

MATERIAL SAFETY DATA SHEET (MSDS)

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

1.1. Product identifier

Product form : Substance
:
CAS No : 109-66-0
Product code : 00238
Chemical structure : $\text{CH}_3(\text{CH}_2)_3\text{CH}_3$

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Laboratory chemicals, Manufacture of substances

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, H225
Category 2
Specific target organ H336
toxicity — Single
exposure, Category 3,
Narcosis
Aspiration hazard, H304
Category 1
Hazardous to the aquatic H411
environment — Chronic
Hazard, Category 2

Full text of classification categories and H statements : see section 16

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Classification according to Directive 67/548/EEC or 1999/45/EC

F+; R12
Xn; R65
N; R51/53
R66
R67

Full text of R-phrases: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS02

GHS07

GHS08

GHS09

Signal word (CLP) : Danger

Hazard statements (CLP) : H225 - Highly flammable liquid and vapour
H304 - May be fatal if swallowed and enters airways
H336 - May cause drowsiness or dizziness
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (CLP) : P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P261 - Avoid breathing vapours, dust, fume, gas, mist
P273 - Avoid release to the environment
P301+P310 - IF SWALLOWED: immediately call a POISON CENTER or doctor/physician
P331 - Do NOT induce vomiting

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Name : n-PENTANE AR
CAS No : 109-66-0

Full text of R- and H-phrases: see section 16

3.2. Mixture

Not applicable

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SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
- First-aid measures after skin contact : Get immediate medical advice/attention. Wash skin with plenty of water.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention.
- First-aid measures after ingestion : Immediately call a POISON CENTER or doctor/physician. Rinse mouth.

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

- Symptoms/injuries after inhalation : May cause drowsiness or dizziness.
- Symptoms/injuries after eye contact : Causes serious eye irritation.
- Symptoms/injuries after ingestion : May be fatal if swallowed and enters airways. Harmful if swallowed.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Carbon dioxide. Dry powder. Foam. Water spray.
- Unsuitable extinguishing media : Do not use extinguishing media containing water.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Extremely flammable liquid and vapour.
- Explosion hazard : May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters

- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Remove ignition sources. Use special care to avoid static electric charges. No naked lights. No smoking.

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

- Protective equipment : Use personal protective equipment as required.
- Emergency procedures : Ventilate area.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : On land, sweep or shovel into suitable containers. Collect spillage.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.
- Precautions for safe handling : Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Use only non-sparking tools. Avoid contact with skin and eyes. Use only outdoors or in a well-ventilated area. Do not breathe vapours.

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Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.
Storage conditions : Keep in fireproof place. Keep container tightly closed. Store in original container. Store in a well-ventilated place.
Incompatible materials : Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Hand protection : Protective gloves
Eye protection : Chemical goggles or safety glasses
Skin and body protection : Wear suitable protective clothing
Respiratory protection : Wear respiratory protection

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Colour : Clear Colorless.
Odour : mild odor, gasoline-like, pleasant odor.
Odour threshold : No data available
pH : No data available
Relative evaporation rate (butylacetate=1) : 28.6
Melting point : -130 °C
Freezing point : No data available
Boiling point : 35 - 36 °C
Flash point : -49 °C
Auto-ignition temperature : 260 °C
Decomposition temperature : No data available
Flammability (solid, gas) : Flammable
Extremely flammable liquid and vapour
Vapour pressure : 579 hPa at 20 °C

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Relative vapour density at 20 °C	: 2.5
Relative density	: No data available
Density	: 0.62 g/cm ³
Solubility	: Water: 0.04 % at 20°C
Log Pow	: 3.39
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 0.014 - 0.083 vol %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Sparks. Heat. Open flame.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Not classified
Additional information	: Repeated exposure may cause skin dryness or cracking
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: May cause drowsiness or dizziness.

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Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

n-PENTANE AR (109-66-0)

Persistence and degradability	May cause long-term adverse effects in the environment.
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12.3. Bioaccumulative potential

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Log Pow	3.39
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12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose of contents/container to ...

Additional information : Handle empty containers with care because residual vapours are flammable.

