

## 1. Identification

<b>Product identifier</b>	<b>n-PENTANE, HPLC</b>	
<b>Other means of identification</b>		
<b>Product code</b>	2491	
<b>Recommended use</b>	professional, scientific and technical activities: other professional, scientific and technical activities	
<b>Recommended restrictions</b>	None known.	
<b>Manufacturer/Importer/Supplier/Distributor information</b>		
<b>Company name</b>	GFS Chemicals, Inc.	
<b>Address</b>	P.O. Box 245 Powell OH 43065 US	
<b>Telephone</b>	Phone	740-881-5501
	Toll Free	800-858-9682
	Fax	740-881-5989
<b>Website</b>	www.gfschemicals.com	
<b>E-mail</b>	service@gfschemicals.com	
<b>Emergency phone number</b>	Emergency Assistance	Chemtrec 800-424-9300

## 2. Hazard(s) identification

<b>Physical hazards</b>	Flammable liquids	Category 2
<b>Health hazards</b>	Serious eye damage/eye irritation	Category 2B
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
<b>OSHA hazard(s)</b>	Not classified.	

### Label elements



<b>Signal word</b>	Danger
<b>Hazard statement</b>	Highly flammable liquid and vapor. May be fatal if swallowed and enters airways. Causes eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness.
<b>Precautionary statement</b>	
<b>Prevention</b>	Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. Keep container tightly closed. Use explosion-proof electrical/ventilating/lighting equipment. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash thoroughly after handling. Wear protective gloves/eye protection/face protection.
<b>Response</b>	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. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell. Do NOT induce vomiting. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media for extinction.
<b>Storage</b>	Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.
<b>Disposal</b>	Dispose of contents/container to an approved incineration plant.
<b>Hazard(s) not otherwise classified (HNOC)</b>	Not classified.

<b>Environmental hazards</b>	Hazardous to the aquatic environment, acute hazard	Category 2
	Hazardous to the aquatic environment, long-term hazard	Category 2
<b>Supplemental information</b>		
<b>Hazard statement</b>	Toxic to aquatic life. Toxic to aquatic life with long lasting effects.	
<b>Precautionary statement</b>		
<b>Prevention</b>	Avoid release to the environment.	
<b>Response</b>	Collect spillage.	
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.	

### 3. Composition/information on ingredients

#### Substances

Hazardous components			
Chemical name	Common name and synonyms	CAS number	%
n-PENTANE		109-66-0	100

\*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

### 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell.
<b>Skin contact</b>	Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Aspiration may cause pulmonary edema and pneumonitis.
<b>Most important symptoms/effects, acute and delayed</b>	Irritation of eyes and mucous membranes. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ). Powder.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	By heating and fire, harmful vapors/gases may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection.
<b>Fire-fighting equipment/instructions</b>	In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage.
<b>Specific methods</b>	In the event of fire and/or explosion do not breathe fumes. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Use standard firefighting procedures and consider the hazards of other involved materials. Move container from fire area if it can be done without risk.

### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Wear appropriate personal protective equipment.
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**Methods and materials for containment and cleaning up**

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep combustibles (wood, paper, oil, etc.) away from spilled material. Stop the flow of material, if this is without risk.

Large Spills: Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. This material is classified as a water pollutant under the Clean Water Act and should be prevented from contaminating soil or from entering sewage and drainage systems which lead to waterways.

Never return spills in original containers for re-use. For waste disposal, see section 13 of the MSDS.

**Environmental precautions**

Contact local authorities in case of spillage to drain/aquatic environment. Avoid discharge into drains, water courses or onto the ground. Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water.

**7. Handling and storage****Precautions for safe handling**

Vapors may form explosive mixtures with air. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Do not smoke. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. Avoid breathing mist or vapor. Avoid contact with eyes. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

**Conditions for safe storage, including any incompatibilities**

Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in cool place. Refrigeration recommended. Store in a well-ventilated place. Keep container tightly closed. Keep in an area equipped with sprinklers. Keep out of the reach of children. Store in a cool, dry place out of direct sunlight.

