西亚试剂® Xiya Reagent 说明书

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化 学 品 安 全 技 术 说 明 书

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MSDS标题

HAFNIUM CHLORIDE-TETRAHYDROFURAN COMPLEX (1 MSDS报告

产品标题

氯化铪(IV)四氢呋喃络合物(1:2)

CAS号

21959-05-7

化学品及企业标识

PRODUCT NAME

HAFNIUM CHLORIDE-TETRAHYDROFURAN COMPLEX (1:2)

NFPA

Flammability	1
Toxicity	2
Body Contact	2
Reactivity	1
Chronic	2

SCALE: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4

PRODUCT USE

Reagent.

SYNONYMS

C8-H16-Cl4-Hf-O2, tetrachlorobis(tetrahydrofuran)hafnium

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Although ingestion is not thought to produce harmful effects, 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 (death) 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

Although the material is not thought to be an irritant, direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn).

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified 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. Solution of material in moisture on the skin, or perspiration, may markedly increase skin corrosion and accelerate tissue destruction. Open cuts, abraded or irritated skin should not be exposed to this material.

INHALED

Inhalation may produce health damage*. The material is not thought to produce respiratory irritation (as classified using animal models). Nevertheless inhalation of the material, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress. 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. Injections of hafnium oxide or carbide into airways may causescarring of the lungs. Overexposure to tetrahydrofuran, by inhalation, may result in irritation of the mucous membranes and may produce coughing, chest pains, nausea, dizziness, headache and narcosis. Exposure to high concentrations can affect the central nervous system due to the strong narcotic effect of the material. Concentrations greater than 25000 ppm were reported to produce anaesthesia in animals. Anaesthetic properties are poor as onset is delayed and recovery is slow. Pronounced hypotension and marked respiratory hypernea accompany narcosis. Other symptoms include muscular hypotonia and disappearance of corneal reflexes, followed by coma and death.

CHRONIC HEALTH EFFECTS

Principal routes of exposure are by accidental skin and eye contact andinhalation of generated dusts. Prolonged ingestion of hafnium is moderately toxic. Theremay be liver changes. Repeated exposure to tetrahydrofuran (THF) and its congeners has been associated with cytolytic hepatitis and fatty degeneration of the liver. Inhalation of THF at concentrations greater than 3000 ppm, 8 hours/day for 20 days, produced irritation and evidence for hepatic and renal injury in animals. Male rats inhaling more than 5000 ppm THF for 12 weeks, 4 hours/day showed signs of systemic intoxication, skin and respiratory irritation, liver function disturbance and abnormalities in glucose function. Muscle acetylcholinesterase activity increased in a concentration-dependent manner in male rats that inhaled 200 ppm for 18 weeks, 6 hours/day. Hepatic protein and mixed function oxidase activity also increased. At 2000 ppm, liver function was inhibited. In a 13-week inhalation study, ataxia was reported in rats at 5000 ppm and narcosis in mice at 1800 ppm. Hepatocytomegaly developed in mice of both sexes at 5000 ppm while uterine atrophy and degeneration of the adrenal cortex was found in female mice. A case history suggests that interaction of THF and endoflurane (an anaesthetic) may provoke epileptic seizures following surgery. The parent compound of tetrahydrofuran, furan, is carcinogenic in rats based on an increased incidence of cholangiocarcinoma and hepatocellular neoplasms of the liver and increased incidences of mononuclear cell leukaemia. In male and female mice, furan induced hepatocellular neoplasms and benign pheochromocytomas of the of the adrenal gland. 1,4-Dioxane, another cyclic ether solvent, is carcinogenic in rats and guinea pigs, following oral administration, inducing malignant tumours of the liver in rats and malignant tumours of the liver of the gall-bladder in guinea pigs. 1,4-Dioxane is a promoter in two stage skin carcinogenic studies in mice. In a two-year inhalation study * there was evidence of carcinogenic activity of THF, in male rats, based on increased incidences of renal tube adenoma or carcinoma (combined) and in female mice based on an increased incidence of hepatocellular neoplasms. There was no evidence of carcinogenic activity in female rats or male mice exposed to 200, 600 and 1800 ppm THF by inhalation. * National Toxicology Program Technical Report Series No. 475.