

Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and
GHS

Printing date 14.10.2013

Revision: 04.10.2013

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

- **1.1 Product identifier**
- **Trade name: n-Pentane**
- **CAS Number:**
109-66-0
- **EC number:**
203-692-4
- **Index number:**
601-006-00-1
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Solvents
- **1.3 Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
H-B Instrument – A Division of Bel-Art Products
102 West Seventh Avenue
Trappe, PA 19426 USA
Phone: (610) 489-5500
- **1.4 Emergency telephone number:**
ChemTel Inc.
(800)255-3924, +1 (813)248-0585

2 Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: H411.



GHS02 flame

Flam. Liq. 2 H225 Highly flammable liquid and vapour.



GHS08 health hazard

Asp. Tox. 1 H304 May be fatal if swallowed and enters airways.



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



GHS07

STOT SE 3 H336 May cause drowsiness or dizziness.

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

 Xn; Harmful

R65: Harmful: may cause lung damage if swallowed.

 F+; Extremely flammable

R12: Extremely flammable.

 N; Dangerous for the environment

R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R66-67: Repeated exposure may cause skin dryness or cracking. Vapours may cause drowsiness and dizziness.

· **Information concerning particular hazards for human and environment:**

At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The substance is classified and labelled according to the CLP regulation.

· **Hazard pictograms**



This pictogram only applicable for EU regulations. Not for use in the United States (OSHA GHS).



GHS02 GHS07 GHS08 GHS09

· **Signal word** Danger

· **Hazard-determining components of labelling:**

pentane

· **Hazard statements**

The following Hazard Statements are applicable only to the EU regulations and not the US GHS regulation: EUH066, H411.

H225 Highly flammable liquid and vapour.

H336 May cause drowsiness or dizziness.

H304 May be fatal if swallowed and enters airways.

H411 Toxic to aquatic life with long lasting effects.

· **Precautionary statements**

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

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

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

P403+P235 Store in a well-ventilated place. Keep cool.

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- **Additional information:**
EUH066 Repeated exposure may cause skin dryness or cracking.
- **Hazard description:**
- **WHMIS-symbols:**
B2 - Flammable liquid



- **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 4
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 0
Fire = 4
Reactivity = 0

- **HMIS Long Term Health Hazard Substances**

Substance is not listed.

- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **3.1 Substances**
- **CAS No. Description**
109-66-0 pentane
- **Identification number(s)**
- **EC number:** 203-692-4
- **Index number:** 601-006-00-1

4 First aid measures

- **4.1 Description of first aid measures**
- **General information:**
Take affected persons out into the fresh air.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Supply fresh air; consult doctor in case of complaints.
In case of unconsciousness place patient stably in side position for transportation.

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- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation continues, consult a doctor.
- **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; call for medical help immediately.
A person vomiting while laying on their back should be turned onto their side.
- **4.2 Most important symptoms and effects, both acute and delayed**
Headache
Dizziness
Cramp
Coughing
Nausea
- **Hazards**
Danger of pulmonary oedema.
Danger of impaired breathing.
Danger of disturbed cardiac rhythm.
Condition may deteriorate with alcohol consumption.
- **4.3 Indication of any immediate medical attention and special treatment needed**
If swallowed, gastric irrigation with added, activated carbon.
If swallowed or in case of vomiting, danger of entering the lungs.
Medical supervision for at least 48 hours.
Later observation for pneumonia and pulmonary oedema.

5 Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
Water haze or fog
Foam
Fire-extinguishing powder
Carbon dioxide
Gaseous extinguishing agents
- **For safety reasons unsuitable extinguishing agents:**
Water with full jet
Water spray
- **5.2 Special hazards arising from the substance or mixture**
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
- **Additional information**
Eliminate all ignition sources if safe to do so.

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Cool endangered receptacles with water fog or haze.

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6 Accidental release measures

· 6.1 Personal precautions, protective equipment and emergency procedures

Use respiratory protective device against the effects of fumes/dust/aerosol.

Wear protective equipment. Keep unprotected persons away.