**8. Exposure controls/personal protection****Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

Material	Type	Value
n-PENTANE (CAS 109-66-0)	PEL	2950 mg/m3 1000 ppm

**US. ACGIH Threshold Limit Values**

Material	Type	Value
n-PENTANE (CAS 109-66-0)	TWA	600 ppm

**US. NIOSH: Pocket Guide to Chemical Hazards**

Material	Type	Value
n-PENTANE (CAS 109-66-0)	Ceiling	1800 mg/m3
		610 ppm
	TWA	350 mg/m3
		120 ppm

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls**

Explosion-proof general and local exhaust ventilation. Provide eyewash station.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Avoid contact with eyes. Chemical goggles are recommended.

**Skin protection**

**Hand protection** Wear protective gloves.

**Other** Wear appropriate chemical resistant clothing. Wear protective gloves.

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards** Not available.

**General hygiene considerations**

When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

**9. Physical and chemical properties**

<b>Appearance</b>	Clear.
<b>Physical state</b>	Liquid.

Material name: n-PENTANE, HPLC

2491

Version #: 01

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<b>Form</b>	Liquid.
<b>Color</b>	Colorless.
<b>Odor</b>	strong hydrocarbon-like.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	-201.5 °F (-129.7 °C)
<b>Initial boiling point and boiling range</b>	96.98 °F (36.1 °C)
<b>Flash point</b>	< -40.00 °F (< -40.00 °C) Closed Cup
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	68.53 kPa at 25 °C 68.52648 kPa at 25 °C
<b>Vapor density</b>	2.49
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	0.4 g/l
<b>Partition coefficient (n-octanol/water)</b>	3.4
<b>Auto-ignition temperature</b>	500 °F (260 °C)
<b>Decomposition temperature</b>	When heated to decomp, emits acrid smoke and irritating fumes.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Density</b>	0.63 g/cm3 estimated
<b>Dynamic viscosity</b>	0.289 mPa.s
<b>Dynamic viscosity temperature</b>	32 °F (0 °C)
<b>Flammability class</b>	Flammable IA estimated
<b>Flash point class</b>	Flammable IA
<b>Heat of combustion (NFPA 30B)</b>	41.9 kJ/g
<b>Molecular formula</b>	C5-H12
<b>Molecular weight</b>	72.15 g/mol
<b>Percent volatile</b>	100 %
<b>Specific gravity</b>	0.6264 at 20 °C
<b>VOC (Weight %)</b>	100 %

## 10. Stability and reactivity

<b>Reactivity</b>	Not available.
<b>Chemical stability</b>	Risk of explosion. Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	Heat, flames and sparks. Avoid temperatures exceeding the flash point.
<b>Incompatible materials</b>	Strong oxidizing agents.
<b>Hazardous decomposition products</b>	Irritants.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Ingestion</b>	May be fatal if swallowed and enters airways.
<b>Inhalation</b>	May be fatal if swallowed and enters airways. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. May cause irritation to the respiratory system.
<b>Skin contact</b>	Due to lack of data the classification is not possible.
<b>Eye contact</b>	Causes eye irritation.

**Symptoms related to the physical, chemical and toxicological characteristics** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

### Information on toxicological effects

**Acute toxicity** May be fatal if swallowed and enters airways.

Product	Species	Test Results
n-PENTANE (CAS 109-66-0)		
<b>Acute</b>		
<i>Inhalation</i>		
LC50	Rat	364 mg/l, 4 h 364 mg/l, 4 Hours
<i>Other</i>		
LD50	Mouse	446 mg/kg

\* Estimates for product may be based on additional component data not shown.

<b>Skin corrosion/irritation</b>	Based on available data, the classification criteria are not met.
<b>Serious eye damage/eye irritation</b>	Causes eye irritation.
<b>Respiratory sensitization</b>	Due to lack of data the classification is not possible.
<b>Skin sensitization</b>	Based on available data, the classification criteria are not met.
<b>Germ cell mutagenicity</b>	Based on available data, the classification criteria are not met.
<b>Carcinogenicity</b>	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
<b>Reproductive toxicity</b>	Based on available data, the classification criteria are not met.
<b>Specific target organ toxicity - single exposure</b>	Respiratory tract irritation. Narcotic effects.
<b>Specific target organ toxicity - repeated exposure</b>	Based on available data, the classification criteria are not met.
<b>Aspiration hazard</b>	May be fatal if swallowed and enters airways.

