

CYCLOPENTANE

GHS Safety Data Sheet

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

CYCLOPENTANE

OTHER NAMES

C5-H10, pentamethylene, Uvasol

PROPER SHIPPING NAME

CYCLOPENTANE

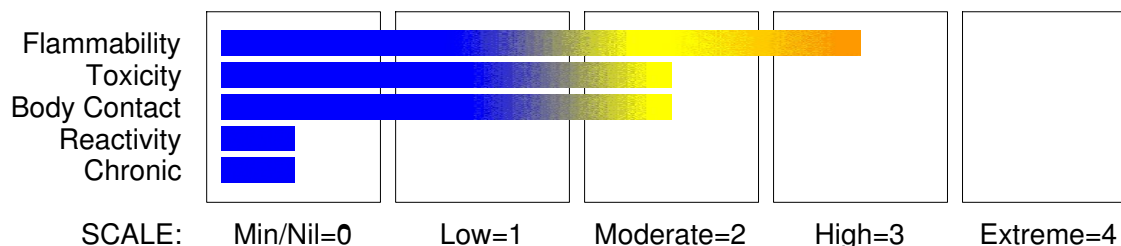
PRODUCT USE

Used as a solvent, for the production of analgesics, sedatives, hypnotics, anti-tumour agents, insecticides, solvent for cellulose ethers.
The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing.
Before starting consider control of exposure by mechanical ventilation.

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



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Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Chronic Aquatic Hazard Category 3
Eye Irritation Category 2B
Flammable Liquid Category 2
Respiratory Irritation Category 3



EMERGENCY OVERVIEW

HAZARD

DANGER

Determined by using GHS criteria:

H335 H225 H320 H412

May cause respiratory irritation

Highly flammable liquid and vapour

Causes eye irritation

Harmful to aquatic life with long lasting effects

PRECAUTIONARY STATEMENTS

Prevention

Take precautionary measures against static discharge

Use explosion-proof electrical/ventilating/lighting/equipment

Use only non-sparking tools.

Wash hands thoroughly after handling.

Ground/bond container and receiving 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.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

In case of fire, use foam for extinction.

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

In case of fire, use dry agent for extinction.

Disposal

Dispose of contents and container in accordance with relevant legislation.

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Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
cyclopentane	287-92-3	>95

Section 4 - FIRST AID MEASURES

SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- 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.
- Transport to hospital or doctor without delay.

EYE

- If this product comes in contact with the eyes:
- Wash out immediately with fresh 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.
 - If pain persists or recurs seek medical attention.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

- If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear.
 - Flush skin and hair with running water (and soap if available).
 - Seek medical attention in event of irritation.

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

For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:

- Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
- Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ 50 mm Hg) should be intubated.

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Section 4 - FIRST AID MEASURES

- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
 - A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
 - Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
 - Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology].
-

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Alcohol stable foam.
- Dry chemical powder. or Dry agent.
Carbon dioxide.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
 - Wear breathing apparatus plus protective gloves for fire only.
 - Prevent, by any means available, spillage from entering drains or water course.
 - Consider evacuation (or protect in place).
- DO NOT approach cylinders suspected to be hot.
If safe to do so, remove containers from path of fire.
Cool fire exposed containers with water spray from a protected location.
Fight fire from a safe distance, with adequate cover.

FIRE/EXPLOSION HAZARD

- Highly Flammable.
- .
- Dangerous hazard when exposed to heat or flame.
Severe vapour explosion hazard, when exposed to flame or spark.
Vapour may travel a considerable distance to source of ignition.
Decomposition may produce toxic fumes of:
carbon monoxide (CO) and carbon dioxide (CO₂).

FIRE INCOMPATIBILITY

- Avoid reaction with oxidising agents.

Personal Protective Equipment

- Gloves, boots (chemical resistant).
Breathing apparatus.

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Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

Clean up all spills immediately.

Remove all ignition sources.

Wear protective clothing, impervious gloves and safety glasses.

Avoid breathing vapours and contact with skin and eyes.

Wipe up and absorb small quantities with vermiculite or other absorbent material.

Place in suitable containers for disposal.

MAJOR SPILLS

No smoking or naked lights within area.

Clear area of personnel and move upwind.

Alert Fire Brigade and tell them location and nature of hazard.

- Wear full body protective clothing with breathing apparatus.

- Prevent, by any means available, spillage from entering drains or water courses.

- Consider evacuation (or protect in place).

If contamination of drains or waterways occurs, advise emergency services.

Shut off all possible sources of ignition and increase ventilation.

Stop leak if safe to do so.

Contain spill with sand, earth or vermiculite.

Recover liquid and place in labelled, sealable container for recycling.

Absorb remaining product with sand, earth or vermiculite.

Collect, using a spark-free shovel, and seal in labelled drums for disposal.

Wash spill area with detergent and water.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

cyclopentane 15000 ppm

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

cyclopentane 4000.00 ppm

other than mild, transient adverse effects without perceiving a clearly defined odour is:

cyclopentane 1800 ppm

The threshold concentration below which most people will experience no appreciable risk of health effects:

cyclopentane 600 ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	$\geq 0.1\%$	Toxic (T)	$\geq 3.0\%$
R50	$\geq 0.25\%$	Corrosive (C)	$\geq 5.0\%$
R51	$\geq 2.5\%$		
else	$\geq 10\%$		

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Section 6 - ACCIDENTAL RELEASE MEASURES

where percentage is percentage of ingredient found in the mixture

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+ X X X X +

+: 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 breathing mist and vapour.

Handle and open container with care.

- 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

- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

Avoid storage with oxidisers.

