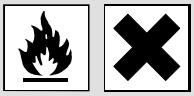
TCI AMERICA

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.** **Handle and store under nitrogen.**	

Section I. Chemical Product and Company Identification

Chemical Name: **n-Heptyl Aldehyde**

Catalog Number	H0025
Synonym	Enanthaldehyde, Heptanal
Chemical Formula	$CH_3(CH_2)_5CHO$
CAS Number	111-71-7

Supplier: TCI America
9211 N. Harborgate St.
Portland OR
1-800-423-8616

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
n-Heptyl Aldehyde	111-71-7	Min. 95.0 (GC)	Not available.	Rat LD_{50} (oral) 3200 mg/kg Mouse LD_{50} (oral) 3200 mg/kg Rabbit LD_{50} (dermal) >5000 mg/kg

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.
There is no known effect from chronic exposure to this product. 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. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Flush eyes with running water for a minimum of 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention. Treat symptomatically and supportively.

Skin Contact

After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. Cover the irritated skin with an emollient. Seek medical attention. Treat symptomatically and supportively. Wash any contaminated clothing before reusing.

Inhalation

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform artificial respiration. WARNING: It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention. Treat symptomatically and supportively.

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, administer artificial respiration. 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. Seek immediate medical attention and, if possible, show the chemical label. Treat symptomatically and supportively.

Section V. Fire and Explosion Data

Flammability	Flammable.	Auto-Ignition	Not available.
Flash Points	34°C (93.2°F).	Flammable Limits	Not available.

Combustion Products

These products are toxic carbon oxides (CO, CO_2).

Fire Hazards

Forms explosive mixtures in air.
Flammable in presence of open flames and sparks, of shocks, of heat.

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.
No additional information is available regarding the risks of explosion.

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Fire Fighting Media and Instructions	Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemicals, CO_2, alcohol foam or water spray. 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.

Section VI. Accidental Release Measures

Spill Cleanup Instructions	Flammable liquid. Irritating liquid. Forms explosive mixtures in air. Keep away from heat and sources of ignition. 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. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information	FLAMMABLE. IRRITANT. HANDLE AND STORE UNDER NITROGEN. Reactive with strong oxidizers; may be ignited by heat, sparks, or flames. Vapors may travel to source of ignition and flash back. Tightly seal container and store in a cool place. Closed containers may explode from heat of a fire. Empty containers may pose a fire risk. Evaporate residue under a fume hood if possible. Ground all equipment containing material. Keep away from heat and sources of ignition. Mechanical exhaust required. Avoid excessive heat and light. DO NOT ingest. Do not breathe gas, fumes, vapor or spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Avoid contact with skin and eyes. Always store away from incompatible compounds such as oxidizing agents, reducing agents.

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. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. 
Exposure Limits	Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Oily, colorless liquid.	Solubility	Slightly soluble in cold water, hot water, carbon tetrachloride. Miscible in diethyl ether, alcohol.
Specific Gravity	0.818		
Molecular Weight	114.19	Partition Coefficient	Not available.
Boiling Point	153°C (307.4°F)	Vapor Pressure	3 mm of Hg (@ 25°C)
Melting Point	-43°C (-45.4°F)	Vapor Density	3.9 (Air = 1)
Refractive Index	1.42571	Volatility	Not available.
Critical Temperature	Not available.	Odor	Penetrating fruity odor.
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, reducing agents.

Section XI. Toxicological Information

RTECS Number	MI6900000
Routes of Exposure	Eye contact. Inhalation. Ingestion. Skin contact.
Toxicity Data	Rat LD_{50} (oral) 3200 mg/kg Mouse LD_{50} (oral) 3200 mg/kg Rabbit LD_{50} (dermal) >5000 mg/kg
Chronic Toxic Effects	**CARCINOGENIC EFFECTS** : Not available. **MUTAGENIC EFFECTS** : Not available. **TERATOGENIC EFFECTS** : Not available. **DEVELOPMENTAL TOXICITY**: Not available. There is no known effect from chronic exposure to this product. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.

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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	Heptanal is a plant and microbial volatile, present in food and widespread in the atmosphere. It also may be released to the environment in emissions or wastewater resulting from its manufacture and use as a chemical intermediate. Heptanal is produced by the reaction of ozone with organic matter present in water and may be produced during water treatment. Atmospheric ozone reacts with material in carpeting and other building materials, producing heptanal emissions. Vehicle exhaust also contain heptanal. Heptanal is estimated to be highly mobile in soil and therefore would be expected to leach. It may also volatilize from the soil surface. It has been shown to be biodegradable in screening tests and one field study and therefore, should biodegrade in soil. Heptanal is easily oxidized and may be oxidized by oxygen and other oxidants present in soil. If release in water, heptanal should readily volatilize, having estimated volatilization half-lives of 6.6 hr and 5.3 days from a model river and model lake, respectively. As in soil, it may biodegrade and be oxidized by oxygen or other oxidants in water. It is not expected to bioconcentrate in fish and aquatic organisms. In the atmosphere, heptanal will react with photochemically-produced hydroxyl radicals, resulting in an estimated half-life of 12.7 hr. The general population will be exposed to heptanal via inhalation of ambient air, ingestion of food and drinking water (treated by ozonation), and dermal contact with vapors, food and other products containing heptanal. Occupational exposure would be by inhalation and dermal contact. (HSDB)

Section XIII. Disposal Considerations

Waste Disposal	Recycle to process, if possible. Consult your local or 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 this substance.

Section XIV. Transport Information

DOT Classification	DOT CLASS 3: Flammable liquid.
PIN Number	UN3056
Proper Shipping Name	n-Heptaldehyde
Packing Group (PG)	III
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)	WHMIS CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). WHMIS CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
EINECS Number (EEC)	203-898-4
EEC Risk Statements	R10- Flammable. R18- In use, may form flammable/explosive vapor-air mixture. R36/37/38- Irritating to eyes, respiratory system and skin.
Japanese Regulatory Data	Not available.

Section XVI. Other Information

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Notice to Reader