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

ZEOLITES, 4A MSDS报告

产品标题

β分子筛

CAS号

70955-01-0

化学品及企业标识

PRODUCT NAME

ZEOLITES, 4A

NFPA

Flammability	0
Toxicity	0
Body Contact	0
Reactivity	0
Chronic	2

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

PRODUCT USE

Zeolites are the aluminosilicate members of the family of microporous solids known as " molecular sieves" . The term refers to a particular property of these materials, i.e. the ability to selectively sort molecules based primarily on a size exclusion process. This is due to a very regular pore structure of molecular dimensions. The maximum size of the

molecular or ionic species that can enter the pores of a zeolite is controlled by the diameters of the tunnels. These are conventionally defined by the ring size of the aperture, where, for example, the term " 8ring" refers to a closed loop that is built from 8 tetrahedrally coordinated silicon (or aluminium) atoms and 8 oxygen atoms. These rings are not always perfectly flat and symmetrical due to a variety of effects, including strain induced by the bonding between units that are needed to produce the overall structure, or coordination of some of the oxygen atoms of the rings to cations within the structure. Therefore, the pore openings for all rings of one size are not identical. More than 1500 zeolites types of been synthesized and 48 naturally occurring zeolites are known. They are basically hydrated aluminosilicates with an " open" structure that can accommodate a wide variety of cations such as Na^{+}, K^{+}, Ca^{2+}, Mg^{2+} and others. These positive ions are rather loosely held and can readily be exchanged for others in a contact solution. Laboratory reagent, industrial material for selective adsorption.

SYNONYMS

"Ersorb 4", "Nelsit 4A", "Silton M", T142, Toyobuilder, "GSL 1000", "Wolfen Zeosorb 4A", "Zeolan A4", "Zeolun A4", "Zeosorb 4A", "molecular sieve"

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Not normally a hazard due to the physical form of product. The material is a physical irritant to the gastrointestinal tract. The material has NOT been classified as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. 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, unintentional ingestion is not thought to be cause for concern.

EYE

Dehydrated zeolites may cause thermal burns with corneal damage. Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival

redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

SKIN

Dehydrated zeolites generate heat in contact with moisture and may produce thermal burns. 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. 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.

INHALED

Intratracheal instillation of one species of zeolite, mordenite, in rats produced a mild fibrosis and hyperplasia. No significant pulmonary inflammation or interstitial fibrosis was seen in inhalation studies. The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

CHRONIC HEALTH EFFECTS

All workers involved in the production and use of zeolite-containing products are potentially exposed to erionite, a fibrous form of zeolite, which is mined with deposits of other zeolites. When administered by inhalation erionite induced pleural mesotheliomas in rats of both sexes. When administered by intraperitoneal injection, erionite induced peritoneal mesotheliomas in male mice. When introduced by intrapleural injection erionite induced pleural mesotheliomas in male and female rats. Descriptive studies have demonstrated a very high mortality from malignant mesotheliomas, mainly of the pleura, in three Turkish villages where there has been contamination from erionite and where the population had been exposed from birth. Erionite fibres were identified in lung tissue samples in cases of pleural mesotheliomas; ferruginous bodies were found in a much higher proportion of inhabitants in contaminated villages than those of control villages. Intratracheal instillation of another species of zeolite, mordenite, in rats, produced a mild fibrosis and hyperplasia. No significant pulmonary inflammation or interstitial fibrosis was seen in inhalation studies. Mordenite exhibits low cytotoxicity, in vitro. A sample of natural zeolite particles induced aberrant metaphase in human whole blood cultures in vitro. This zeolite sample also induced aberrant metaphases in cells collected by peritoneal lavage of mice after intraperitoneal injection. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.