



1-HEPTALDEHYDE

GHS Safety Data Sheet

Version No:2.0

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

1-HEPTALDEHYDE

OTHER NAMES

C7-H14-O, C6H13CHO, "MI 6900000", heptanal, enanthal, enanthalaldehyde, enanthole, "heptyl aldehyde", oenanthal, oenanthalaldehyde, "oenanthic aldehyde", oenanthol

PROPER SHIPPING NAME

n-HEPTALDEHYDE

PRODUCT USE

Manufacture of 1-heptanol, ethyl oenanthate. Used in organic syntheses, perfumery, flavourings and pharmaceuticals.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

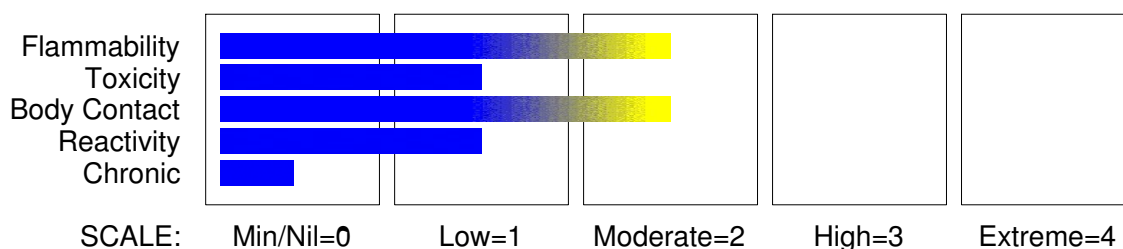
technical@sdfine.com

Telephone: 91- 22- 24959898

Telephone: 91- 22- 24959899

Fax: 91- 22- 24937232

HAZARD RATINGS



Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Oral) Category 5

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Section 2 - HAZARDS IDENTIFICATION

Eye Irritation Category 2A
Flammable Liquid Category 3
Respiratory Irritation Category 3



EMERGENCY OVERVIEW

HAZARD

WARNING

Determined by using GHS criteria:

H335 H226 H303 H319

May cause respiratory irritation

Flammable liquid and vapour

May be harmful if swallowed

Causes serious eye irritation

PRECAUTIONARY STATEMENTS

Prevention

Use only non-sparking tools.

Take precautionary measures against static discharge

Wash hands thoroughly after handling.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment

Keep away from heat/sparks/open flame - No smoking.

Keep container tightly closed.

Wear protective gloves and eye/face protection.

Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists, get medical advice/attention.

Wear eye/face protection.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

If on skin or hair: remove/take off immediately all contaminated clothing. Rinse with water/shower.

In case of fire, use foam for extinction.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

Disposal

Dispose of contents and container in accordance with relevant legislation.

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Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
heptaldehyde	111-71-7	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

For advice, contact a Poisons Information Centre or a doctor.

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

EYE

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin or hair contact occurs:

- Immediately flush body and clothes with large amounts of water, using safety shower if available.
- Quickly remove all contaminated clothing, including footwear.
- Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre.
- Transport to hospital, or doctor.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

Treat symptomatically.

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Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

- Liquid and vapour are flammable.
- Moderate fire hazard when exposed to heat or flame.
- Vapour may travel a considerable distance to source of ignition.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

FIRE INCOMPATIBILITY

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

Personal Protective Equipment

Gloves, boots (chemical resistant).
Breathing apparatus - high vapour/dust levels only.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.

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Section 6 - ACCIDENTAL RELEASE MEASURES

- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Neutralise/decontaminate residue.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+: May be stored together

O: May be stored together with specific precautions

X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights, heat or ignition sources.
- When handling, DO NOT eat, drink or smoke.
- Vapour may ignite on pumping or pouring due to static electricity.
- DO NOT use plastic buckets.
- Earth and secure metal containers when dispensing or pouring product.
- Use spark-free tools when handling.
- Avoid contact with incompatible materials.
- Keep containers securely sealed.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

SUITABLE CONTAINER

Plastic container.

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Section 7 - HANDLING AND STORAGE

- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents, bases and strong reducing agents.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

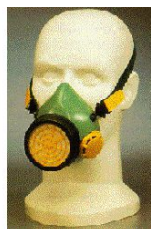
- heptaldehyde:

CAS:111- 71- 7

MATERIAL DATA

No exposure limits set by NOHSC or ACGIH.

PERSONAL PROTECTION



EYE

- Safety glasses with side shields.
- Chemical goggles.
- Full face shield may be required for supplementary but never for primary protection of eyes
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

Wear chemical protective gloves, eg. PVC.

Wear safety footwear.

OTHER

- Overalls.
- Barrier cream
- Eyewash unit.

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half- face Respirator	Full- Face Respirator
1000	10	A- AUS	-
1000	50	-	A- AUS
5000	50	Airline *	-
5000	100	-	A- 2
10000	100	-	A- 3
	100+		Airline**

* - Continuous Flow

** - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25- 0.5 m/s (50- 100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5- 1 m/s (100- 200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1- 2.5 m/s (200- 500 f/min.)
grinding, abrasive blasting, tumbling, high	2.5- 10 m/s (500- 2000 f/min.)

