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Version 1

## 1. IDENTIFICATION

**Product identifier****Product Name** N-Pentane**Other means of identification****SDS #** EF-107**Synonyms** n-PENTANE.**UN/ID No** UN1265**Recommended use of the chemical and restrictions on use****Recommended Use** Synthetic/Analytical chemistry.**Details of the supplier of the safety data sheet****Supplier Address**EFC Gases & Advanced Materials  
3266 Bergey Road  
Hatfield, PA 19440  
Email: [efcsafety@efcgases.com](mailto:efcsafety@efcgases.com)**Emergency telephone number****Company Phone Number**

215-443-9600

**Emergency Telephone**

INFOTRAC 1-352-323-3500 (International)

1-800-535-5053 (North America)

## 2. HAZARDS IDENTIFICATION

**Appearance** Colorless liquid**Physical state** Liquid**Odor** Characteristic**Classification**

Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1
Flammable liquids	Category 2

**Signal Word****Danger****Hazard statements**

May cause drowsiness or dizziness

May be fatal if swallowed and enters airways

Highly flammable liquid and vapor



**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 Avoid breathing dust/fume/gas/mist/vapors/spray  
 Use only outdoors or in a well-ventilated area  
 Keep away from heat/sparks/open flames/hot surfaces. — No smoking  
 Keep container tightly closed  
 Ground/bond container and receiving equipment  
 Use explosion-proof equipment  
 Use only non-sparking tools  
 Take precautionary measures against static discharge  
 Wear protective gloves/eye protection/face protection  
 Keep cool

**Precautionary Statements - Response**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower  
 IF INHALED: Remove person to fresh air and keep comfortable for breathing  
 Call a POISON CENTER or doctor if you feel unwell  
 IF SWALLOWED: Immediately call a POISON CENTER or doctor  
 Do NOT induce vomiting  
 Rinse mouth  
 IN CASE OF FIRE: Use CO<sub>2</sub>, dry chemical, or foam to extinguish

**Precautionary Statements - Storage**

Store locked up  
 Store in a well-ventilated place. Keep container tightly closed

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Other hazards**

Toxic to aquatic life with long lasting effects

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms** n-PENTANE.  
**Formula** C<sub>5</sub>-H<sub>12</sub>

Chemical name	CAS No	Weight-%
n-PENTANE	109-66-0	80-100

\*\*If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.\*\*

### 4. FIRST AID MEASURES

**Description of first aid measures**

**Eye Contact** Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

**Skin Contact** Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

**Inhalation** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Ingestion** Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

**Self-Protection of the First Aider** No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

#### **Most important symptoms and effects, both acute and delayed**

**Symptoms** May be harmful in contact with skin. May cause drowsiness or dizziness. May be fatal if swallowed and enters airways.

#### **Indication of any immediate medical attention and special treatment needed**

**Notes to Physician** Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

## **5. FIRE-FIGHTING MEASURES**

#### **Suitable Extinguishing Media**

Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray (fog). Foam.

**Unsuitable Extinguishing Media** Do not use water jet.

#### **Specific Hazards Arising from the Chemical**

Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

**Hazardous combustion products** Carbon dioxide (CO<sub>2</sub>). Carbon monoxide.

#### **Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

<b>Personal Precautions</b>	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provided adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
<b>For Emergency Responders</b>	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### Environmental precautions

<b>Environmental precautions</b>	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage. See Section 12 for additional Ecological Information.
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### Methods and material for containment and cleaning up

<b>Methods for Containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for Clean-Up</b>	<p>Small Spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.</p> <p>Large Spill: Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.</p>

## 7. HANDLING AND STORAGE

### Precautions for safe handling

<b>Advice on Safe Handling</b>	Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
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**Conditions for safe storage, including any incompatibilities**

<b>Storage Conditions</b>	Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
<b>Incompatible Materials</b>	None known based on information supplied.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Exposure Guidelines**

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
n-PENTANE 109-66-0	TWA: 1000 ppm	TWA: 1000 ppm TWA: 2950 mg/m <sup>3</sup> (vacated) TWA: 600 ppm (vacated) TWA: 1800 mg/m <sup>3</sup> (vacated) STEL: 750 ppm (vacated) STEL: 2250 mg/m <sup>3</sup>	IDLH: 1500 ppm Ceiling: 610 ppm 15 min Ceiling: 1800 mg/m <sup>3</sup> 15 min TWA: 120 ppm TWA: 350 mg/m <sup>3</sup>

**Appropriate engineering controls**

<b>Engineering Controls</b>	Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. Ensure that eyewash stations and safety showers are close to the workstation location.
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**Individual protection measures, such as personal protective equipment**

<b>Eye/Face Protection</b>	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. Recommended: safety glasses with side-shields. Refer to 29 CFR 1910.133 for eye and face protection regulations.
<b>Skin and Body Protection</b>	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Disposable vinyl, natural rubber (latex), neoprene, neoprene rubber, nitrile rubber, polyethylene (PE), polyvinyl chloride (PVC). Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling. Refer to 29 CFR 1910.138 for appropriate skin and body protection.
<b>Respiratory Protection</b>	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Refer to 29 CFR 1910.134 for respiratory protection requirements.

