



Date: 4/29/2022

Product Code NHEP-1QT NHEP-1G
NHEP-5G NHEP-55G

SAFETY DATA SHEET

1. Identification

Product Name: n-Heptane

Product Code: NHEP-1QT NHEP-1G NHEP-5G NHEP-55G NHEP-250 HEPTANE-1QT HEPTANE-1G HEPTANE-5G H-61-55 H-61-250

SDS Date: 4/29/2022

Use: Synthetic/Analytical chemistry.

Address: BVV
1251 Frontenac Rd. Ste 150
Naperville IL 60563

Phone: (331) 281-0154

CHEMTEL: (800) 255-3924

2. Hazard(s) Identification

OSHA/HCS status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

FLAMMABLE LIQUIDS - Category 1
SKIN CORROSION/IRRITATION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

Pictogram



Signal Word

Danger

Hazard Statement

Extremely flammable liquid and vapor.
May form explosive mixtures with air.
Causes skin irritation.
May cause drowsiness and dizziness.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Precautionary

General: Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention:	Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing vapor. Wash hands thoroughly after handling.
Response:	Collect spillage. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention.
Storage	Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
	None

Hazards Not Otherwise Classified:

None Know

3. Composition/Information On Ingredients

Substance/mixture	Substance
Chemical name	heptane
Other means of identification	n-heptane; Heptane (n-Heptane)
CAS number/other identifiers	
CAS number:	142-82-5
Product code	001108

Ingredient name	%	CAS number
Heptane	100	142-82-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

4. First-aid Measures

Description of necessary first aid measures

If Inhaled:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 necessary, call a poison center or physician. 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.
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In Case of Skin Contact:	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
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In Case of 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.
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If Swallowed:	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 necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention
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Most Important Symptoms and Effects, Both Acute and Delayed:

Eye Contact	Causes serious eye irritation.
Inhalation	Can cause central nervous system (CNS) depression. May cause drowsiness and
Skin Contact	Causes skin irritation.
Frost Bite	Try to warm up the frozen tissues and seek medical attention.
Ingestion	Can cause central nervous system (CNS) depression. Irritating to mouth, throat and
Over-exposure signs/symptoms	
Eye Contact	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
Skin contact	Adverse symptoms may include the following: irritation redness
Ingestion	No specific data.

Indications of Any Immediate Medical Attention and Special Treatment Needed:

Note physician	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments	No specific treatment.
Protection of first-aiders	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.

5. Fire-fighting Measures

Suitable extinguishing media:

Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media

Do not use water jet.

Specific hazards arising from the chemical

Extremely 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 thermal decomposition products

Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters

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.

Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6. Accidental Release Measures

For non-emergency personnel:

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 vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders:

If specialised 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 nonemergency personnel".

Environmental precautions:

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.

Methods and materials for containment and cleaning up

Small Spill

Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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.

Large Spill

Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. 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. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. Handling and Storage

Precautions for Safe Handling

Protective Measures:

Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. 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 explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on General Occupational Hygiene:

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. See also Section 8 for additional information on hygiene measures.

Conditions For safe Storage including any incompatibilities:

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. 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.

8. Exposure Controls/Personal Protection

Occupational exposure limits

Ingredient name	Exposure limits
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Heptane	ACGIH TLV (United States, 3/2012). STEL: 2050 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 1640 mg/m³ 8 hours. TWA: 400 ppm 8 hours. NIOSH REL (United States, 1/2013). CEIL: 1800 mg/m³ 15 minutes. CEIL: 440 ppm 15 minutes. TWA: 350 mg/m³ 10 hours. TWA: 85 ppm 10 hours. OSHA PEL (United States, 6/2010). TWA: 2000 mg/m³ 8 hours. TWA: 500 ppm 8 hours. OSHA PEL 1989 (United States, 3/1989). STEL: 2000 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 1600 mg/m³ 8 hours. TWA: 400 ppm 8 hours.
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Environmental exposure controls

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.

Eye/Face Protection:

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.

Skin/Hand Protection:

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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body Protection:

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 antistatic protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Respiratory Protection:

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.

Other skin protection

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 this product.

9. Physical and Chemical Properties

Appearance:

Liquid. [Watery liquid.]

Colorless.

Odor:	Characteristic.	
Odor Threshold:	Not available.	
pH:	Not available.	
Melting/Freezing Point:	-90.6°C (-131.1°F)	
Initial Boiling Point/Range:	98.5°C (209.3°F)	
Flash Point:	Closed cup: -3.89°C (25°F)	
Evaporation Rate:	3.18 (butyl acetate = 1)	
Flammability:	Not available.	
Upper Explosion Limit:	Upper: 6.7%	
Lower Explosion Limit:	Lower: 1.05%	
Vapor Pressure:	4.6 kPa (34.502803352 mm Hg) [room temperature]	
Vapor Density:	3.46 (Air = 1)	
Relative Density:	0.68	
Water Solubility:	Not available.	
Partition Coefficient:	4.66	
Auto Ignition Temp:	285°C (545°F)	
Decomposition Temp:	Not available.	
Viscosity:	Kinematic (room temperature): 0.00641 cm ²	
Molecular weight	100.23 g/mole	
Molecular formula	C7-H16	
Critical Temperature	266.85°C (512.3°F)	
Specific Volume (ft 3/lb)	1.462	
Gas Density (lb/ft 3)	0.684	

10. Stability and Reactivity

Reactivity:	No specific test data related to reactivity available for this product or its ingredients.
Chemical Stability:	The product is stable.
Possibility of Hazardous Reactions:	Under normal conditions of storage and use, hazardous reactions will not occur
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 vapor to accumulate in low or confined areas.
Incompatible Materials:	Extremely reactive or incompatible with the following materials: oxidizing materials.
Hazardous Decomposition Products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	Under normal conditions of storage and use, hazardous polymerization will not occur.

