

MATERIAL SAFETY DATA SHEET

Version Number:- 02

PRODUCT NAME: n-HEPTANE

CAS Number: 142-82-5

1. IDENTIFICATION:

Product Code : 90034, 90192, 90466, 94102, 94260, 91646, 94033, 98121

Company Name : ADVENT CHEMBIO PRIVATE LIMITED

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2. HAZARDS IDENTIFICATION:**Hazard classification****Physical hazards**

Flammable liquids : Category 2

Health hazards

Aspiration hazard : Category 1

Specific target organ toxicity - single exposure : Category 3

Skin corrosion/ irritation : Category 2

Serious eye damage /Eye irritation : Category 2

Environmental hazards

Acute hazards to the aquatic environment : Category 1

Chronic hazards to the aquatic environment : Category 1

Labels elements :**Hazard symbol** :

Signal word : Danger

Hazard statement : Highly flammable liquid and vapor.
May be fatal if swallowed and enters airways.
: Causes skin irritation.
Causes eye irritation.

Precautionary statement : May cause respiratory irritation.
May cause drowsiness or dizziness.
Very toxic to aquatic life with long lasting effects.



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Prevention	: Obtain special instructions before use. Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Do not handle until all safety precautions have been read and understood. Wear protective gloves/ protective clothing/ eye protection/ face protection. Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking. Keep container tightly closed. Ground/ bond container and receiving equipment. Use explosion-proof electrical/ ventilating/ lighting/ equipment. Use only non-sparking tools. Take precautionary measures against static discharge.
Response	: IF exposed or concerned: Get medical advice/ attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
Storage	: Store at ambient temperature in a dry and well ventilated place. Keep container tightly closed. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Disposal	: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification	: Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. COMPOSITION/ INFORMATION ON INGREDIENTS:

Ingredient	CAS Number	Percent	Hazardous
n-Heptane	142-82-5	NLT 99.5%	Yes

4. FIRST AID MEASURES:

General information	: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.
Ingestion	: 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.
Inhalation	: Move to fresh air. Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms persist.
Skin contact	: Immediately flush with soap and water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Eye contact	: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Most important symptoms/effects, acute and delayed	: Toxic if inhaled. Toxic if swallowed. Toxic in contact with skin. Irritating to eyes, respiratory system and skin.

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Indication of immediate medical attention and special treatment needed : Symptoms may be delayed. Treat symptomatically.

5. FIRE FIGHTING MEASURES:

General information : Flammable liquid and vapor.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media : Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical : Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Vapor from the solvent may accumulate in container headspace resulting in flammability hazard. Heat may cause the containers to explode.

Special protective equipment and precautions for firefighters

Special firefighting procedures : Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Special protective equipment for fire-fighters : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. ACCIDENTAL RELEASE MEASURES:

Personal precautions, protective equipment and emergency procedures : ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Avoid breathing mists or vapors. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.

Methods and material for containment and cleaning up : Eliminate all ignition sources if safe to do so. Use only non-sparking tools. Take precautionary measures against static discharges. Stop leak if possible without any risk. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures : Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

Environmental precautions : Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. HANDLING AND STORAGE:

Precautions for safe handling : Do not handle until all safety precautions have been read and understood. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Wear protective

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Conditions for safe storage, including any incompatibilities : gloves/protective clothing/eye Protection/ face protection. Avoid contact with eyes, skin, and clothing. Do not breathe mist or vapor. Use only with adequate ventilation. Wash hands thoroughly after handling. Keep away from food, drink and animal feeding stuffs. Store at ambient temperature in a dry and well ventilated place. Keep the container tightly closed, away from heat. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8. EXPOSURE CONTROLS PERSONAL PROTECTION:

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
n-Heptane	TWA	400 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	500 ppm	US. ACGIH Threshold Limit Values (2011)
	REL	85 ppm 350 mg/m ³	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	500 ppm 2000 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	400 ppm 1600 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000)(1989)
	STEL	500 ppm 2000 mg/m ³	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

Appropriate engineering controls : No data available

Individual protection measures, such as personal protective equipment

General information : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

Eye/face protection : Wear safety glasses with side shields (or goggles).

Hand protection : Chemical resistant gloves.

Other : Wear suitable protective clothing.

Respiratory protection : In case of inadequate ventilation use suitable respirator. Chemical Respirator with organic vapor cartridge.

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Hygiene measures : Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Provide eyewash station and safety shower. Avoid contact with eyes, skin, and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance : Clear, colorless liquid

Odor : Characteristics

Solubility : No data available.

Formula : C₇H₁₆

Molecular Weight : 100.21 g/mol

Specific Gravity : 0.683 - 0.684 g/cm³ at 25°C

pH : No data available.

% Volatiles by volume @ 21C (70F) : No data available.

Boiling Point : 98°C

Melting Point : -90.6°C

Flash Point : -4 °C

Vapor Density (Air=1) : 3.5

Vapor Pressure (mm Hg) : 6.13 kPa @ 25°C

Evaporation Rate (BuAc=1) : No data available.

