

化 学 品 安 全 技 术 说 明 书

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MSDS标题

ZIRCONIUM BROMIDE MSDS报告

产品标题

溴化锆

CAS号

13777-25-8

化学品及企业标识

PRODUCT NAME

ZIRCONIUM BROMIDE

NFPA

Flammability	0
Toxicity	2
Body Contact	3
Reactivity	1
Chronic	3
SCALE: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4	

PRODUCT USE

Friedel- Crafts catalyst.

SYNONYMS

Br4-Zr, "zirconium (IV) bromide", "zirconium (IV) bromide"

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

Causes burns.

Risk of serious damage to eyes.

Harmful to aquatic organisms.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion. Accidental ingestion of the material may be damaging to the health of the individual. Because inorganic zirconium is poorly absorbed from the digestive tract, acute oral toxicity is low. Injection is much more dangerous, causing progressive depression until death. Ingestion of acidic corrosives may produce burns around and in the mouth, the throat and esophagus. Immediate pain and difficulties in swallowing and speaking may also be evident. Swelling of the epiglottis may make it difficult to breathe which may result in suffocation. More severe exposure may result in vomiting blood and thick mucus, shock, abnormally low blood pressure, fluctuating pulse, shallow respiration and clammy skin, inflammation of stomach wall, and rupture of esophageal tissue. Untreated shock may eventually result in kidney failure. Severe cases may result in perforation of the stomach and abdominal cavity with consequent infection, rigidity and fever. There may be severe narrowing of the esophageal or pyloric sphincters; this may occur immediately or after a delay of weeks to years. There may be coma and convulsions, followed by death due to infection of the abdominal cavity, kidneys or lungs. Bromide poisoning causes intense vomiting so the dose is often removed. Effects include drowsiness, irritability, inco-ordination, vertigo, confusion, mania, hallucinations and coma. Other effects include skin rash, nervous system symptoms, sensory disturbances and increased spinal fluid pressure. They have been used as sedatives and depress the central nervous system. Toxicity is increased if dietary chloride is reduced. Repeated ingestion can cause a syndrome with acne, confusion, irritability, tremor, memory loss, weight loss, headache, slurred speech, delusions, stupor, psychosis and coma.

EYE

The material can produce chemical burns to the eye following direct contact. Vapors or mists may be extremely irritating. If applied to the eyes, this material causes severe eye damage. Direct eye contact with acid corrosives may produce pain, tears, sensitivity to light and burns. Mild burns of the epithelia generally recover rapidly and completely. Severe burns produce long-lasting and possibly irreversible damage. The appearance of the burn may not be apparent for several weeks after the initial contact. The cornea may ultimately become deeply opaque resulting in blindness.

SKIN

The material can produce chemical burns following direct contact with the skin. Skin contact is not thought to have harmful health effects, however the material may still produce health damage following entry through wounds, lesions or abrasions. The external application of zirconium can cause nodules in the skin of the armpits. Open cuts, abraded or irritated skin should not be exposed to this material. Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue. Solution of material in moisture on the skin, or perspiration, may markedly increase skin corrosion and accelerate tissue destruction. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

If inhaled, this material can irritate the throat and lungs of some persons. The material is not thought to produce adverse health effects following inhalation (as classified using animal models). Nevertheless, adverse effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled. Zirconium workers exposed to fume for 1-5 years showed no abnormalities due to zirconium. Animal studies also reveal a low order of hazard from inhaled zirconium. Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage. There may be dizziness, headache, nausea and weakness. Swelling of the lungs can occur, either immediately or after a delay; symptoms of this include chest tightness, shortness of breath, frothy phlegm and cyanosis. Lack of oxygen can cause death hours after onset.

CHRONIC HEALTH EFFECTS

Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely)

of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Gastrointestinal disturbances may also occur. Chronic exposures may result in dermatitis and/or conjunctivitis. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. There is some evidence that human exposure to the material may result in developmental toxicity. This evidence is based on animal studies where effects have been observed in the absence of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not secondary non-specific consequences of the other toxic effects. Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray. Zirconium can accumulate in the spleen. Oral administration has not been shown to cause any ill effects. Chronic intoxication with ionic bromides, historically, has resulted from medical use of bromides but not from environmental or occupational exposure; depression, hallucinosis, and schizophreniform psychosis can be seen in the absence of other signs of intoxication. Bromides may also induce sedation, irritability, agitation, delirium, memory loss, confusion, disorientation, forgetfulness (aphasias), dysarthria, weakness, fatigue, vertigo, stupor, coma, decreased appetite, nausea and vomiting, diarrhoea, hallucinations, an acne like rash on the face, legs and trunk, known as bromoderma (seen in 25-30% of case involving bromide ion), and a profuse discharge from the nostrils (coryza). Ataxia and generalised hyperreflexia have also been observed. Correlation of neurologic symptoms with blood levels of bromide is inexact. The use of substances such as brompheniramine, as antihistamines, largely reflect current day usage of bromides; ionic bromides have been largely withdrawn from therapeutic use due to their toxicity. Several cases of foetal abnormalities have been described in mothers who took large doses of bromides during pregnancy. Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and or ulceration of mouth lining. Irritation of airways to lung, with cough, and inflammation of lung tissue often occurs. Chronic exposure may inflame the skin or conjunctiva.