

Safety Data Sheet

n-PENTANE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: n-PENTANE
USE: Refrigerant additive
CHEMICAL FAMILY: Paraffin Series Hydrocarbon

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2. HAZARDS IDENTIFICATION

CLASSIFICATION: Flammable Liquid
SIGNAL WORD: DANGER
HAZARD STATEMENT(S): Extremely flammable liquid
SYMBOL(S): Flames, Gas Cylinder



PRECAUTIONARY STATEMENT(S):

Prevention: Keep away from heat, sparks, open flame, and hot surfaces. No Smoking

Response: Leaking gas fire: Do not extinguish unless leak can be stopped immediately. Eliminate all ignition sources if safe to do so.

Storage: Protect from sunlight, store in a well ventilated place.

POTENTIAL HEALTH EFFECTS

Inhalation:

Vapors have a mild narcotic effect. Symptoms of overexposure may include drowsiness and irritation of the respiratory passages. Greater exposure may cause unconsciousness and death.

Ingestion:

Tends to vaporize when swallowed causing aspiration into the lungs. The result can be a rapid fall in oxygen content with asphyxia and consequent brain damage or cardiac arrest.

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Skin Contact:

Causes skin irritation, cracking or flaking due to dehydration and de-fatting action.

Eye Contact:

Very high vapor concentrations and liquid may cause irritation, redness, and pain.

Chronic Exposure:

Prolonged skin contact may cause drying, cracking, and dermatitis.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin conditions or impaired respiratory function may be more susceptible to the effects of this substance.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
n-PENTANE	109-66-0	100

COMMON NAME and SYNONYMS

Normal Pentane

There are no impurities or stabilizers that contribute to the classification of the material identified in Section 2

4. FIRST AID MEASURES

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:

DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:

Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. Wash clothes before reuse. Get medical attention if irritation develops or persists.

Eye Contact:

Wash thoroughly with running water. Get medical advice if irritation develops.

Advice to physician: No special instructions

5. FIRE FIGHTING MEASURES

Fire:

Flash point: -49C (-56F) CC

Autoignition temperature: 260C (500F)

Flammable limits in air % by volume:

l_{el}: 1.5; u_{el}: 7.8

Extremely Flammable Liquid and Vapor! Vapor may cause flash fire.

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Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.

Fire Extinguishing Media:

Dry chemical, foam or carbon dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. This highly flammable liquid must be kept from sparks, open flame, hot surfaces, and all sources of heat and ignition. Vapor explosion hazard exists indoors, outdoors, or in sewers.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK PROCEDURES:

Contain the spill. Eliminate sources of ignition. Use water spray to reduce vapors. For small spills, take up with absorbent material. If confined space – use self-contained breathing apparatus. Consult local fire authorities.

7. HANDLING AND STORAGE

NORMAL HANDLING: Watch for leaks and spills. Bond and ground during liquid transfer. Provide means to control leaks and spills. Protect from sources of ignition. Prohibit smoking in areas of storage or use.

STORAGE RECOMMENDATIONS:

Keep containers sealed and store in cool, well-ventilated area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:

PERSONAL PROTECTIVE EQUIPMENT:

SKIN PROTECTION:

Impervious, insulated gloves recommended. Impervious clothing for prolonged or repeated contact

EYE PROTECTION:

Face shield or goggles recommended

RESPIRATORY PROTECTION:

NIOSH approved self-contained breathing apparatus for confined areas or areas with poor ventilation.

EXPOSURE GUIDELINES

(Exposure Limits)

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
n-PENTANE	600 ppm	1000 ppm	

n-PENTANE

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Clear, Colorless liquid with sweet petroleum odor.
PHYSICAL STATE:	Liquid at ambient temperature
ODOR:	Sweet petroleum odor
SOLUBILITY IN WATER @ 70 Deg. F	0.0385 g / liter
BOILING POINT:	36°C / 97°F
VAPOR PRESSURE @ 70 Deg. F:	8.6 psia
FLASH POINT:	<-40°C (<-40°F)
EVAPORATION RATE:	> 1 (Ethyl Ether = 1.0)
FLAMMABILITY:	Extremely flammable
LEL/UEL:	1.5% / 7.8%
PARTITION COEFFICIENT n-OCTANOL/WATER:	Log Pow: 3.45
AUTO IGNITION TEMPERATURE:	260°C / 500°F
DECOMPOSITION TEMPERATURE:	Data not available
VISCOSITY:	Not applicable
VAPOR DENSITY (air = 1.00):	2.5
% VOLATILES BY VOLUME:	100%
DENSITY:	0.63 g/ml
pH:	Not applicable
MELTING POINT:	-130°C / -201°F
SPECIFIC GRAVITY (H2O=1.00):	0.631
MOLECULAR FORMULA:	C ₅ H ₁₂
MOLECULAR WEIGHT:	72.15

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY:
This product is stable.

REACTIVITY: Not reactive under normal conditions.

INCOMPATIBILITY WITH OTHER MATERIALS:
None

CONDITIONS TO AVOID:
High Heat, Sparks & Open Flames

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity

Value: LD50

Species: Rat

Value in non-standard unit: > 2.000 mg/kg

Slightly toxic.

Acute inhalation toxicity

Value: LC50

Species: Rat

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Value in non-standard unit: > 25,3 mg/l

Slightly toxic.

Acute dermal toxicity

Slightly toxic

Acute toxicity other routes

May be fatal if swallowed and enters airways.

Skin irritation

Not classified as an irritant. Repeated exposure may cause skin dryness or cracking. May cause dermatitis by skin contact.

Eye irritation

Not classified as an irritant. May cause mild, short-term discomfort to eyes.

Sensitization

This substance is not classified as a sensitiser.

Repeated dose toxicity

Not expected to cause damage to organs from prolonged or repeated exposure.

Assessment mutagenicity

There is no evidence of mutagenic potential.

Assessment carcinogenicity

No evidence of carcinogenic effects.

Assessment toxicity to reproduction

No indication of toxic effects.

Assessment teratogenicity

No indication of teratogenic effects.

12. ECOLOGICAL INFORMATION

DEGRADABILITY (BOD):

Environmental Fate:

When released into the soil, this material may biodegrade to a moderate extent. When released into the soil, this material is not expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material may biodegrade to a moderate extent. When released to water, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life of less than 1 day. This material has an estimated bioconcentration factor (BCF) of less than 100. This material has a log octanol-water partition coefficient of greater than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life between 1 and 10 days.

Environmental Toxicity:

No information found.

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13. DISPOSAL CONSIDERATIONS

Disposal must comply with federal, state, and local disposal laws

14. TRANSPORT INFORMATION

US DOT ID NUMBER:	UN 1265
US DOT SHIPPING NAME:	PENTANES
US DOT HAZARD CLASS:	3
US DOT PACKING GROUP:	II

15. REGULATORY INFORMATION

The ingredients listed in section 2 are reported/included in the U.S. TSCA inventory and Canadian domestics substance list.