



SAFETY DATA SHEET

N-HEPTANE

1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE SUPPLIER

Product name: N-HEPTANE
Recommended use: Chemical for industrial
Manufacturer/Supplier: **MODERN CHEMICAL CO., LTD.**
82/80 Soi Ekamai 22 (Nuannoi), Sukhumvit 63,
Klong Tan Nuea, Watthana, Bangkok 10110
Telephone No: 0-2715-0897-9, 0-2392-3410-3
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2. HAZARDS IDENTIFICATION

Label elements

Pictogram



Signal word

Danger

Hazard statement(s):

- 1.) H225 - Highly flammable liquid and vapour.
- 2.) H302 - Harmful if swallowed.
- 3.) H316 - Causes mild skin irritation.
- 4.) H320 - Causes eye irritation.
- 5.) H336 - May cause drowsiness or dizziness.
- 6.) H360 - May damage fertility or the unborn child.
- 7.) H373 - May cause damage to organs through prolonged or repeated exposure.
- 8.) H402 - Harmful to aquatic life.

**Precautionary statement(s):**

- 1.) P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- 2.) P240 - Ground/bond container and receiving equipment.
- 3.) P241 - Use explosion-proof electrical, ventilating, and lighting equipment.
- 4.) P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
- 5.) P273 - Avoid release to the environment.
- 6.) P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- 7.) P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- 8.) P303+P361+P353 - IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
- 9.) P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- 10.) P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- 11.) P403+P235 - Store in a well-ventilated place. Keep cool.
- 12.) P501 - Dispose of contents/container in accordance with local regulation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym: N/A

Ingredients	% (w/w)	CAS NO.
NAPHTHA (PETROLEUM), HYDROTREATED LIGHT	100	64742-49-0

4. FIRST AID MEASURES**General advice:** No data available.**Inhalation:** Remove from further exposure. For those providing assistance, avoid exposure to yourself or other. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.**Skin contact:** Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.**Eye contact:** Flush thoroughly with water. If irritation occurs, get medical assistance.



Ingestion: Seek immediate medical attention. Do not induce vomiting.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

Use foam, dry chemical or carbon dioxide to extinguish flames.

Unsuitable Extinguishing Media:

Straight streams of water.

Specific hazards arising from Chemicals:

Highly flammable. Vapour is flammable and heavier than air. Vapour may travel across the ground and reach remote ignition sources, causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Special protective equipment for fire-fighters:

Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

6. ACCIDENTAL RELEASE MEAS

Precautions:

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind area if required due to toxicity or flammability of the material. See Section 5 for firefighting information. See Section the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expect judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H₂S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to aromatic hydrocarbons are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not



suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

Environmental precautions: Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

Methods and Material for Containment and Clean Up:

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapour-suppressing foam may be used to reduce vapour. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Large Spills: Water spray may reduce vapour, but may not prevent ignition in enclosed spaces.

Water Spill: Stop leak if you can do so without risk. Eliminate sources of ignition. Warn other shipping. If the Flash Point exceeds the Ambient Temperature by 10 deg C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

7. HANDLING AND STORAGE

Precautions for Safe Handling & Product Transfer:

Avoid contact with skin. Prevent exposure to ignition sources, for example use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapour may be evolved from heated or agitated material. Use only with adequate ventilation. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and earthing may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against



Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77

(Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics-Code of practice for the avoidance of hazards due to static electricity).

Conditions for Safe Storage & Unsuitable Materials:

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. The container choice, for example storage vessel, may effect static accumulation and dissipation. Keep container closed. Handle \ containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be earthed and bonded. Fixed storage containers, transfer containers and associated equipment should be grounded and bonded to prevent accumulation of static charge.

Suitable Materials and Coatings (chemical Compatibility): Carbon Steel; Polyethylene; Stainless Steel; Polypropylene; Teflon

Unsuitable Materials and Coatings: Natural Rubber; Butyl Rubber; Ethylene-propylene-diene monomer (EPDM); Polystyrene

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits: TWA 400 - 500 ppm

Appropriate Engineering Controls: Adequate ventilation should be provided so that exposure limits are not exceeded. Use explosion-proof ventilation equipment.

Individual Protection Measures

Respiratory protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include: Half-face filter respirator.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.



Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include: Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.

Eye protection:

If contact is likely, safety glasses with side shields are recommended.

Skin and body Protection:

Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include: Chemical/oil resistant clothing is likely.

