Material Safety Data Sheet

City University of Hong Kong

MSDS  O-DICHLOROBENZENE  0425

PRODUCT INFORMATION

Chemical name(s): O-DICHLOROBENZENE
Chinese Name: 1,2-二氯苯
Synonyms: 1,2-dichlorobenzene; ortho-Dichlorobenzene; DCB
CAS No: 95-50-1
Molecular Weight: 147.00
Chemical Formula: C₆H₄Cl₂

RISK SYMBOL

PHYSICAL DATA

Appearance: Colorless to yellowish liquid.
Boiling Point: 180°C (356°F)
Odor: Pleasant odor.
Melting Point: -17.6°C (0°F)

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Solubility: Practically insoluble in water.
Vapor Density (Air=1): 5.1
Specific Gravity: 1.30 @ 20°C/4°C
Vapor Pressure (mm Hg): 1.2 @ 20°C (68°F)
PpH: No information found.
Evaporation Rate (BuAc=1): < 1
% Volatiles by volume @ 21°C (70°F): No information found.

FIRE AND EXPLOSION DATA

Fire:
  Flash point: 66°C (151°F) CC
  Autoignition temperature: 648°C (1198°F)
  Flammable limits in air % by volume:
    LEL: 2.2; UEL: 9.2
  Combustible.

Explosion: Above flash point, vapor-air mixtures are explosive within flammable limits noted above.

Fire Extinguishing Media:
  Water spray, dry chemical, alcohol foam, or carbon dioxide. Water spray may be used to keep fire exposed containers cool.

Special Information:
  In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Combustion by-products include phosgene and hydrogen chloride gases.

REACTIVITY DATA

Stability:  Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
  May produce carbon monoxide, carbon dioxide, hydrogen chloride and phosgene when heated to decomposition.

Hazardous Polymerization: Will not occur.
Incompatibilities: Strong oxidizers, aluminum or aluminum alloys.
Conditions to Avoid: Heat, flames, ignition sources and incompatibles.

HEALTH HAZARD DATA

Emergency Overview
  Danger! Aspiration may cause lung damage. Vapors cause irritation to eyes and respiratory tract. Liquid causes skin irritation and severe eye irritation. Harmful if swallowed, inhaled or absorbed through skin. Affects liver, kidneys and blood. Combustible liquid and vapor. Possible cancer hazard. Contains p-dichlorobenzene which may cause cancer based on animal data. Risk of cancer depends upon duration and level of exposure.

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Potential Health Effects

Inhalation:
Causes irritation to the respiratory tract. Can cause headache, nausea, swelling around the eyes, runny nose, loss of appetite and weight loss. Higher concentrations may cause drowsiness, central nervous system depression, kidney and liver damage, unconsciousness, and death.

Ingestion:
Toxic! A liver and kidney poison. May cause systemic poisoning with/symptoms paralleling inhalation. May be an aspiration hazard if swallowed.

Skin Contact:
Skin contact causes irritations and possibly burns if contact is repeated or prolonged. May be absorbed through the skin.

Eye Contact:
Vapors cause irritation, redness, and pain. Contact with liquid may cause burning of the eyes and tissue damage.

Chronic Exposure:
Chronic exposure may damage blood, liver and kidneys. P-Dichlorobenzene is a possible carcinogen. Prolonged or repeated skin exposure may cause dermatitis and blisters. Prolonged or repeated exposure through any route may cause symptoms paralleling acute inhalation.

Aggravation of Pre-existing Conditions:
Persons with pre-existing skin problems, kidney or liver damage may be more susceptible to the affects of this material.

FIRST AID MEASURES

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:
Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:
Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

PREVENTATIVE MEASURES
Airborne Exposure Limits:
- OSHA Permissible Exposure Limit (PEL): 50 ppm Ceiling limit
  for p-Dichlorobenzene: 75 ppm (TWA)
- ACGIH Threshold Limit Value (TLV):
  25 ppm (TWA) 50 ppm (STEL), listed as A4, Not classifiable as a human carcinogen
  for p-Dichlorobenzene: 10 ppm (TWA), listed as A3, animal carcinogen.

Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators (NIOSH Approved): If the exposure limit is exceeded, a full facepiece respirator with organic vapor cartridge and dust/mist filter may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air purifying respirators do not protect workers in oxygen-deficient atmospheres. This compound possibly exists in both particulate and vapor phase. A dust/mist prefilter should be used for the particulate.

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Handling and Storage:
Keep in a tightly closed container. Store in a cool, dry, ventilated area away from sources of heat or ignition. Protect against physical damage. Store separately from reactive or combustible materials, and out of direct sunlight. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

ENVIRONMENTAL PROTECTION DATA

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e.g., Vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

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