

Material Safety Data Sheet

(Iso-pentane)

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1. PRODUCT AND COMPANY IDENTIFICATION

Material Identification

Corporate MSDS Number: I-pentane CAS Number: 78-78-4
Product Name Iso-Pentane
Chemical Family Aliphatic hydrocarbon
Chemical Formula C₅H₁₂
Chemical Name pentane
Product Use Foam blowing agent, Solvent

Company Identification

MANUFACTURER/DISTRIBUTOR: Cosutin Industrial CO., Limited
Add: Unit B, 10/F Lee May Building 788-790 Nathan Road, Mongkok, Kowloon, H.K.
Tel.: +852 21395855 Fax: +852 81673777
PHONE NUMBERS Product Information: +86 136 31481545
Transport Emergency: +86 136 31481545
Medical Emergency: +86 136 31481545

2. COMPOSITION/INFORMATION ON INGREDIENTS

| Ingredient Name | CAS No. | Typical Wt. % |
|-----------------|---------|---------------|
| Iso-pentane | 78-78-4 | 95+% |

3. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Flammable Liquids Category 1.

Specific Target Organ Toxicity - Single Exposure Category 3 (Narcotic Effects).

Aspiration hazard Category 1.

Hazardous to the Aquatic Environment - Long Term Hazard Category 2.

GHS Label elements, including precautionary statements.



Signal word: Danger.

Hazard statement(s): Extremely flammable liquid and vapor. May be fatal if swallowed and enters airways. May cause drowsiness or dizziness. Toxic to aquatic life with long lasting effects.

Precautionary statement(s):

Prevention: Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/Bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/ equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/ vapors/spray. Use only outdoors or in a well-ventilated area. Avoid release to the environment.

Response: In case of fire: Use foam, dry chemical powder, carbon dioxide to extinguish. IF SWALLOWED: Immediately call a POISON CENTER/doctor. Do NOT induce vomiting. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing and wash it before reuse. Rinse skin with water/shower. Collect spillage.

4. FIRST AID MEASURES

Description of necessary first aid measures If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Immediately remove all contaminated clothing, including footwear. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed: Rinse mouth with water. Do NOT induce vomiting. Consult a physician. Avoid giving milk or oils. Avoid giving alcohol.

Most important symptoms and effects, both acute and delayed: /

Indication of immediate medical attention and special treatment needed: /

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Foam. Dry chemical powder. Carbon dioxide. Water spray or fog - Large fires only.

Special hazards arising from the chemical: Liquid and vapour are highly flammable. Severe fire hazard when exposed to heat, flame and/or oxidisers. Vapour forms an explosive mixture with air. Severe explosion hazard, in the form of vapour, when exposed to flame or spark. Vapour may travel a considerable distance to source of ignition. On combustion, may emit toxic fumes of carbon monoxide (CO).

Special protective actions for fire-fighters: Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water course. Consider evacuation (or protect in place). Fight fire from a safe distance, with adequate cover. If safe, switch off electrical equipment until vapour fire hazard removed. Use water delivered as a fine spray to control the fire and cool adjacent area. Avoid spraying water onto liquid pools. 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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes.

Environmental precautions: Prevent, by any means available, spillage from entering drains or water courses.

Methods and materials for containment and cleaning up: Stop leak if safe to do so. Water spray or fog may be used to disperse /absorb vapour. Contain spill with sand, earth or vermiculite. Use only spark-free shovels and explosion proof equipment. Collect recoverable product into labelled containers for recycling. Absorb remaining product with sand, earth or vermiculite. Collect solid residues and seal in labelled drums for disposal. Wash area and prevent runoff into drains. If contamination of drains or waterways occurs, advise emergency services.

7. HANDLING AND STORAGE

Precautions for safe 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. DO NOT allow material to contact humans, exposed food or food utensils. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers.