Particular danger of slipping on leaked/spilled product.

Ensure adequate ventilation

Keep away from ignition sources.

Protect from heat.

· 6.2 Environmental precautions:

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· 6.3 Methods and material for containment and cleaning up:

Allow to evaporate.

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

Remove from the water surface (e.g. skim or suck off).

Send for recovery or disposal in suitable receptacles.

Dispose contaminated material as waste according to item 13.

· 6.4 Reference to other sections

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

· 7.1 Precautions for safe handling

Open and handle receptacle with care.

Keep away from heat and direct sunlight.

Prevent formation of aerosols.

Avoid splashes or spray in enclosed areas.

· Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Do not spray onto a naked flame or any incandescent material.

Use explosion-proof apparatus / fittings and spark-proof tools.

Fumes can combine with air to form an explosive mixture.

Flammable gas-air mixtures may form in empty receptacles.

Protect against electrostatic charges.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

· Requirements to be met by storerooms and receptacles:

Store in a cool location.

Provide ventilation for receptacles.

Avoid storage near extreme heat, ignition sources or open flame.

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- **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidizing agents.
- **Further information about storage conditions:**
Store in cool, dry conditions in well sealed receptacles.
Storage Temperatures : <86 ° F / <30 °C.
Keep container tightly sealed.
- **7.3 Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
Not required.

109-66-0 pentane

IOELV (EU)	Long-term value: 3000 mg/m ³ , 1000 ppm
PEL (USA)	Long-term value: 2950 mg/m ³ , 1000 ppm
REL (USA)	Short-term value: C 1800* mg/m ³ , C 610* ppm Long-term value: 350 mg/m ³ , 120 ppm *15-min
TLV (USA)	Long-term value: (1770) NIC-2950 mg/m ³ , (600) NIC-1000 ppm
EL (Canada)	Long-term value: 600 ppm
EV (Canada)	Short-term value: 2,210 mg/m ³ , 750 ppm Long-term value: 1,770 mg/m ³ , 600 ppm

- **DNELs** No further relevant information available.
- **PNECs** No further relevant information available.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
The usual precautionary measures are to be adhered to when handling chemicals.
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
Immediately remove all soiled and contaminated clothing.
Clean skin thoroughly immediately after handling the product.
- **Respiratory protection:**
Use suitable respiratory protective device in case of insufficient ventilation.
Use suitable respiratory protective device when aerosol or mist is formed.
For spills, respiratory protection may be advisable.
NIOSH approved organic vapor respirator equipped with a dust/mist prefilter should be used.

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- **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

- **Material of gloves**

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.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Safety glasses

- **Body protection:** Protective work clothing

- **Limitation and supervision of exposure into the environment**

No further relevant information available.

- **Risk management measures**

See Section 7 for additional information.

No further relevant information available.

9 Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

Form:	Fluid
Colour:	Colourless
Odour:	Nearly odourless
Odour threshold:	Not determined.

- **pH-value:** Not determined.

- **Change in condition**

Melting point/Melting range:	-201 °F / -130 °C
Boiling point/Boiling range:	> 97 °F / > 36 °C

- **Flash point:** <-40 °F / <-40 °C

- **Flammability (solid, gaseous):** Not applicable.

- **Ignition temperature:** 243 °F / 496 °C

- **Decomposition temperature:** Not determined.

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· Self-igniting:	Not determined.
· Danger of explosion:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.
· Explosion limits:	
Lower:	1,4 Vol %
Upper:	7,8 Vol %
· Vapour pressure at 25 °C:	513 mmHg
· Density at 20 °C:	0,63 g/cm ³
· Relative density	Not determined.
· Vapour density at 20 °C	2,48 g/cm ³ (Air = 1)
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic at 20 °C:	0,223 cP
Kinematic:	Not determined.
· 9.2 Other information	No further relevant information available.

