

CORCO CHEMICAL CORPORATION

Manufacturers of ACS Reagents and Semiconductor Grade Chemicals

SAFETY DATA SHEET

HEPTANE

1. IDENTIFICATION

Product identifier: HEPTANE

Product Code Number: 1300

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

Trade Name:

Heptane

Synonyms:

n-Heptane; normal Heptane;
Dipropyl Methane; Heptyl Hydride

Chemical Formula:

$\text{CH}_3(\text{CH}_2)_5\text{CH}_3$

Product Use:

Process chemical, Laboratory and
scientific research and development

2. HAZARD(S) IDENTIFICATION

Physical hazards:

Flammable liquids

Category 2

Health hazards:

Skin corrosion/irritation

Category 2

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)

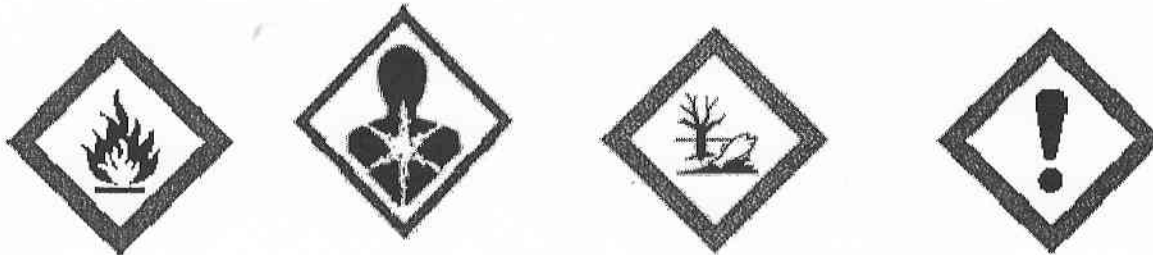
Aspiration hazard

Category 1

OSHA hazard(s):

Not classified.

Label elements



Hazard statement: Highly flammable liquid and vapor. May be fatal if swallowed and enters airways. Causes skin irritation. Causes eye irritation. May cause respiratory irritation. May cause drowsiness or dizziness. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement: Prevention - 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.

Response: In case of fire: Use appropriate media for extinction. Eliminate all ignition sources if safe to do so. 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 skin irritation occurs:** Get medical advice/attention. **If eye irritation persists:** Get medical advice/attention.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Disposal: Dispose of contents/container to an approved incineration plant.

Emergency Overview Breathing vapors may cause drowsiness and dizziness. Cause eye skin, and respiratory tract irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. Highly flammable liquid and vapor. Static electrical hazard. Target Organs: Central nervous system, eyes, skin, and lungs.

3. Composition/information on ingredients

CAS Number: 142-82-5

EC Number: 205-563-8

Index Number: 601-008-00-2

Molecular Weight: 100.20 g/mol

<u>Ingredient</u>	<u>CAS Number</u>	<u>EC Number</u>	<u>Percent</u>	<u>Hazardous</u>	<u>Chemical characterization</u>
Heptane	142-82-5	205-563-8	90 -100%	Yes	Substance

4. First-aid measures

Inhalation: If inhaled, remove to fresh air. If breathing is labored or with coughing, give 100% supplemental oxygen. If not breathing, begin artificial respiration. Get medical aid.

Ingestion: Aspiration hazard. Get medical aid immediately. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have person lean forward.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact: Check for and remove contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

Notes to Physician: Treat symptomatically and supportively.

General information: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. If you feel unwell, seek medical advice (show the label where possible). Wash contaminated clothing before reuse.

5. Fire-fighting measures

Fire: Flammable Liquid and Vapor! Contact with strong oxidizers may cause fire. Flash point: -4C (25F) CC; Autoignition temperature: 204C (399F); Flammable limits in air % by volume: lel: 1.05; uel: 6.7

Explosion: Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.

Fire Extinguishing Media: Dry chemical, foam or Carbon Dioxide. Water may be ineffective. Water spray may be used to keep fire exposed containers cool.

Special Information: In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

National Fire Protective Association: Health - 1, Flammability - 3, Reactivity - 0
NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures: Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Local authorities should be advised if significant spillages cannot be contained. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

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. Use appropriate containment to avoid environmental contamination. Prevent further leakage or spillage if safe to do so. Do not contaminate water.

7. Handling and storage

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Ground and bond containers when

transferring material. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Empty containers contain product residue (liquid and vapor) and can be dangerous. Keep container tightly closed and away from heat, spark, and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks, or open flames. Use with adequate ventilation. Avoid breathing vapor or mist.