10. STABILITY AND REACTIVITY:

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Material is stable under normal conditions..

Possibility of hazardous reactions : Hazardous polymerization does not occur.

Conditions to avoid : Heat, sparks, flames. Sunlight.

Incompatible materials : Strong oxidizing agents. Acetaldehyde. Acids. Chlorine. Ethylene Oxide
Hydrogen peroxide (H₂O₂) Sulfuric acid. Isocyanates. Aluminum.

Hazardous decomposition products : Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

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

- Ingestion** : Harmful or fatal if swallowed.
- Inhalation** : May cause irritation to the mucous membranes and upper respiratory tract. May cause central nervous system effects
- Skin contact** : Causes mild skin irritation
- Eye contact** : Causes serious eye irritation.

Information on toxicological effects**Acute toxicity (list all possible routes of exposure)**

- Oral Product** : No data available.
- Dermal Product** : No data available.
- Inhalation Product** : LD 50 (Mouse, 2 h): 75 mg/l .
: LC 50 (Rat, 4 h): 103 mg/l.
- Repeated dose toxicity Product** : No data available.
- Skin corrosion/irritation Product** : Prolonged or repeated skin contact may cause drying, cracking, or irritation
- Serious eye damage/eye irritation Product** : Irritating to eyes.
- Respiratory or skin sensitization Product** : Not a skin sensitizer.
- Carcinogenicity Product** : This substance has no evidence of carcinogenic properties
- IARC Monographs on the Evaluation of Carcinogenic Risks to Humans** : No carcinogenic components identified.
- US. National Toxicology Program (NTP) Report on Carcinogens** : No carcinogenic components identified.
- US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)** : No carcinogenic components identified.
- Germ cell mutagenicity**
- In vitro Product** : No data available.
- Reproductive toxicity Product** : May damage fertility or the unborn child.
- Specific target organ toxicity - single exposure Product** : Narcotic effect., Respiratory tract irritation.
- Specific target organ toxicity - repeated** : None known.

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exposure Product**Aspiration hazard Product** : May be harmful if swallowed and enters airways .**Other effects** : None known.**12. ECOLOGICAL INFORMATION:****Ecotoxicity****Acute hazards to the aquatic environment****Fish Product** : No data available.**Specified substance(s):** : LC 50 (Mozambique tilapia (Tilapia mossambica), 96 h): 375 mg/l Mortality
n- HEPTANE LC 50 (Western mosquitofish (Gambusia affinis), 96 h): 4,924 mg/l Mortality
LC 50 (Carp (Leuciscus idus melanotus), 48 h): 270 mg/l Mortality**Aquatic invertebrates** : No data available.
Product**Specified substance(s):** : EC 50 (Water flea (Daphnia magna), 96 h): 71.25 - 93.75 mg/l Intoxication
n- HEPTANE LC 50 (Water flea (Daphnia magna), 24 h): > 10 mg/l Mortality
LC 50 (Oligochaete (Branchiura sowerbyi), 96 h): 2,500 mg/l Mortality .**Chronic hazards to the aquatic environment****Fish Product** : No data available.**Aquatic invertebrates** : No data available.
Product**Toxicity to Aquatic Plants** : No data available.
Product:**Persistence and degradability****Biodegradation Product** : The product is moderately biodegradable..**BOD/COD ratio Product** : No data available.**Bioaccumulative potential****Bioconcentration factor** : No data available on bioaccumulation.
(BCF) Product**Partition coefficient n-** : Log Kow: 4.66
octanol / water (log Kow)**Product****Mobility in soil** : The product is partly soluble in water. May spread in the aquatic environment.**Other adverse effects** : Very toxic to aquatic life with long lasting effects.



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13. DISPOSAL CONSIDERATION:

- Disposal instructions** : Discharge, treatment, or disposal may be subject to national, state, or local laws. Disposal recommendations are based on uncontaminated material.
- Contaminated packaging** : Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION:

	UN No.	UN proper shipping name	Hazard Class(es)	Packaging group	Marine Pollutant
DOT	UN 1206	n-Heptane	3	II	Yes
IMDG	UN 1206	n-Heptane	3	II	Yes
IATA	UN 1206	n-Heptane	3	II	No

15. REGULATORY INFORMATION:

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.
Safety, health and environmental regulations/legislation specific for the substance or mixture
No Data Available.

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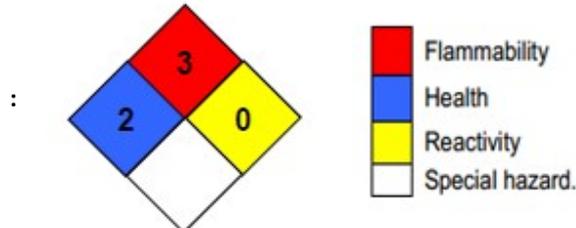
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16. OTHER INFORMATION:

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

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