STORAGE REQUIREMENTS

- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources.

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Section 7 - HANDLING AND STORAGE

- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- Keep containers securely sealed.
- Store away from incompatible materials in a cool, dry well ventilated area.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.
- Protect from heat. Keep cool.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- cyclopentane:

CAS:287- 92- 3

MATERIAL DATA

Exposure at or below the TLV-TWA is thought to provide a sufficient margin of safety against the risk of undue irritation and narcosis, The possibility of high, repeated exposures causing polyneuropathy cannot be discounted.

PERSONAL PROTECTION



EYE

- Chemical goggles.
- Safety glasses with side shields.
- Full face shield.
- 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 removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

- Barrier cream and Nitrile rubber gloves or Polyethylene gloves.
- Safety footwear.

OTHER

- Overalls and · Eyewash unit.
- Ensure there is ready access to a safety shower.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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

If inhalation risk of overexposure exists, wear SAA approved organic-vapour respirator.

Provide adequate ventilation in warehouse or closed storage areas.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Colourless, thin highly flammable liquid, mild, sweet odour (ether-like).

Highly flammable and vapour is denser than air.

Insoluble in water and floats on the surface. Soluble in alcohol, ether, acetone and benzene.

PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Floats on water.

Molecular Weight: 70.14

Melting Range (°C): - 94

Solubility in water (g/L): Immiscible

pH (1% solution): Not applicable.

Volatile Component (%vol): 100

Relative Vapour Density (air=1): 2.42

Lower Explosive Limit (%): 1.5

Autoignition Temp (°C): 361

State: Liquid

Boiling Range (°C): 49.2

Specific Gravity (water=1): 0.745 @ 20 C

pH (as supplied): Not applicable

Vapour Pressure (kPa): 53.3 @ 31 C

Evaporation Rate: Very Fast

Flash Point (°C): - 37

Upper Explosive Limit (%): Not available.

Decomposition Temp (°C): Not available

Viscosity: Not available

log Kow (Sangster 1997): 3

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

log Kow: 3

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

Accidental ingestion of the material may be damaging to the health of the individual.
Considered an unlikely route of entry in commercial/industrial environments.

EYE

Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to 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 liquid may produce eye discomfort and is capable of causing temporary impairment of vision and/or transient eye inflammation, ulceration.

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.
and may cause drying of the skin.

The material may accentuate any pre-existing dermatitis condition.

INHALED

Inhalation may produce health damage*.

Limited evidence exists, or practical experience predicts, that the material produces irritation of the respiratory system in a significant number of individuals following inhalation.

Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression - characterised by headache and dizziness, increased reaction time, fatigue and loss of co-ordination.

Central nervous system (CNS) depression may include nonspecific discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.

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Section 11 - TOXICOLOGICAL INFORMATION

CHRONIC HEALTH EFFECTS

Principal routes of exposure are usually by inhalation of vapour and skin contact with the material.

Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.

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

Not available. Refer to individual constituents.

Section 12 - ECOLOGICAL INFORMATION

Fish LC50 (96hr.) (mg/l): 100

log Kow (Sangster 1997): 3

log Kow: 3

Koc: 272-1020

Half-life (hr) air: 74.4-76.4

Half-life (hr) H₂O surface water: 2.5-124.8

Henry's atm m³/mol: 0.188

log BCF: 0.08-2.05

The lower molecular weight hydrocarbons are expected to form a "slick" on the surface of waters after release in calm sea conditions. This is expected to evaporate and enter the atmosphere where it will be degraded through reaction with hydroxy radicals.

Some of the material will become associated with benthic sediments, and it is likely to be spread over a fairly wide area of sea floor. Marine sediments may be either aerobic or anaerobic. The material, in probability, is biodegradable, under aerobic conditions (isomerised olefins and alkenes show variable results). Evidence also suggests that the hydrocarbons may be degradable under anaerobic conditions although such degradation in benthic sediments may be a relatively slow process.

Under aerobic conditions the material will degrade to water and carbon dioxide, while under anaerobic processes it will produce water, methane and carbon dioxide.

Based on test results, as well as theoretical considerations, the potential for bioaccumulation may be high. Toxic effects are often observed in species such as blue mussel, daphnia, freshwater green algae, marine copepods and amphipods.

Section 13 - DISPOSAL CONSIDERATIONS

- Consult manufacturer for recycling options and recycle where possible .
- Consult State Land Waste Management Authority for disposal.
- Incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

BEWARE: Empty solvent, paint, lacquer and flammable liquid drums present a severe explosion hazard if cut by flame torch or welded. Even when thoroughly cleaned or reconditioned the drum seams may retain sufficient solvent to generate an explosive atmosphere in the drum.

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Section 14 - TRANSPORTATION INFORMATION



Labels Required: FLAMMABLE LIQUID
HAZCHEM: 3[Y]E

UNDG:

Dangerous Goods Class:	3	Subrisk:	None
UN Number:	1146	Packing Group:	II
Shipping Name: CYCLOPENTANE			

Air Transport IATA:

ICAO/IATA Class:	3	ICAO/IATA Subrisk:	None
UN/ID Number:	1146	Packing Group:	II
ERG Code:	3H		
Shipping name: CYCLOPENTANE			

Maritime Transport IMDG:

IMDG Class:	3	IMDG Subrisk:	None
UN Number:	1146	Packing Group:	II
EMS Number:	F- E, S- D		
Shipping name: CYCLOPENTANE			

Section 15 - REGULATORY INFORMATION

REGULATIONS

cyclopentane (CAS: 287-92-3) 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

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: 17-Jun-2018