









# Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
   	<p>Flammable material; avoid heat and sources of ignition.                      Environmental hazard.                      Harmful compound, minimize exposure.  <b>CARCINOGEN. MINIMIZE EXPOSURE.</b>                      This material is toxic to aquatic organisms and may cause long term adverse effects to the aquatic environment.</p>	   

## Section I. Chemical Product and Company Identification

Chemical Name	<b>Hexane Anhydrous</b>		
Catalog Number	H1197	Supplier	TGI America 9211 N. Harborsgate St. Portland OR 1-800-423-8616
Synonym	Not available.		
Chemical Formula	C <sub>6</sub> H <sub>14</sub>		
CAS Number	110-54-3	In case of Emergency Call	<b>Chemtrec®</b> <b>(800) 424-9300 (U.S.)</b> <b>(703) 527-3887 (International)</b>

## Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Hexane Anhydrous	110-54-3	Min. 96.0 (GC)	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.	Rat LD <sub>50</sub> (oral) 25 gm/kg Rat LD <sub>50</sub> (inhalation) 48000 ppm/4H

## Section III. Hazards Identification

Acute Health Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	<p><b>CARCINOGENIC EFFECTS</b> : Not available.  <b>MUTAGENIC EFFECTS</b> : Not available.  <b>TERATOGENIC EFFECTS</b> : Tumorigenic Effects.                      Rat TCLo Inhalation 1000 ppm/4H/59 weeks intermittent                      TOXIC Effects:                      Tumorigenic - Carcinogenic by RTECS criteria                      Tumorigenic Effects - Testicular tumors                      Mouse TCLo Inhalation 9018 ppm/6 hours/2 years intermittent                      TOXIC Effects:                      Tumorigenic - Neoplastic by RTECS criteria                      Liver - Tumors  <b>DEVELOPMENTAL TOXICITY:</b> Reproductive Effects.                      Rat TCLo Inhalation 5000 ppm, female 6-19 days of pregnancy                      TOXIC Effects:                      Specific Developmental Abnormalities - Musculoskeletal system                      Specific Developmental Abnormalities - Urogenital system                      Rat TCLo Inhalation 1000 ppm, female 6-19 days of pregnancy                      TOXIC Effects                      Effects on Embryo or Fetus - Fetotoxicity                      Mouse TCLo Inhalation 200 ppm, female 6-17 days of pregnancy                      TOXIC Effects:                      Effects on Fertility - Post-implantation mortality</p>

## Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

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Emergency phone number (800) 424-9300

**Section V. Fire and Explosion Data**

Flammability	Flammable.	Auto-Ignition	234 °C (453.2 °F)
Flash Points	-23 °C (-9.4 °F).	Flammable Limits	LOWER: 1.2% UPPER: 7.7%
Combustion Products	These products are toxic carbon oxides (CO, CO <sub>2</sub> ).		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions	Flammable liquid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Consult with local fire authorities before attempting large scale fire-fighting operations.		


**Section VI. Accidental Release Measures**

Spill Cleanup Instructions	Flammable material. Environmentally hazardous material. Harmful material. Carcinogenic material. Keep away from heat. Mechanical exhaust required. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. DO NOT touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Consult federal, state, and/or local authorities for assistance on disposal.
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**Section VII. Handling and Storage**

Handling and Storage Information	FLAMMABLE. ENVIRONMENTAL HAZARD. HARMFUL. CARCINOGEN. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. Do not breathe gas/fumes/ vapor/spray. Always store away from incompatible compounds such as oxidizing agents.
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**Section VIII. Exposure Controls/Personal Protection**

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash station and safety shower is proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent.
	
Exposure Limits	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.

**Section IX. Physical and Chemical Properties**

Physical state @ 20°C	Liquid. (Clear, colorless.)	Solubility	Insoluble in water. Miscible with alcohol, chloroform, ether.
Specific Gravity	0.66 (water=1)		
Molecular Weight	86.18	Partition Coefficient	Log P <sub>ow</sub> = 3.90 - 4.11
Boiling Point	68 to 70 °C (154.4 to 158 °F)	Vapor Pressure	176 hPa (@ 20 °C)
Melting Point	-100 to -95 °C (-148 to -139 °F)	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Gasoline like
Viscosity	Not available.	Taste	Not available.


**Section X. Stability and Reactivity Data**

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light.
Incompatibilities	Reactive with oxidizing agents.