Hygiene measure:

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. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form, Color and Odor : liquid, Colorless ,Mild Petroleum	Evaporation rate : 4.18 (n-butyl acetate = 1)
Melting Point : N/D	Specific gravity : 0.690 – 0.720 g/cm ³ at 15.6 °C
pH : N/A	Solubility in water : Negligible
Boiling point : 94 - 98°C	Viscosity : 0.49 cSt at 40 °C , 0.58 cSt at 25 °C
Vapour pressure : 5.398 kPa at 20 °C	Vapour density (air=1) : 3.5 at 101 kPa
Lower explosive limits : 1.1 %Vol	Upper explosive limits : 6.7 %Vol
Auto-ignition temperature : 245°C	Flash point: -8 °C
Odour threshold: N/D	Flammability (solid, gas): N/A
Decomposition temperature: N/D	Solubility in other solvents: N/A
n-octanol/water partition coefficient (log P_{ow}): N/D	

10. STABILITY AND REACTIVITY**Chemical Stability:**

Material is stable under normal conditions.

Reactions:

No data available.

Possibility of Hazardous Reactions:

Hazardous polymerization will not occur.

Conditions to avoid:

Avoid heat, sparks, open flames and other ignition sources.

Materials to avoid:

Strong oxidizers.

Hazardous decomposition products:

Material does not decompose at ambient temperatures.



11. TOXICOLOGICAL INFORMATION

Acute toxicity:	LD50 (Oral, rat): >5,840 mg/kg LD50 (Skin, rat): >2,920 mg/kg LC50 (Inhalation, rat): >23.3 mg/l-4h
Sensitization:	Vapour/aerosol concentration above recommended exposure levels are irritation to the eyes and respiratory tract, may cause headaches, dizziness, anaesthesia, drowsiness, unconsciousness and other central nervous system effects including death. Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema. Very high exposure (confined spaces / abuse) to light hydrocarbons may result in abnormal heart rhythm (arrhythmia). Concurrent high stress levels and/or co-exposure to high levels of hydrocarbons (above occupational exposure limits) and to heart-stimulating substance like epinephrine, nasal decongestant, asthma drug, or cardiovascular drug may initiate arrhythmias.
Chronic toxicity:	No data available.
Further toxicological information:	No data available.

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish:	LL50 - <i>Oncorhynchus mykiss</i> : >13.4 mg/l -96h
Toxicity to daphnia and other aquatic invertebrates:	EL50 - <i>Daphnia magna</i> : 3 mg/l -48h
Toxicity to algae:	EL50 - <i>Pseudokirchneriella subcapitata</i> : 10 - 30 mg/l -72h
Toxicity to bacteria:	No data available.
Biodegradability Remarks:	Ready Biodegradability, in water 28 days, 98%. Expected to degrade rapidly in air. Transformation due to hydrolysis and photolysis not expected to be significant.
Bioaccumulative Potential:	No data available.



SEA (MARPOL 73/78 Convention - Annex II)

Product Name: ALKANES (C6-C9)

Ship type: 2

Pollution category: X

IATA

UN-No: 1206

Class: 3

Packing group: II

Proper shipping name: HEPTANES

Label(s): 3

Transport Document Name: UN1206, HEPTANES, 3, PG II

15. REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: This material is considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

Listed or exempt from listing/notification on the following chemical inventories: AICS, DSL, ENCS, IECSC, KECI, PICCS, TSCA

EPCRA SECTION 302: This material contains no extremely hazardous substances.

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

CWA / OPA: This product is classified as an oil under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Act of 1990. Discharge or spills which produce a visible sheen on either surface water, or in waterways/sewers which lead to surface water, must be reported to the National Response Center at 800-424-8802.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: Fire. Immediate Health.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.



The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
2,3-DIMETHYLPENTANE	565-59-3	1, 13, 16, 17
3-ETHYLPENTANE	617-78-7	1, 13, 16
3-METHYLHEXANE	589-34-4	1, 13, 16, 17, 18
HEXANE, 2-METHYL-	591-76-4	1, 13, 16, 18
METHYLCYCLOHEXANE	108-87-2	1, 4, 13, 16, 17, 19
N-HEPTANE	142-82-5	1, 4, 13, 16, 17, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

16. OTHER INFORMATION

Modern Chemical Co., Ltd. provides the information contained herein in good faith but makes no representation as to its comprehensive or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

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