11. Toxicological Information

Acute Toxicity

Product Ingredient name	Result	Species	Doses	Exposure
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Heptane	LC50 Inhalation Gas.	Rat	48001 ppm	4 hours
	LC50 Inhalation Vapor	Rat	50242 ppm	1 hours
	LC50 Inhalation Vapor	Rat	103 g/m ³	4 hours

Skin Corrosion/Irritation: Not Available

Serious Eye Damage/Eye Irritation: Causes serious eye irritation.

Respiratory or Skin Sensitization: Not available

Germ Cell Mutagenicity: Not available.

Carcinogenicity: Not available.

Reproductive: Not available.

Teratogenicity: Not available.

Name	Category	Route of Exposure	Target Organs
Heptane	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure) Not Available

Aspiration hazard Not Available

Symptoms related to the physical, chemical and toxicological characteristics

Eye Contact Adverse symptoms may include the following:
pain or irritation
watering

Inhalation Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin Contact Adverse symptoms may include the following:
irritation
redness

12. Ecological Information

Toxicity

Product	Ingredient name	Result	Species	Exposure
	Heptane	Acute LC50 375000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 Hours

Persistence and degradability Not available

13. Disposal Considerations

Disposal Methods The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. Transportation Information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1206	UN 1206	UN 1207	UN 1209	UN 1210
UN Proper Shipping Name	heptanes	heptanes	heptanes	heptanes	heptanes
Transport Hazard class	3 	3 	3 	3  	3 
Packing group	II	II	II	II	II
Environment	No	No	No	Yes	No
Additional information	-	<u>Explosive Limit and Limited Quantity Index 1</u> <u>Passenger Carrying Road or Rail Index 5</u>	-	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg	The environmentally hazardous substance mark may appear if required by other transportation regulations

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

15. Regulatory Information

U.S. Federal regulations:

TSCA 8(a) PAIR: heptane

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

TSCA 12(b) one-time export: heptane

United States inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)	Not listed
Clean Air Act Section 602	Not listed
Clean Air Act Section 602 Class II Substances	Not listed
DEA List I Chemicals (Precursor Chemicals)	Not listed
DEA List II Chemicals	Not listed
DEA List II Chemicals (Essential Chemicals)	Not listed
SARA 304 RQ	Not Applicable
SARA 311/312	Fire Hazard Immediate (acute) health hazard
State Regulations	
Massachusetts:	This material is listed.
New York:	This material is not listed.
New Jersey :	This material is listed.
Pennsylvania:	This material is listed.
Canada inventory:	This material is listed or exempted.
International regulations	
International lists	Australia inventory (AICS): This material is listed or exempted. China inventory (IECSC): This material is listed or exempted. Japan inventory: This material is listed or exempted. Korea inventory: This material is listed or exempted. Malaysia Inventory (EHS Register): Not determined. New Zealand Inventory of Chemicals (NZIoC): This material is listed or exempted. Philippines inventory (PICCS): This material is listed or exempted. Taiwan inventory (CSNN): Not determined.
Chemical Weapons:	Not listed
Canada WHMIS	Class B-2: Flammable liquid Class D-2B: Material causing other toxic effects (Toxic). CEPA Toxic substances: This material is not listed. Canadian ARET: This material is not listed. Canadian NPRI: This material is listed. Alberta Designated Substances: This material is not listed. Ontario Designated Substances: This material is not listed. Quebec Designated Substances: This material is not listed.

16. Other Information, Including Date of Preparation or Last Revision

Canada Label requirements	Class B-2: Flammable liquid Class D-2B: Material causing other toxic effects (Toxic).
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Hazardous Material Information System (U.S.A.)

Health	2
Flammability	3
Physical hazards	0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868. The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Key to abbreviations

ATE	Acute Toxicity Estimate
BCF	Bioconcentration Factor
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
IMDG	International Maritime Dangerous Goods
LogPow	logarithm of the octanol/water partition coefficient
MARPOL 73/78	International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN	United NationsACGIH – American Conference of Governmental Industrial Hygienists
AIHA	American Industrial Hygiene Association
CAS	Chemical Abstract Services
CEPA	Canadian Environmental Protection Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	United States Code of Federal Regulations
CPR	Controlled Products Regulations

DSL	Domestic Substances List
GWP	Global Warming Potential
IARC	International Agency for Research on Cancer
ICAO	International Civil Aviation Organisation
Inh	Inhalation
LC	Lethal concentration
LD	Lethal dosage
NDSL	Non-Domestic Substances List
NIOSH	National Institute for Occupational Safety and Health
TDG	Canadian Transportation of Dangerous Goods Act and Regulations
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
WEEL	Workplace Environmental Exposure Level
WHMIS	Canadian Workplace Hazardous Material Information System

SDS Date: 4/29/2022.

Disclaimer:

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