**General Hygiene Considerations** Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Physical state</b>	Liquid	<b>Odor</b>	Characteristic
<b>Appearance</b>	Colorless liquid	<b>Odor Threshold</b>	Not determined
<b>Color</b>	Colorless		
<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks • Method</u></b>	
<b>pH</b>	No data available		
<b>Melting point / freezing point</b>	-129.67 °C / -201.4 °F		
<b>Initial boiling point and boiling range</b>	36.06 °C / 96.9 °F		
<b>Flash point</b>	<-40 °C / <-40 °F	CC (closed cup)	
<b>Evaporation Rate</b>	10.46	(Butyl Acetate=1)	
<b>Flammability (Solid, Gas)</b>	Not determined		
<b>Flammability Limit in Air</b>			
<b>Upper flammability or explosive limits</b>	7.8%		
<b>Lower flammability or explosive limits</b>	1.5%		
<b>Vapor Pressure</b>	59		
<b>Vapor Density</b>	2.5	(Air=1)	
<b>Relative Density</b>	0.63		
<b>Water Solubility</b>	0.0385 g/l		
<b>Solubility in other solvents</b>	Not determined		
<b>Partition Coefficient</b>	3.45		
<b>Autoignition temperature</b>	260 °C / 500 °F		
<b>Decomposition temperature</b>	Not determined		
<b>Kinematic viscosity</b>	Not determined		
<b>Dynamic Viscosity</b>	0.224 mPa s		
<b>Explosive Properties</b>	Not determined		
<b>Oxidizing Properties</b>	Not determined		
<b><u>Other information</u></b>			
<b>Molecular weight</b>	72.15 g/mole		

## 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions.

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

None under normal processing.

### Conditions to Avoid

Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow gas to accumulate in low or confined areas.

### Incompatible materials

None known based on information supplied.

**Hazardous decomposition products**

None known based on information supplied.

**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure****Product Information**

<b>Eye Contact</b>	Avoid contact with eyes.
<b>Skin Contact</b>	May be harmful in contact with skin.
<b>Inhalation</b>	Do not inhale.
<b>Ingestion</b>	Do not ingest.

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
n-PENTANE 109-66-0	> 2000 mg/kg ( Rat )	= 3000 mg/kg ( Rabbit )	= 364 g/m <sup>3</sup> ( Rat ) 4 h

**Symptoms related to the physical, chemical and toxicological characteristics**

<b>Symptoms</b>	Please see section 4 of this SDS for symptoms.
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**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b>Carcinogenicity</b>	Based on the information provided, this product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
<b>STOT - single exposure</b>	May cause drowsiness or dizziness.
<b>Aspiration hazard</b>	May be fatal if swallowed and enters airways.

**Numerical measures of toxicity**

The following values are calculated based on chapter 3.1 of the GHS document

<b>Oral LD50</b>	>5,000.00 mg/kg
<b>Dermal LD50</b>	3,000.00 mg/kg
<b>ATEmix (inhalation-dust/mist)</b>	364.00 mg/l

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Toxic to aquatic life with long lasting effects.

**Component Information**

Chemical name	Algae/aquatic plants	Fish	Crustacea
n-PENTANE 109-66-0		LC50: =9.87mg/L (96h, Oncorhynchus mykiss) LC50: =11.59mg/L (96h, Pimephales promelas) LC50: =9.99mg/L (96h, Lepomis macrochirus)	EC50: =9.74mg/L (48h, Daphnia magna)

**Persistence/Degradability**

Not determined.

**Bioaccumulation**

There is no data for this product.

**Mobility**

Chemical name	Partition coefficient
n-PENTANE 109-66-0	3.45

**Other adverse effects**

Not determined

**13. DISPOSAL CONSIDERATIONS**

**Waste Treatment Methods**

- Disposal of Wastes**                      Disposal should be in accordance with applicable regional, national and local laws and regulations.
  
- Contaminated Packaging**              Disposal should be in accordance with applicable regional, national and local laws and regulations.

**California Hazardous Waste Status**

Chemical name	California Hazardous Waste Status
n-PENTANE 109-66-0	Toxic Ignitable

**14. TRANSPORT INFORMATION**

**Note**    Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

**DOT**

- UN/ID No**                                      UN1265
- Proper Shipping Name**                  Pentanes
- Transport hazard class(es)**              3
- Packing Group**                              I

**IATA**

- UN number or ID number**                  UN1265
- Proper Shipping Name**                  Pentanes
- Transport hazard class(es)**              3
- Packing group**                              I

**IMDG**

- UN number or ID number**                  UN1265
- Proper Shipping Name**                  Pentanes
- Transport hazard class(es)**              3
- Packing Group**                              I



## 15. REGULATORY INFORMATION

### International Inventories

Chemical name	TSCA	TSCA Inventory Status	DSL/NDSL	EINECS/ELINCS	ENCS	IECSC	KECL	PICCS	AICS
n-PENTANE	X	ACTIVE	X	X	X	X	X	X	X

#### **Legend:**

*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*

*DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List*

*EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

*ENCS - Japan Existing and New Chemical Substances*

*IECSC - China Inventory of Existing Chemical Substances*

*KECL - Korean Existing and Evaluated Chemical Substances*

*PICCS - Philippines Inventory of Chemicals and Chemical Substances*

*AICS - Australian Inventory of Chemical Substances*

### US Federal Regulations

#### **CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355).

#### **SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	Yes
<b>Chronic Health Hazard</b>	No
<b>Fire hazard</b>	Yes
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	No

#### **SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

#### **CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

### US State Regulations

#### **California Proposition 65**

This product does not contain any Proposition 65 chemicals.

#### **U.S. State Right-to-Know Regulations**

Chemical name	New Jersey	Massachusetts	Pennsylvania
n-PENTANE 109-66-0	X	X	X

**16. OTHER INFORMATION**

<b><u>NFPA</u></b>	<b>Health hazards</b>	<b>Flammability</b>	<b>Instability</b>	<b>Special hazards</b>
	1	3	0	-
<b><u>HMIS</u></b>	<b>Health hazards</b>	<b>Flammability</b>	<b>Physical hazards</b>	<b>Personal Protection</b>
	-	-	-	Not determined

**Issue Date:** 02-Jul-2024  
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**Revision Note:** New format

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**