Conditions for safe storage, including any incompatibilities: Store in original containers in approved flame-proof area. No smoking, naked lights, heat or ignition sources. 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 storage and handling recommendations contained within this SDS.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS (OEL):

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|--|------------|-----------------------|-----------------------|------------------------|---------------|---------------|
| Occupational Exposure Limits for Hazardous Agents in the Workplace | isopentane | Pentane (all isomers) | 500 mg/m ³ | 1000 mg/m ³ | Not Available | Not Available |

EMERGENCY LIMITS:

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|------------|--|---------|---------|----------|
| isopentane | Isopentane; (Ethyl dimethyl methane; 2-Methylbutane) | 600 ppm | 610 ppm | 4400 ppm |

Appropriate engineering controls: For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Personal protective equipment Eye/face protection: Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. **Skin protection:** Wear chemical protective gloves, e.g. PVC. Wear safety footwear or safety gumboots, e.g. Rubber. When prolonged or frequently repeated contact may occur, a glove with a

protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

Respiratory protection: Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant.

Thermal hazards:/

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|------------------------------|
| Appearance | Colorless transparent liquid |
| Odor | Odorless |
| Melting point/freezing point | -159.89°C |
| Initial boiling point and boiling range | 27.8-28.2°C |
| Flash point | -51.0°C |
| Evaporation rate | 13 BuAc=1 |
| Flammability (solid, gas) | HIGHLY FLAMMABLE |
| Upper/lower flammability or explosive limits | Upper 8.3%; Lower 1.32% |
| Vapour pressure | 79.3 @ 21.1°C |
| Vapour density | 2.48 (AIR=1) |
| Relative density | 0.62 (WATER=1) |
| Water solubility | Immiscible |
| Autoignition temperature | 420°C |
| Viscosity | 0.214 cP (at 20 °C) |

10. STABILITY AND REACTIVITY

Reactivity: / Chemical stability: Product is considered stable under normal handling conditions.

Possibility of hazardous reactions: Hazardous polymerisation will not occur.

Conditions to avoid: Heat, flames and sparks.

Incompatible materials: Strong bases, oxidising agents.

Hazardous decomposition products: carbon monoxide (CO), carbon dioxide (CO₂), other pyrolysis products typical of burning organic material.

11. TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure: Inhaled, Ingestion, skin, eyes.

Symptoms related to the physical, chemical and toxicological characteristics: /

Acute health effects Inhalation: Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.

Ingestion: Accidental ingestion of the material may be damaging to the health of the individual.

Skin: The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives. Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.

Eyes: Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

Chronic health effects: Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following. Limited evidence suggests that repeated or long-term occupational

exposure may produce cumulative health effects involving organs or biochemical systems.

Numerical measures of toxicity(such as acute toxicity estimates):

Inhalation (rat) LC50: 280 mg/L/4hr

Oral (rat) LD50: >2000 mg/kg

12. ECOLOGICAL INFORMATION

Toxicity: Toxic to aquatic life with long lasting effects.

Persistence and degradability: Water/Soil: HIGH. Air: HIGH.

Bioaccumulative potential: LOW.

Mobility in soil: LOW.

Other adverse effects: /

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

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

14. TRANSPORTATION INFORMATION

Domestic (Land, D.O.T.)

Proper Shipping Name: PENTANES

Hazard Class: 31002

UN/NA: UN1265

Packing Group: II

Information reported for product/size: 0.21or24L

International (Water, I.M.O.)

Proper Shipping Name: PENTANES

Hazard Class: 3

UN/NA: UN1265

Packing Group: II

Information reported for product/size: 0.21or24L

Special precautions: Keep away from heat and all ignition sources, Cylinders should be transported in a secure upright position in a well ventilated truck.

15. REGULATORY INFORMATION

CHCCL: Hazard class: 3.1 low flash point and high flammability

16. OTHER INFORMATION

Other Precautions:

Protect containers from physical damage. Do not deface cylinders or labels. Cylinders should be refilled by qualified producers of compressed gas. Shipment of a compressed gas cylinder which has not been filled by the owner or with his written consent is a violation of federal law

Abbreviations: CHCCL : Hazardous Chemical Class and Label.

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Effective Date

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End of MSDS