Storage: Keep in a flammables area away from all sources of ignition and oxidizing materials. Keep in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

8. Exposure controls/personal protection

N-Heptane:

Ventilation System: 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.

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 goggles and / or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Personal Respirators (NIOSH Approved): A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Exposure Limits: N-Heptane:

ACGIH – 400 ppm TWA; 500 ppm STEL

NIOSH – 85 ppm TWA; 350 mg/m³ TWA; 750 ppm IDLH

OSHA Final PELs – 500 ppm TWA; 2000 mg/m³ TWA

OSHA Vacated PELs – 400 ppm TWA; 1600 mg/m³ TWA

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:	- 91C (-132F)
Boiling Point / Boiling Range:	98C (208F)
Flash Point:	-4C (25F) CC
Evaporation Rate (BuAC=1):	Not determined
Flammability:	Flammable liquid and vapor
Upper / Lower Flammability or Explosive Limits: uel:	6.7; lel: 1.05
Vapor Pressure (mm Hg):	40 @ 20C (68F)
Vapor Density (Air=1):	3.5
Relative Density:	0.684 g/mL at 25C (77F)
Solubility:	Insoluble in water
Partition Coefficient:	n-octanol / water: log Pow: > 3
Auto-ignition Temperature:	204C (399F)
Decomposition Temperature:	No data available
Viscosity:	No data available
Molecular Formula:	CH ₃ (CH ₂) ₅ CH ₃
Molecular Weight:	100.21
Specific Gravity:	0.68 g/cm ³ @ 20o C

10. Stability and reactivity

Reactivity and / or Chemical Stability: Stable under ordinary conditions of use and storage. Heat will contribute to instability.

Possibility of Hazardous Reactions and Conditions to Avoid: Heat, flame, ignition sources, incompatibles.

Incompatible Materials: Heat, flame, other sources of ignition, strong oxidizers.

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

11. Toxicological information

Routes of Entry: Inhalation, skin absorption, skin contact.

Acute Exposure Hazards:

INHALATION HAZARD: Inhalation of vapors irritates the respiratory tract. High concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness, and coma.

INGESTION HAZARD: May produce gastrointestinal irritation with abdominal pain, nausea, vomiting, and diarrhea. Aspiration into lungs may cause chemical pneumonitis, which may be fatal.

SKIN CONTACT HAZARD: Causes skin irritation. Defatting or dermatitis may result from prolonged or repeated exposure.

EYE CONTACT HAZARD: Causes eye irritation.

Chronic Exposure Hazards: Repeated or prolonged skin contact may defat the skin and produce irritation and dermatitis.

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.

Animal Toxicity:

Inhalation, rat: LC50 = 103 mg/m³ /4H;

Carcinogenicity: Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65

Epidemiology: No information found.

Teratogenicity: No information found.

Reproductive Effects: No information found.

Mutagenicity: No information found.

Neurotoxicity: No information found.

Numerical Measures of Toxicity: Cancer Lists: NTP Carcinogen

<u>Ingredient</u>	<u>Known</u>	<u>Anticipated</u>	<u>IARC Category</u>
Heptane (CAS 142-82-5)	No	No	None

12. Ecological information

Ecotoxicity:

Fish: Goldfish: LC50 = 4.0 mg/L, 24H, unspecified

Fish: Mosquito fish: LC50 = 4900 mg/L, 24H, unspecified

Fish: LC50 = 4900 mg/L, 24H, unspecified, no data available

Environmental Fate: Photolysis and hydrolysis are not expected to be important in soils. Biodegradation may occur in soils; however, volatilization and adsorption are expected to be far more important. Based on vapor pressure of 45.8 mm Hg at 25o

C, heptane is expected to exist entirely in the vapor phase in ambient air. Direct photolysis of heptane is not expected to be important.

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: 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.

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: UN1206

UN Proper Shipping Name: HEPTANES

Packing Group: II

DOT / IMDG / IATA



Land Transport ADR/RID and GGVS/GGVE (Cross Border / Domestic)
Transport Hazard Class(es): 3
Maritime Transport IMDG/GGVSea
Transport Hazard Class(es): 3
Marine Pollutant: No
Air Transport ICAO-TI and IATA-DGR
Transport Hazard Class(es): 3
Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code.

Special Precautions for User: No additional information.

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)

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
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	Yes
(PICCS)		
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

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.

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