## 12. Ecological information

<b>Ecotoxicity</b>	Toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.
<b>Persistence and degradability</b>	No data is available on the degradability of this product.
<b>Bioaccumulative potential</b>	Not available.
<b>Partition coefficient n-octanol / water (log Kow)</b>	
3.39	
<b>Mobility in soil</b>	Not available.
<b>Other adverse effects</b>	Not available.

## 13. Disposal considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Incinerate the material under controlled conditions in an approved incinerator. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. If discarded, this product is considered a RCRA ignitable waste, D001. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Not available.
<b>Hazardous waste code</b>	D001: Waste Flammable material with a flash point <140 F

**Waste from residues / unused products**

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging**

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

**14. Transport information****DOT**

<b>UN number</b>	UN1265
<b>UN proper shipping name</b>	Pentanes, MARINE POLLUTANT
<b>Transport hazard class(es)</b>	3
<b>Subsidiary class(es)</b>	Not available.
<b>Packing group</b>	II
<b>Special precautions for user</b>	Read safety instructions, SDS and emergency procedures before handling.
<b>Labels required</b>	3
<b>Special provisions</b>	IB2, IP8, T4, TP1
<b>Packaging exceptions</b>	150
<b>Packaging non bulk</b>	202
<b>Packaging bulk</b>	242

**IATA**

<b>UN number</b>	UN1265
<b>UN proper shipping name</b>	Pentanes liquid
<b>Transport hazard class(es)</b>	3
<b>Subsidiary class(es)</b>	-
<b>Packaging group</b>	II
<b>Environmental hazards</b>	No
<b>Labels required</b>	Not available.
<b>ERG Code</b>	3H
<b>Special precautions for user</b>	Not available.

**IMDG**

<b>UN number</b>	UN1265
<b>UN proper shipping name</b>	PENTANES, liquid, MARINE POLLUTANT
<b>Transport hazard class(es)</b>	3
<b>Subsidiary class(es)</b>	-
<b>Packaging group</b>	II
<b>Environmental hazards</b>	
<b>Marine pollutant</b>	Yes
<b>Labels required</b>	Not available.
<b>EmS</b>	F-E, S-D
<b>Special precautions for user</b>	Not available.

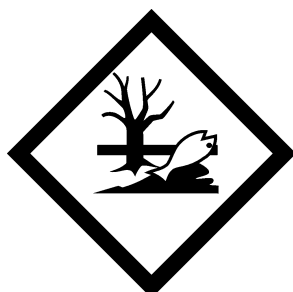
**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** No information available.

**General information** DOT Regulated Marine Pollutant. IMDG Regulated Marine Pollutant.

**DOT**



Marine pollutant



## 15. Regulatory information

### US federal regulations

CERCLA/SARA Hazardous Substances - Not applicable.

All components are on the U.S. EPA TSCA Inventory List.

#### TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

#### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not on regulatory list.

#### CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

#### Hazard categories

Immediate Hazard - Yes  
Delayed Hazard - Yes  
Fire Hazard - Yes  
Pressure Hazard - No  
Reactivity Hazard - No

#### SARA 302 Extremely hazardous substance

No

#### SARA 311/312 Hazardous chemical

No

### Other federal regulations

#### Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

#### Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

n-PENTANE (CAS 109-66-0)

#### Safe Drinking Water Act (SDWA)

Not regulated.

#### Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Not listed.

#### Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated.

#### DEA Exempt Chemical Mixtures Code Number

Not regulated.

#### Food and Drug Administration (FDA)

Not regulated.

### US state regulations

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

**US. Massachusetts RTK - Substance List**

n-PENTANE (CAS 109-66-0)

**US. New Jersey Worker and Community Right-to-Know Act**

n-PENTANE (CAS 109-66-0)

500 LBS

**US. Pennsylvania RTK - Hazardous Substances**

n-PENTANE (CAS 109-66-0)

**US. Rhode Island RTK**

n-PENTANE (CAS 109-66-0)

**US. California Proposition 65****US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Not listed.

**International Inventories**

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

**16. Other information, including date of preparation or last revision****Issue date** March-22-2013**Version #** 01**Further information** Not available.

**Disclaimer** The information in the sheet was written based on the best knowledge and experience currently available. 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.

**Revision Information** Product and Company Identification: Product and Company Identification