

CORCO CHEMICAL CORPORATION

Manufacturers of ACS Reagents and Semiconductor Grade Chemicals

SAFETY DATA SHEET

HEXANE, ACS REAGENT

1. Identification

Product identifier: Hexane, ACS Reagent

Product Code Number: 1305

Trade Name: Hexane, ACS Reagent

Synonyms: n-Hexane; Hexanes, Hexyl hydride

Chemical Formula: CH₃(CH₂)₄CH₃

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: 12/5/19

2. Hazard(s) identification

Classification of the Substance or Mixture:

Flammable Liquid Category 2

Aspiration Toxicity Category 1

Skin Irritant Category 2

Reproductive Toxicity Category 2

Specific Target Organ Toxicity Single Exposure Category 3 (Narcotic effects)

Specific Target Organ Toxicity Repeated Exposure Category 2

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.

H361 Suspected of damaging fertility.

H373 May cause damage to central nervous system through prolonged or repeated exposure by inhalation.

Precautionary Statements:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

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.

P260 Do not breathe mist or vapors.

P264 Wash thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves.

P308+P313 IF exposed or concerned: Get medical attention.

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 IN 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.

3. Composition/information on ingredients

Ingredient	CAS Number	Percent	Hazardous Chemical
Hexane	110-54-3	60-100%	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. May cause reproductive harm. Prolonged exposure by inhalation may damage the central nervous system.

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. Will decompose into highly toxic and irritating gases (carbon monoxide and carbon dioxide) under fire conditions.

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. Do not breathe 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
Hexane	50 ppm TWA ACGIH TLV (skin) 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

Physical State and Appearance: Clear, colorless liquid.

Odor: Gasoline-like odor

Odor Threshold: 130 ppm

Molecular Formula: CH₃(CH₂)₄CH₃

Molecular Weight: 86.18

Auto-ignition Temperature: 225°C (437°F)

Flash Point: 22°C (-7.6°F)

Upper / Lower Flammability or Explosive Limits: LEL: 1.1 vol %, UEL: 7.5 vol%

pH: Not available.

Boiling Point / Boiling Range: 69°C @ 760 mm Hg

Melting Point/Freezing Point: -95°C

Flammability (solid, gas): Not applicable

Decomposition Temperature: Not available

Relative Density: 0.659 g/cm³ @ 20°C

Vapor Density (Air=1): 2.97

Vapor Pressure: 124 mm Hg @ 20°C.

Viscosity: 0.31 cP 20°C

Solubility: Insoluble

Evaporation rate: >1

Conductivity: Nonconductive; Conductivity = 3x10⁻⁵ pS/m

Dielectric Constant = 1.9

Relaxation Time Constant = ~100 seconds (dissipation)

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. Hexane may be absorbed through the skin with possible systemic effects.

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: Chronic inhalation may cause peripheral nerve disorders and central nervous system effects. Chronic exposure produces peripheral neuropathy with effects including muscular weakness, paresthesia, numbing of the hands, feet, legs, and arms, unsteadiness, and difficulty walking and standing. Repeated exposure may cause nervous system abnormalities with muscle weakness and damage, motor incoordination, and sensation disturbances.

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

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

Reproductive Effects: N-Hexane is suspected of damaging fertility.

Mutagenic Effects: Not expected to cause mutagenic activity.

Acute Toxicity:

Hexane: Oral rat LD50: 16000 mg/kg, Inhalation rat LC50: 259.354 mg/L/4 hr, Skin rabbit LD50: 3350 mg/kg

12. Ecological information

Exotoxicity:

Product	Species	Test Results
Hexane	Rainbow trout	12.51 mg/L 96 hr LL50
	Daphnia magna	21.85 mg/L 48 hr EL50
	Rainbow trout	2.8 mg/L 28 day NOELR
	Daphnia magna	4.888 mg/L 21 days NOELR

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

Persistence and Degradability: Hexane will be degraded in the atmosphere by reaction with hydroxyl radicals; the half-life of this reaction in air is estimated to be three days. Screening studies suggest that Hexane will undergo biodegradation in soil and water surfaces, but volatilization is expected to be the predominant fate process in the environment. Hydrolysis is not expected to be an important environmental fate process.

Bioaccumulative Potential: An estimated bioconcentration factor (BCF) of 2300 and log Kow of 3.9 for Hexane suggest the potential for bioconcentration in aquatic organisms is high. Metabolites may partially bioaccumulate in the lipid bilayer of fish tissues.

Mobility in Soil: Hexane is highly volatile and will partition rapidly in the air. When released into water, Hexane will be lost by volatilization and biodegradation.

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.

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	UN1208	Hexanes	3	II	Not applicable
IMDG	UN1208	Hexanes	3	II	Not applicable
IATA	UN1208	Hexanes	3	II	Not applicable

***Hazardous Substance (49CFR172.101):** Hexane (RQ 5,000 lbs) (5,000 lbs. product)

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:

Health and Safety Reporting List: CAS# 110-54-3 is not listed.

Chemical Test Rules: CAS# 110-54-3 is not listed.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

TSCA Significant New Use Rule: Does not have an SNUR under TSCA.

CERCLA Hazardous Substance List (40 CFR 302,4)

This product has a Reportable Quantity (RQ) of 5,000 lbs. (based on the RQ for n-Hexane of 5,000 lbs present at 100%). Releases above the RQ must be reported to the National Response Center. Many states have more stringent release reporting requirements. Report spills required under federal, state and local 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: HEXANE (CAS 110-54-3)

SARA 302 Extremely hazardous substance

None

Clean Air Act: CAS# 110-54-3 is listed as a hazardous air pollutant (HAP). It is not a Class 1 Ozone Depleter. It is not a Class 2 Ozone Depleter.

Clean Water Act: CAS# 110-54-3 is not listed as a Hazardous Substance. It is not a Priority Pollutant. It is not a Toxic Pollutant.

OSHA: Not considered highly hazardous by OSHA.

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

HEXANE (CAS 110-54-3)

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

HEXANE (CAS 110-54-3)

US. Pennsylvania RTK - Hazardous Substances

HEXANE (CAS 110-54-3)

US. Minnesota RTK

HEXANE (CAS 110-54-3)

**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT):
Listed substance**

Not listed

International Inventories:

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
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: 12/5/19

Revision Summary: Updated all sections.

Date of Previous Revision: N/A

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.