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).

Within each range the appropriate value depends on:

Lower end of the range

- 1: Room air currents minimal or favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only.
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood- local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Oily, colourless liquid with penetrating fruity odour; does not mix with water. Miscible with alcohol, ether. Soluble in 3 vols of 60% alcohol.

PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Floats on water.

Molecular Weight: 114.19

Melting Range (°C): - 43

Solubility in water (g/L): Immiscible

pH (1% solution): Not applicable

Volatile Component (%vol): Not available

Relative Vapour Density (air=1): >1

Lower Explosive Limit (%): Not available

Autoignition Temp (°C): Not available

State: Liquid

Boiling Range (°C): 153

Specific Gravity (water=1): 0.818

pH (as supplied): Not applicable

Vapour Pressure (kPa): Not available

Evaporation Rate: Not available

Flash Point (°C): 35.00

Upper Explosive Limit (%): Not available

Decomposition Temp (°C): Not available

log Kow : 1.99

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Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Although ingestion is not thought to produce harmful effects (as classified under EC Directives), the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

EYE

Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. The liquid may produce skin discomfort following prolonged contact. Defatting and/or drying of the skin may lead to dermatitis. Open cuts, abraded or irritated skin should not be exposed to this material.

INHALED

Limited evidence exists, or practical experience predicts, that the material produces irritation of the respiratory system in a significant number of individuals following inhalation. Although inhalation is not thought to produce harmful effects (as classified under EC Directives), the material may still produce health damage, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic

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Section 11 - TOXICOLOGICAL INFORMATION

substances are generally confined to doses producing mortality rather than those producing morbidity (disease, ill-health).

Inhalation of vapour may aggravate a pre-existing respiratory condition.

Exposure to the simple aldehydes may result in central nervous system effects including headache, vertigo, seizures, depression and coma. Cardiovascular involvement may result in tachycardia, cardiovascular collapse and hypotension whilst respiratory tract involvement may result in irritation, upper airway oedema and laryngospasm, cough, dysphagia, pulmonary oedema, bronchial constriction, and asthma-like reactive airway disease. Gastrointestinal effects include nausea, vomiting (haematemesis), diarrhoea, severe mucosal necrosis and abdominal pain. Massive exposures may produce kidney and liver damage. Animals exposed to aldehyde vapours often show damage to the respiratory tract and pulmonary oedema. Multiple haemorrhages and alveolar exudate may also be present. In general, the aldehydes appear to be free of the actions that lead to cumulative organic damage to tissues. Intolerable irritant properties of these compounds preclude substantial worker exposure under normal conditions although these products may cause olfactory fatigue at lower concentrations and therefore may not provide adequate warning of overexposure based on smell alone. Rapid metabolic conversion to innocuous compounds probably limits those critical reactions necessary to initiate or promote tumourigenesis, although tissue irritation even at low exposure may promote tumour formation by other compounds. Caution is therefore mandatory. Development of short-term tolerance to aldehyde vapours has been reported. This may be related to reaction with catecholamines leading to depletion of the catecholamine stores in the smooth muscle of the respiratory tract. Such depletion may cause the sensory nerve endings of the upper respiratory tract to exhibit reduced activity thus lessening the initial respiratory distress. Although a number of aldehydes produce narcosis, this effect is rarely observed because the irritation that accompanies exposure generally serves as a sufficient warning property.

CHRONIC HEALTH EFFECTS

Principal routes of exposure are by accidental skin and eye contact and by inhalation of vapours especially at higher temperatures.

No human exposure data available. For this reason health effects described are based on experience with chemically related materials.

As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

TOXICITY AND IRRITATION

TOXICITY

Oral (rat) LD50: 14000 mg/kg

Oral (mouse) LD50: 20000 mg/kg

IRRITATION

Nil Reported

Section 12 - ECOLOGICAL INFORMATION

BOD5: 28%

COD: 73%

log Kow : 1.99

BOD 5 if unstated: 28%

COD: 73%

Toxicity Fish: LC50(96)85.6ug/L

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Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: FLAMMABLE LIQUID
HAZCHEM: 3[Y]

UNDG:

Dangerous Goods Class:	3	Subrisk:	None
UN Number:	3056	Packing Group:	III
Shipping Name:n-HEPTALDEHYDE			

Air Transport IATA:

ICAO/IATA Class:	3	ICAO/IATA Subrisk:	None
UN/ID Number:	3056	Packing Group:	III
ERG Code:	3L		
Shipping name:n-HEPTALDEHYDE			

Maritime Transport IMDG:

IMDG Class:	3	IMDG Subrisk:	None
UN Number:	3056	Packing Group:	III
EMS Number:	F- E, S- D		
Shipping name:n-HEPTALDEHYDE			

Section 15 - REGULATORY INFORMATION

REGULATIONS

heptaldehyde (CAS: 111-71-7) is found on the following regulatory lists;
International Council of Chemical Associations (ICCA) - High Production Volume List
OECD Representative List of High Production Volume (HPV) Chemicals

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Section 16 - OTHER INFORMATION

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 12-May-2018