

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 05/20/2003

Reviewed on 04/15/1999

**1 Identification of substance:****Product details:****Product name:** n-Pentane**Stock number:** 32449**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#)

n-Pentane (CAS# 109-66-0), 100%

**Identification number(s):****EINECS Number:** 203-692-4**EU Number:** 601-006-00-1**3 Hazards identification****Hazard description:**

F Highly flammable

**Information pertaining to particular dangers for man and environment**  
 R 11 Highly flammable.

**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.

USA

(Contd. on page 2)

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 05/20/2003

Reviewed on 04/15/1999

Product name: n-Pentane

(Contd. of page 1)

**5 Fire fighting measures****Suitable extinguishing agents**CO<sub>2</sub>, sand, extinguishing powder. Do not use water.**For safety reasons unsuitable extinguishing agents** Water**Special hazards caused by the material, its products of combustion or resulting gases:**

In case of fire, the following can be released:

Carbon monoxide (CO).

**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).

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.

**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:**

Store in a cool location.

**Information about storage in one common storage facility:**

Store away from oxidizing agents.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

USA

(Contd. on page 3)

**Alta Aesc**  
A Johnson Matthey Company**Alta Aesc**  
A Johnson Matthey Company**Alta Aesc**  
A Johnson Matthey Company

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 05/20/2003

Reviewed on 04/15/1999

Product name: n-Pentane

(Contd. of page 2)

**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:**

Pentane, all isomers

	ppm
ACGIH TLV	600
Belgium TWA	600, 750-STEEL
Denmark TWA	500
Finland TWA	500, 625-STEEL
France TWA	600
Germany TWA	1000
Hungary TWA	500 mg/m <sup>3</sup> , 1500 mg/m <sup>3</sup> -STEEL
Ireland TWA	600, 750-STEEL
Netherlands TWA	600
Poland TWA	100 mg/m <sup>3</sup>
Russia TWA	300, 300mg/m <sup>3</sup> -STEEL
Sweden TWA	600, 750-STEEL
Switzerland TWA	600
USA PEL	1000

Pentane (all isomers)

	ppm
ACGIH TLV	600
Belgium TWA	600; 750-STEEL
Denmark TWA	500
Finland TWA	500; 625-STEEL
France TWA	600
Germany TWA	1000
Hungary TWA	500; 1500-STEEL
Ireland TWA	600; 750-STEEL
Netherlands TWA	600 (n-Pentane)
Poland TWA	100
Russia TWA	300; 300-STEEL
Sweden TWA	600; 750-STEEL
Switzerland TWA	600
USA PEL	1000

**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.

**Breathing equipment:**

Use suitable respiratory protective device in case of insufficient ventilation.

Use suitable respirator when high concentrations are present.

**Protection of hands:** Impervious gloves

(Contd. on page 4)

USA

**Material Safety Data Sheet**

acc. to OSHA and ANSI

Printing date 05/20/2003

Reviewed on 04/15/1999

Product name: n-Pentane

(Contd. of page 3)

Eye protection: Safety glasses

Body protection: Protective work clothing.

**9 Physical and chemical properties:**

General Information	
Form:	Liquid
Color:	Colorless
Odor:	Not determined
Change in condition	
Melting point/Melting range:	-130°C (-202°F)
Boiling point/Boiling range:	36°C (97°F)
Sublimation temperature / start:	Not determined
Flash point:	-49°C (-56°F)
Ignition temperature:	260°C (500°F)
Decomposition temperature:	Not determined
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures is possible.
Explosion limits:	
Lower:	1.4 Vol %
Upper:	8.0 Vol %
Vapor pressure at 20°C (68°F):	554 hPa (416 mm Hg)
Density at 20°C (68°F):	0.631 g/cm <sup>3</sup>
Solubility in / Miscibility with Water:	Not miscible or difficult to mix

**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: Oxidizing agents

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide

**11 Toxicological information**

Acute toxicity:

LD/LC50 values that are relevant for classification:

Inhalative	LC50/4H	364000 mg/m <sup>3</sup> /4H (mus)
------------	---------	------------------------------------

Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

(Contd. on page 5)

USA

## Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/20/2003

Reviewed on 04/15/1999

Product name: n-Pentane

(Contd. of page 4)

**Subacute to chronic toxicity:**

Pentane isomers have a mild narcotic effect. Symptoms typically include drowsiness, and respiratory irritation. Heavy exposure may cause unconsciousness and, in extreme cases, death. Pentane isomers are irritating to the skin and eyes on contact. If ingested the liquid can be aspirated into the lungs where it will cause a rapid fall in oxygen and can cause asphyxia, brain damage and death. Chronic skin exposure is likely to cause dermatitis.

**Additional toxicological information:**

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

**14 Transport information****DOT regulations:**

**Hazard class:** 3  
**Identification number:** UN1265  
**Packing group:** I  
**Proper shipping name (technical name):** Pentanes

**Land transport ADR/RID (cross-border)**

**ADR/RID class:** 3 Flammable liquids  
**Item:** 1a  
**Danger code (Kemler):** 33  
**UN-Number:** 1265

(Contd. on page 6)

USA

# Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/20/2003

Reviewed on 04/15/1999

Packaging group: I  
 Proper shipping name: Pentanes

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 3  
 UN/ID Number: 1265  
 Proper shipping name: Pentanes

## 15 Regulations

~~Hazard symbols?~~ hazard information:

F Highly flammable

Risk phrases:

11 Highly flammable.

Safety phrases:

9 Keep container in a well-ventilated place.

16 Keep away from sources of ignition - No smoking.

29 Do not empty into drains.

33 Take precautionary measures against static discharges.

National regulations

All components of this product are listed in the U.S. Environmental 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: Darrell R. Sanders

USA