Ecology - waste materials : Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR) : 1265

UN-No. (IMDG) : 1265

UN-No.(IATA) : 1265

UN-No.(ADN) : 1265

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UN-No. (RID) : 1265

14.2. UN proper shipping name

Proper Shipping Name (ADR) : PENTANES
Proper Shipping Name (IMDG) : PENTANES
Proper Shipping Name (IATA) : PENTANES
Proper Shipping Name (ADN) : PENTANES
Proper Shipping Name (RID) : PENTANES
Transport document description (ADR) : UN 1265 PENTANES, 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS
Transport document description (IMDG) : UN 1265 PENTANES, 3, II, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS
Transport document description (IATA) : UN 1265 PENTANES, 3, II, ENVIRONMENTALLY HAZARDOUS
Transport document description (ADN) : UN 1265 PENTANES, 3, II, ENVIRONMENTALLY HAZARDOUS
Transport document description (RID) : UN 1265 PENTANES, 3, II, ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 3
Danger labels (ADR) : 3



IMDG

Transport hazard class(es) (IMDG) : 3
Danger labels (IMDG) : 3



IATA

Transport hazard class(es) (IATA) : 3
Hazard labels (IATA) : 3



ADN

Transport hazard class(es) (ADN) : 3
Danger labels (ADN) : 3



RID

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Transport hazard class(es) (RID) : 3
Danger labels (RID) : 3



14.4. Packing group

Packing group (ADR) : II
Packing group (IMDG) : II
Packing group (IATA) : II
Packing group (ADN) : II
Packing group (RID) : II

14.5. Environmental hazards

Dangerous for the environment : Yes
Marine pollutant : Yes
Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : F1
Limited quantities (ADR) : 1L
Excepted quantities (ADR) : E2
Packing instructions (ADR) : P001, IBC02
Special packing provisions (ADR) : B8
Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T4
Portable tank and bulk container special provisions (ADR) : TP1
Tank code (ADR) : L1.5BN
Vehicle for tank carriage : FL
Transport category (ADR) : 2
Special provisions for carriage - Operation (ADR) : S2, S20
Hazard identification number (Kemler No.) : 33
Orange plates :



Tunnel restriction code (ADR) : D/E
EAC code : 3YE

- Transport by sea

Limited quantities (IMDG) : 1 L
Excepted quantities (IMDG) : E2
Packing instructions (IMDG) : P001
IBC packing instructions (IMDG) : IBC02
Tank instructions (IMDG) : T4
Tank special provisions (IMDG) : TP1
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D

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Stowage category (IMDG) : E
MFAG-No : 128

- Air transport

PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y341
PCA limited quantity max net quantity (IATA) : 1L
PCA packing instructions (IATA) : 353
PCA max net quantity (IATA) : 5L
CAO packing instructions (IATA) : 364
CAO max net quantity (IATA) : 60L
ERG code (IATA) : 3H

- Inland waterway transport

Classification code (ADN) : F1
Limited quantities (ADN) : 1 L
Excepted quantities (ADN) : E2
Carriage permitted (ADN) : T
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 1

- Rail transport

Classification code (RID) : F1
Limited quantities (RID) : 1L
Excepted quantities (RID) : E2
Packing instructions (RID) : P001, IBC02
Special packing provisions (RID) : B8
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T4
Portable tank and bulk container special provisions (RID) : TP1
Tank codes for RID tanks (RID) : L1.5BN
Transport category (RID) : 2
Colis express (express parcels) (RID) : CE7
Hazard identification number (RID) : 33

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

n-PENTANE AR is not on the REACH Candidate List

n-PENTANE AR is not on the REACH Annex XIV List

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15.1.2. National regulations

Germany

AwSV/VwVwS Annex reference : Water hazard class (WGK) 2, hazardous to water (Classification according to VwVwS, Annex 2; WGK No 452)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Denmark

Classification remarks : Emergency management guidelines for the storage of flammable liquids must be followed

Recommendations Danish Regulation : Young people below the age of 18 years are not allowed to use the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Full text of R-, H- and EUH-phrases:

Aquatic Chronic 2	Hazardous to the aquatic environment — Chronic Hazard, Category 2
Asp. Tox. 1	Aspiration hazard, Category 1
Flam. Liq. 2	Flammable liquids, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H225	Highly flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H336	May cause drowsiness or dizziness
H411	Toxic to aquatic life with long lasting effects
R12	Extremely flammable
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R65	Harmful: may cause lung damage if swallowed
R66	Repeated exposure may cause skin dryness or cracking
R67	Vapours may cause drowsiness and dizziness
F+	Extremely flammable
N	Dangerous for the environment
Xn	Harmful

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product