

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
 	Flammable material; avoid heat and sources of ignition. Irritating to skin, eyes, and the respiratory system. Refrigerate and vent pressure slowly before opening. Store at 2-8 °C.	   

Section I. Chemical Product and Company Identification

Chemical Name	1-Pentene		
Catalog Number	P0316	Supplier	TCl America 9211 N. Harborage St. Portland OR 1-800-423-8616
Synonym	1-Amylene		
Chemical Formula	CH ₃ CH ₂ CH ₂ CH:CH ₂		
CAS Number	109-67-1	In case of Emergency Call	Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
1-Pentene	109-67-1	Min 98.0 (GC)	Not available.	Rat LD ₅₀ (inhalation) 175,000 mg/m ³ /4H Mouse LD ₅₀ (inhalation) 180,000 mg/m ³ /4H

Section III. Hazards Identification

Acute Health Effects	Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	CARCINOGENIC EFFECTS : Not available. MUTAGENIC EFFECTS : Not available. TERATOGENIC EFFECTS : Not available. DEVELOPMENTAL TOXICITY : Not available. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

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.

Section V. Fire and Explosion Data

Flammability	Flammable.	Auto-Ignition	275 °C (527 °F)
Flash Points	-18 °C (-0.4 °F).	Flammable Limits	LOWER: 1.6% UPPER: 8.7%
Combustion Products	These products are toxic carbon oxides (CO, CO ₂).		
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. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Consult with local fire authorities before attempting large scale fire-fighting operations.		

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Emergency phone number (800) 424-9300

Section VI. Accidental Release Measures

Spill Cleanup Instructions
 Flammable Material. Irritating 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.

Section VII. Handling and Storage

Handling and Storage Information
 FLAMMABLE. IRRITANT. Keep away from heat. Mechanical exhaust required. Avoid excessive heat and light. Do not breathe gas/fumes/ vapor/spray.

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
 Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Liquid. (Clear, Colorless)	Solubility	Insoluble in water. Miscible with Benzene, Ether, Alcohol.
Specific Gravity	0.64 (water=1)		
Molecular Weight	70.13	Partition Coefficient	Not available.
Boiling Point	30°C (86°F)	Vapor Pressure	0.3 kPa (@ 20°C)
Melting Point	Not available.	Vapor Density	132 (Air = 1)
Refractive Index	1.37	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
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 strong oxidizing agents.

Section XI. Toxicological Information

RTECS Number
 SB2179000

Routes of Exposure
 Eye Contact. Ingestion. Inhalation.

Toxicity Data
 Rat LD₅₀ (inhalation) 175,000 mg/m³/4H
 Mouse LD₅₀ (inhalation) 180,000 mg/m³/4H

Chronic Toxic Effects
CARCINOGENIC EFFECTS : Not available.
MUTAGENIC EFFECTS : Not available.
TERATOGENIC EFFECTS : Not available.
DEVELOPMENTAL TOXICITY: Not available.
 Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

Acute Toxic Effects
 Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
 Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

Section XII. Ecological Information

Ecotoxicity Not available.

Environmental Fate 1-Pentene's production and use in organic synthesis, pesticide formulations, and as a blending agent for high octane motor fuels may result in its release to the environment through various waste streams. In addition, 1-pentene has been identified in emissions due to gasoline combustion, gasoline evaporation, and polymer combustion. If released to air, a vapor pressure of 635 mm Hg at 25 deg C indicates 1-pentene will exist solely as a vapor in the ambient atmosphere. Vapor-phase 1-pentene will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals and ozone; the half-lives for these reactions in air are estimated to be 12 and 28 hours, respectively. If released to soil, 1-pentene is expected to have high mobility based upon an estimated Koc of 81. Volatilization from moist soil surfaces is expected to be an important fate process based upon an estimated Henry's Law constant of 0.40 atm-cu m/mole. 1-Pentene may volatilize from dry soil surfaces based upon its vapor pressure. While biodegradation data in soil and water were not located, 1-pentene's linear, relatively low molecular weight, hydrocarbon structure suggests that biodegradation in both environments is expected to be an important fate process. If released into water, 1-pentene is not expected to adsorb to suspended solids and sediment in water 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 2.4 hours and 3.3 days, respectively. An estimated BCF of 22 suggests the potential for bioconcentration in aquatic organisms is low. Occupational exposure to 1-pentene may occur through inhalation and dermal contact with this compound particularly at workplaces where gasoline or fuels are produced or used. The general population may be exposed to 1-pentene via inhalation of air while pumping gasoline at self-serve stationse. Monitoring data of ambient air indicate ppb levels of hydrocarbons including 1-pentene are often present.

Section XIII. Disposal Considerations

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.

Section XIV. Transport Information

DOT Classification DOT CLASS 3: Flammable liquid.

PIN Number UN1108

Proper Shipping Name 1-Pentene

Packing Group (PG) I

DOT Pictograms

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

TSCA Chemical Inventory (EPA) This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.

WHMIS Classification (Canada) On DSL

EINECS Number (EEC) 203-694-5

EEC Risk Statements R12- Extremely flammable.
R18- In use, may form flammable/explosive vapor-air mixture.
R36/37/38- Irritating to eyes, respiratory system and skin.

Japanese Regulatory Data ENCS No. 2-19

Section XVI. Other Information

Version 1.0
Validated on 5/16/2007.
Printed 5/16/2007.

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.