<b>Section XI. Toxicological Information</b>	
RTECS Number	MN9275000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD <sub>50</sub> (oral) 25 gm/kg Rat LD <sub>50</sub> (inhalation) 48000 ppm/4H
Chronic Toxic Effects	<b>CARCINOGENIC EFFECTS</b> : Not available. <b>MUTAGENIC EFFECTS</b> : Not available. <b>TERATOGENIC EFFECTS</b> : Tumorigenic Effects. Rat TCLo Inhalation 1000 ppm/4H/59 weeks intermittent TOXIC Effects: Tumorigenic - Carcinogenic by RTECS criteria Tumorigenic Effects - Testicular tumors Mouse TCLo Inhalation 9018 ppm/6 hours/2 years intermittent TOXIC Effects: Tumorigenic - Neoplastic by RTECS criteria Liver - Tumors <b>DEVELOPMENTAL TOXICITY:</b> Reproductive Effects. Rat TCLo Inhalation 5000 ppm, female 6-19 days of pregnancy TOXIC Effects: Specific Developmental Abnormalities - Musculoskeletal system Specific Developmental Abnormalities - Urogenital system Rat TCLo Inhalation 1000 ppm, female 6-19 days of pregnancy TOXIC Effects Effects on Embryo or Fetus - Fetotoxicity Mouse TCLo Inhalation 200 ppm, female 6-17 days of pregnancy TOXIC Effects: Effects on Fertility - Post-implantation mortality
Acute Toxic Effects	Harmful if ingested or inhaled. Minimize exposure to this material. Severe overexposure can result in injury or death. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

<b>Section XII. Ecological Information</b>	
Ecotoxicity	Not available.
Environmental Fate	n-Hexane's production and use as a pure or commercial grade solvent, as a raw material in the synthesis of polyolefins, elastomers and pharmaceuticals, in the formulation of glues, stains, varnishes and other industrial chemicals may result in its release to the environment through various waste streams. n-Hexane is also a component of natural gas and crude oil. The vast majority of n-hexane is released to the environment through the manufacture, use, and disposal of many products associated with the petroleum industry and the combustion of gasoline. If released to air, a vapor pressure of 153 mm Hg at 25 deg C indicates n-hexane will exist solely as a vapor in the ambient atmosphere. Vapor-phase n-hexane will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 3 days. If released to soil, n-hexane is expected to have high mobility based upon an estimated Koc of 150. Volatilization from moist soil surfaces is expected to be an important fate process based upon an estimated Henry's Law constant of 1.83 atm-cu m/mole. n-Hexane may volatilize from dry soil surfaces based upon its vapor pressure. Screening studies suggest that n-hexane will undergo biodegradation in soil and water surfaces, but volatilization is expected to be the predominant fate process in the environment. If released into water, n-hexane is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. Volatilization from water surfaces is expected to be an important fate process based upon this compound's estimated Henry's Law constant. Estimated volatilization half-lives for a model river and model lake are 1 hour and 3 days, respectively. An estimated BCF of 200 suggests the potential for bioconcentration in aquatic organisms is high. Hydrolysis is not expected to be an important environmental fate process since this compound lacks functional groups that hydrolyze under environmental conditions. Occupational exposure to n-hexane may occur through inhalation and dermal contact with this compound at workplaces where n-hexane is produced or used. Monitoring data indicate that the general population may be exposed to n-hexane via inhalation of ambient air, particularly at urban areas with heavy vehicular traffic or gasoline filling stations.

<b>Section XIII. Disposal Considerations</b>	
Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

<b>Section XIV. Transport Information</b>	
DOT Classification	DOT Class 3: Flammable liquid.
PIN Number	UN1208
Proper Shipping Name	Hexanes
Packing Group (PG)	II
DOT Pictograms	

**Section XV. Other Regulatory Information and Pictograms**

TSCA Chemical Inventory (EPA)	This compound is <b>ON</b> the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2B: Material causing other toxic effects (TOXIC). On DSL
EINECS Number (EEC)	203-777-6
EEC Risk Statements	R10- Flammable. R18- In use, may form flammable/explosive vapor-air mixture. R20/21/22- Harmful by inhalation, in contact with skin and if swallowed. R45- May cause cancer. R46- May cause heritable genetic damage. R47- May cause birth defects. R51- Toxic to aquatic organisms. R53- May cause long-term adverse effects in the aquatic environment.
Japanese Regulatory Data	ENCS No. 2-6

**Section XVI. Other Information**

**Version 1.0**  
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**Notice to Reader**

TCl laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.

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