wash with water and soap and rinse thoroughly.

After swallowing

Seek immediate medical advice.

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

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 flue gases:

Can be released in case of fire:  
Carbon monoxide and carbon dioxide  
Nitrogen oxides (NOx)

Protective equipment:

Wear self-contained breathing apparatus.  
Wear full protective suit.**6 Accidental release measures**

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Measures for environmental protection:

Ensure adequate ventilation

Keep away from ignition sources

Measures for cleaning/collecting:

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

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

Use neutralizing agent.

Dispose of 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 information on disposal.

**7 Handling and storage**

Handling

Information for safe handling:

Keep containers tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Storage

Requirements to be met by storerooms and containers:

Store in cool location.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Do not store together with acids.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

(Contd. on page 2)  
GB

**Safety Data Sheet**  
according to 1907/2006/EC, Article 31

Revision: 05.08.2010

Printing date 05.08.2010

Trade name **1,4-Dimethylpiperazine**

(Contd. of page 1)

Store in a locked cabinet or with access restricted to technical experts or their assistants.

**8 Exposure controls and personal protection**

<b>Additional information about design of technical systems:</b>	Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.
<b>Components with critical values that require monitoring at the workplace:</b>	Not required.
<b>Additional information:</b>	No data
<b>Personal protective equipment</b>	The usual precautionary measures should be adhered to in handling the chemicals.
<b>General protective and hygienic measures</b>	Keep away from foodstuffs, beverages and food. Instantly remove any soiled and impregnated garments. Wash hands during breaks and at the end of the work. Avoid contact with the eyes and skin.
<b>Breathing equipment:</b>	Use breathing protection with high concentrations.
<b>Protection of hands:</b>	Check protective gloves prior to each use for their proper condition.
<b>Material of gloves</b>	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.
<b>Eye protection:</b>	Safety glasses Tightly sealed safety glasses.
<b>Body protection:</b>	Full face protection Face protection Protective work clothing.

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

<b>Form:</b>	Liquid
<b>Colour:</b>	Colourless
<b>Smell:</b>	Amine-like
<b>Change in condition</b>	
<b>Melting point/Melting range:</b>	-1°C
<b>Boiling point/Boiling range:</b>	131-132°C
<b>Sublimation temperature / start:</b>	Not determined
<b>Flash point:</b>	21°C
<b>Ignition temperature:</b>	180°C
<b>Decomposition temperature:</b>	Not determined
<b>Critical values for explosion:</b>	
<b>Lower:</b>	1.8 Vol %
<b>Upper:</b>	9.6 Vol %
<b>Steam pressure at 20°C:</b>	20 hPa
<b>Density at 20°C</b>	0.844 g/cm <sup>3</sup>
<b>Solubility in / Miscibility with Water:</b>	Fully miscible
<b>pH-value (100 g/l) at 20°C:</b>	10

**10 Stability and reactivity**

<b>Thermal decomposition / conditions to be avoided:</b>	No decomposition if used and stored according to specifications.
<b>Materials to be avoided:</b>	Oxidizing agents Acids
<b>Dangerous reactions:</b>	No dangerous reactions known
<b>Dangerous products of decomposition:</b>	Carbon monoxide and carbon dioxide Nitrogen oxides (NO <sub>x</sub> )

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

Oral	LD50	2800 mg/kg (rat)
Dermal	LD50	3000 mg/kg (rabbit)
Irritation of skin	severe	unknown mg (rabbit)

**Primary irritant effect:**

<b>on the skin:</b>	Corrosive effect on skin and mucous membranes.
<b>on the eye:</b>	Strong corrosive effect.
<b>Sensitization:</b>	No sensitizing effect known.
<b>Additional toxicological information:</b>	To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. Swallowing will lead to a strong caustic 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:****Additional ecological information:**

<b>General notes:</b>	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 bodies or sewage system. Do not allow material to be released to the environment without proper governmental permits.
-----------------------	---

**13 Disposal considerations**

<b>Product:</b>	
<b>Recommendation</b>	Consult state, local or national regulations for proper disposal. Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations.

(Contd. on page 3)

Trade name **1,4-Dimethylpiperazine**

(Contd. of page 2)

**Uncleaned packagings:**  
**Recommendation:** Disposal must be made according to official regulations.

**14 Transport information****Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)**

**ADR/RID-GGVS/E Class:** 3 (FC) Flammable liquids.  
**Kemler Number:** 338  
**UN-Number:** 2733  
**Packaging group:** II  
**Label:** 3+8  
**Designation of goods:** 2733 AMINES, FLAMMABLE, CORROSIVE, N.O.S. (1,4-Dimethylpiperazine)  
**Limited quantities (LQ):** LQ4  
**Transport category:** 2  
**Tunnel restriction code:** D/E

**Maritime transport IMDG/GGVSea:**

**IMDG/GGVSea Class:** 3  
**UN Number:** 2733  
**Label:** 3+8  
**Packaging group:** II  
**Marine pollutant:** No  
**Segregation groups:** Alkalis  
**Correct technical name:** AMINES, FLAMMABLE, CORROSIVE, N.O.S. (1,4-Dimethylpiperazine)

**Air transport ICAO-TI and IATA-DGR:**

**ICAO/IATA Class:** 3  
**UN/ID Number:** 2733  
**Label:** 3+8  
**Packaging group:** II  
**Correct technical name:** AMINES, FLAMMABLE, CORROSIVE, N.O.S. (1,4-Dimethylpiperazine)

**UN "Model Regulation":** UN2733, AMINES, FLAMMABLE, CORROSIVE, N.O.S., 3 (8), II

**15 Regulatory information****Designation according to EC guidelines:****Code letter and hazard designation of product:**

C Corrosive

**Risk phrases:** 10 Flammable.  
34 Causes burns.

**Safety phrases:** 16 Keep away from sources of ignition - No smoking.  
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 (show the label where possible).

**National regulations**

**Information about limitation of use:** Employment restrictions concerning young persons must be observed.  
For use only by technically qualified individuals.

**Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

**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 data specification sheet:** 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  
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)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent