CORCO CHEMICAL CORPORATION

Manufacturers of ACS Reagents and Semiconductor Grade Chemicals

SAFETY DATA SHEET

HEPTANE

1. Identification

Product identifier: Heptane
Product Code Number: 1300
Trade Name: Heptane
Synonyms: n-Heptane; normal Heptane; Dipropyl Methane; Heptyl Hydride
Chemical Formula: CH3(CH2)5CH3

Product Use: Process chemical, Laboratory and scientific research and development
Restrictions on use: None known.

Company Identification: Corco Chemical Corporation
299 Cedar Lane
Fairless Hills, PA 19030
Phone: 215-295-5006
Fax: 215-295-0781

24 Hour Emergency Telephone Number:
CHEMTREC (U.S.): 1-800-424-9300
CHEMTREC (Outside U.S.): 1-703-527-3887

SDS Date of Preparation: 12/9/19

2. Hazard(s) identification

Classification of the Substance or Mixture:
Flammable Liquid Category 2
Aspiration Toxicity Category 1
Skin Irritant Category 2
Specific Target Organ Toxicity Single Exposure Category 3 (Narcotic effects)

Label Elements:
Danger!

Hazard Statements:
H225 Highly flammable liquid and vapor.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.

Precautionary Statements:
P210 Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground or bond container and receiving equipment.
P241 Use explosion-proof electrical, ventilating, or lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing mist or vapors.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER or doctor if you feel unwell.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P332+P313 If skin irritation occurs: Get medical attention.
P362+P364 Take off contaminated clothing and wash it before reuse.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P331 Do NOT induce vomiting.
P370+P378 In case of fire: Use water spray, alcohol-resistant foam, carbon dioxide and dry chemical to extinguish.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents and container in accordance with local and national regulations.

Other Hazards: None known.

3. Composition/information on ingredients

Ingredient	CAS Number	Percent	Hazardous Chemical
Heptane	142-82-5	90-100%	Yes

The specific identity and/or exact percentage of the composition has been withheld as a trade secret.

4. First-aid measures

Inhalation: Remove victim to fresh air. Give artificial respiration if needed. If breathing is difficult, oxygen should be administered by qualified personnel. Get medical attention if symptoms of exposure persist.

Skin contact: Remove contaminated clothing and shoes. Flush skin thoroughly with water for several minutes. Get medical attention if irritation occurs. Launder clothing before re-use.

Eye contact: Rinse thoroughly with water. Get medical attention if irritation occurs and persists.

Ingestion: Aspiration hazard: do NOT induce vomiting. Keep the victim calm and warm. If conscious, rinse mouth with water. Never give anything by mouth to an unconscious or convulsing person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration into the lungs. Get immediate medical attention.

Most important symptoms/effects, acute and delayed: Direct contact with liquid may cause moderate skin irritation. Inhalation of mists or vapors may cause headache, dizziness, nausea and other symptoms of central nervous system depression. Aspiration hazard: material may enter the lungs if swallowed and cause lung injury.

Indication of immediate medical attention and special treatment, if necessary: Immediate medical attention is required for ingestion.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media: Use water spray, alcohol-resistant foam, carbon dioxide and dry chemical.

Specific hazards arising from the chemical: Highly flammable liquid and vapor. Vapors are heavier than air and may flow along surfaces to remote ignition sources and flash back. Sensitive to static discharge.

Special protective equipment and precautions for fire-Fighters: Wear an approved, positive pressure, self-contained breathing apparatus and full protective clothing. Water spray may be used to keep fire exposed containers cool, dilute spills to nonflammable mixtures, protect personnel attempting to stop leak and disperse vapors.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Evacuate spill area and keep unprotected personnel away. Remove all ignition sources such as open flames, spark producing equipment, pilot lights, etc. Minimize generation of static electricity which may cause sparking. Avoid contact with eyes, skin, and clothing. Wear appropriate protective clothing. Avoid breathing vapors or mists. Ventilate area with explosion proof equipment.

Methods and materials for containment and cleaning up: Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth,) and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! Avoid releases to the environment. If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures. Report spills and releases as required to appropriate authorities.

7. Handling and storage

Precautions for safe handling: Avoid contact with eyes, skin, and clothing. Wear protective clothing and equipment as described in Section 8. Avoid breathing vapors or mists. Use with adequate ventilation. Wash hands with soap and water after use. Keep product away from heat, sparks, flames and all other sources of ignition. No smoking in storage or use areas. Keep containers closed when not in use. Use with non-sparking tools and explosion proof equipment. Electrically bond and ground containers for transfer.

Conditions for safe storage, including any incompatibilities: Store in a cool, dry, well ventilated location away from heat, sparks, and open flames. Keep away from incompatible materials. Protect container from physical damage. Keep containers closed when not in use. Keep out of the reach of children.

8. Exposure controls/personal protection

Chemical Name	Exposure Limits
Heptane	400 ppm TWA, 500 ppm STEL ACGIH TLV 500 ppm TWA OSHA PEL

Appropriate engineering controls: A system of local and / or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details.

Personal protective equipment:

Respiratory protection: In operations where the occupational exposure limits are exceeded, an approved respirator with applicable cartridges or supplied air respirator should be used. Respirator selection and use should be based on contaminant type, form and concentration. Follow applicable regulations and good Industrial Hygiene practice.

Skin Protection: Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection: Use chemical safety glasses or goggles where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and chemical properties

Appearance: Clear, colorless liquid
Odor: Mild, gasoline-like
Odor Threshold: Not determined
pH: No data available
% Volatiles by volume @ 21C (70F): 100%
Melting Point/Freezing Point: - 91°C (-132°F)
Boiling Point / Boiling Range: 98°C (208°F)
Flash Point: -4°C (25°F) CC
Evaporation Rate (BuAC=1): Not determined
Flammability (solid, gas): Not applicable
Upper / Lower Flammability or Explosive Limits: UEL: 6.7%, LEL: 1.05%
Vapor Pressure (mm Hg): 40 @ 20°C (68°F)
Vapor Density (Air=1): 3.5
Relative Density: 0.684 g/mL at 25°C (77°F)
Solubility: Insoluble in water
Partition Coefficient: n-octanol / water: log Pow: > 3
Auto-ignition Temperature: 204°C (399°F)
Decomposition Temperature: No data available
Viscosity: No data available
Molecular Formula: CH3(CH2)5CH3
Molecular Weight: 100.21
Specific Gravity: 0.68 g/cm3 @ 20°C

10. Stability and reactivity

Reactivity: Not reactive under normal conditions of use.

Chemical stability: Stable under ordinary conditions of use and storage.

Possibility of hazardous reactions: Hazardous polymerization will not occur.

Conditions to avoid: Keep away from heat, sparks, flames and other sources of ignition.

Incompatible materials: Strong oxidizing agents.

Hazardous decomposition products: Carbon Dioxide and Carbon Monoxide may form when heated to decomposition.

11. Toxicological information

Potential Health Effects:

Inhalation: Inhalation of mists or vapors may cause nose and throat irritation with the possibility of central nervous system depression. Symptoms of central nervous system depression include headache, dizziness, drowsiness, nausea and unconsciousness.

Skin Contact: Direct contact may cause moderate skin irritation. Defatting or dermatitis may result from prolonged or repeated exposure.

Eye Contact: Direct contact with eyes may cause eye irritation.

Ingestion: Swallowing may cause gastrointestinal irritation and central nervous system depression with symptoms similar to those described under inhalation. Aspiration hazard. May cause lung damage during swallowing or vomiting.

Chronic Exposure: None known.

Aggravation of Pre-existing Conditions: Persons with pre-existing skin disorders or impaired pulmonary function may be more susceptible to the effects of this substance.

Carcinogenicity: None of the components of this product are listed as a carcinogen or suspected carcinogen by OSHA, IARC, and NTP.

Reproductive Effects: Reproductive harm is not expected from this product.

Mutagenic Effects: Not expected to cause mutagenic activity.

Acute Toxicity:
Heptane: Oral rat LD50: >5000 mg/kg, Inhalation rat LC50: >29.29 mg/L/4hr, Skin rabbit LD50: >2000 mg/kg

12. Ecological information

Exotoxicity:

Product	Species	Test Results
Heptane	Rainbow trout	5.738 mg/L 96 hr LL50
	Daphnia magna	3.9 mg/L 48 hr EL50
	Rainbow trout	1.284 mg/L 28 day NOELR
	Daphnia magna	0.17 mg/L 21 days NOEC

This product is expected to be very toxic to the aquatic environment with long lasting effects. Releases to the environment should be avoided.

Persistence and Degradability: Photolysis and hydrolysis are not expected to be important in soils. Biodegradation may occur in soils; however, volitization and adsorption are expected to be far more important. Based on vapor pressure of 45.8 mm Hg at 25°C, heptane is expected to exist entirely in the vapor phase in ambient air. Direct photolysis of heptane is not expected to be important.

Bioaccumulative Potential: This material has an estimated bioconcentration factor (BCF) of greater than 100. This material has a log octanol-water partition coefficient of greater than 3.0.

Mobility in Soil: When released into the soil, this material is not expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate.

Other adverse effects: None known.

13. Disposal considerations

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements.

Hazardous waste code D001: Waste Flammable material with a flash point <140°F.

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. Transportation Information

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
US DOT	UN1206	Heptanes	3	II	Not applicable
IMDG	UN1206	Heptanes	3	II	Marine Pollutant
IATA	UN1206	Heptanes	3	II	Not applicable

Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

Special Precautions for User: Not applicable

15. Regulatory information

US Federal Regulations:

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)
This product is not subject to reporting under CERCLA. Some states have more stringent reporting requirements. Report all spills in accordance with local, state, and federal regulations.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
Hazard categories:
SARA 311/312
Refer to Section 2 for OSHA Hazard Classification.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None

SARA 302 Extremely hazardous substance
None

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)
Not regulated.

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

HEPTANE (CAS 142-82-5)

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

Not regulated.

US. Pennsylvania RTK - Hazardous Substances

HEPTANE (CAS 142-82-5)

US. Rhode Island RTK

HEPTANE (CAS 142-82-5)

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
Japan	Inventory of Existing and New Chemical	Yes

	Substances (ENCS)	
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

Date of Current Revision: 12/9/19
Revision Summary: Updated all sections.
Date of Previous Revision: 10/2017

Disclaimer - The information in the SDS is based on the data available at the time. While believed to be accurate, Corco does not claim it to be all inclusive. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. It is not intended to provide product performance or applicability information, and no express or implied warranty of any kind is made with respect to the product, the underlying product data, or the information contained herein. We will not provide advice on such matters, or be responsible for any injury or damage resulting from the use of the product described herein.