10 Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** Keep away from heat and direct sunlight.
- **10.3 Possibility of hazardous reactions**
Can react violently with oxygen rich (oxidizing) material. Danger of Explosion.
Flammable.
Used empty containers may contain product gases which form explosive mixtures with air.
Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomised.
Develops readily flammable gases/fumes.
- **10.4 Conditions to avoid**
Keep ignition sources away - Do not smoke.
Store away from oxidizing agents.
Keep away from heat and direct sunlight.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** Carbon monoxide and carbon dioxide

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11 Toxicological information

- **11.1 Information on toxicological effects**

- **Acute toxicity:**

- **Primary irritant effect:**

- **on the skin:** No irritant effect.

- **on the eye:** No irritating effect.

- **Sensitization:** No sensitizing effects known.

- **Subacute to chronic toxicity:**

Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.

- **Additional toxicological information:**

At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.

- **Acute effects (acute toxicity, irritation and corrosivity):** Vapours have narcotic effect.

- **Repeated dose toxicity:** May cause damage to organs through prolonged or repeated exposure .

12 Ecological information

- **12.1 Toxicity**

- **Aquatic toxicity:** Toxic for aquatic organisms

- **12.2 Persistence and degradability** No further relevant information available.

- **12.3 Bioaccumulative potential**

Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.

- **12.4 Mobility in soil** No further relevant information available.

- **Ecotoxicological effects:**

- **Remark:**

Toxic for fish

The product is oxygen-consuming. The declared action may be partly caused by lack of oxygen.

- **Additional ecological information:**

- **General notes:**

Water hazard class 2 (German Regulation) (Assessment by list): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

Due to available data on eliminability/decomposition and bioaccumulation potential prolonged term damage of the environment can not be excluded.

- **12.5 Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

- **12.6 Other adverse effects** No further relevant information available.

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13 Disposal considerations

- **13.1 Waste treatment methods**

- **Recommendation**

Can be burned with household garbage after consulting with the waste disposal facility operator and the pertinent authorities and adhering to the necessary technical regulations.

Can be reused after reprocessing.

Contact waste processors for recycling information.

- **Uncleaned packaging:**

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

14 Transport information

- **14.1 UN-Number**

- DOT, ADR, IMDG, IATA

UN1265

- **14.2 UN proper shipping name**

- DOT, IMDG, IATA

PENTANES, LIQUID

- ADR

1265 PENTANE, FLÜSSIG

- **14.3 Transport hazard class(es)**

- DOT



- Class

3 Flammable liquids.

- Label

3

- ADR



- Class

3 (F1) Flammable liquids.

- Label

3

- IMDG, IATA



- Class

3 Flammable liquids.

- Label

3

- **14.4 Packing group**

- DOT, IMDG, IATA

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· ADR	I
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Warning: Flammable liquids.
· Danger code (Kemler):	33
· EMS Number:	F-E,S-D
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	0
· Transport category	1
· Tunnel restriction code	D/E
· UN "Model Regulation":	UN1265, PENTANES, ENVIRONMENTALLY HAZARDOUS, 3, I

15 Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

· **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

· **TSCA (Toxic Substances Control Act):**

Substance is listed.

· **Proposition 65 (California):**

· **Chemicals known to cause cancer:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for females:**

Substance is not listed.

· **Chemicals known to cause reproductive toxicity for males:**

Substance is not listed.

· **Chemicals known to cause developmental toxicity:**

Substance is not listed.

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**

Substance is not listed.

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· IARC (International Agency for Research on Cancer)
Substance is not listed.

· TLV (Threshold Limit Value established by ACGIH)
Substance is not listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)
Substance is not listed.

· OSHA-Ca (Occupational Safety & Health Administration)
Substance is not listed.

· Canada

· Canadian Domestic Substances List (DSL)
Substance is listed.

· Canadian Ingredient Disclosure list (limit 0.1%)
Substance is not listed.

· Canadian Ingredient Disclosure list (limit 1%)
Substance is listed.

· 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.
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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **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)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

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

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

· **Sources**

SDS Prepared by:

ChemTel Inc.

1305 North Florida Avenue

Tampa, Florida USA 33602-2902

Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573

Website: www.chemtelinc.com