

Obidoxime Chloride

sc-212467



The Power is Question

Material Safety Data Sheet

Hazard Alert Code Key:

EXTREME

HIGH

MODERATE

LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

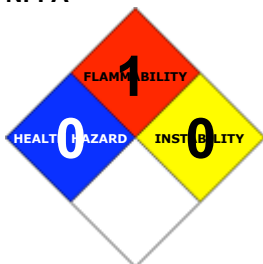
PRODUCT NAME

Obidoxime Chloride

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

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EMERGENCY

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(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS

C14-H16-N4-O3.2Cl, "pyridinium, 1, 1' -(oxymethylene)bis(4-formyl-, dichloride, dioxime", BH-6/, BH6, "1, 3-bis(4-aldoximinopyridinium) dimethyl ether bichloride", "N, N-dimethyleneoxidebis(pyridinium-4-aldoxime) dichloride", "N, N-dimethylenoxid-bis-(pyridinium-4-aldoxim)dichlorid", "ether bis-14-hydroxyiminomethylpyridine-(1)-metylodichloride", LUEH-6, LUH6, "Luh(sub 6)LU H6 dichloride", "obidoxime dichloride", "obidoxime hydrochloride", "1, 1' -[oxybis(methylene)]bis[4-(hydroxyimino)methyl]pyridinium dichloride", "1, 1' -(oxydimethylene)bis(formylpyridinium)dichloride dioxime", "1, 1' -(oxydimethylene)bis(4-formylpyridinium) dioxime dichloride", "bis(4-hydroximinomethylpyridinium-1-methyl)ether dichloride", "1, 3-bis(4-hydroxyiminomethyl-1-pyridinio)-2-oxapropane dichloride", "bis(isonicotinaldoxime-1-methyl) ether dichloride", BU-6, "pyridinium, 1, 1' -[oxybis(methylene)]bis[4-((hydroxyimino)methyl)-", ", dichloride, Toxobidin, Toxogonin, Toxogonine, "Toxogonin dichloride", Toksobidin, "cholinesterase reactivator", "quaternary oxime"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

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

CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Toxic to aquatic organisms.

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.
- Concentrated solutions of many cationics may cause corrosive damage to mucous membranes and the esophagus. Nausea and vomiting (sometimes bloody) may follow ingestion.

EYE

- There is some evidence to suggest that this material can cause eye irritation and damage in some persons.
- Pyridine and its derivatives generally produce local irritation on contact with the cornea.

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.
- Pyridine and derivatives cause local irritation on skin; absorption through the skin can cause similar effects as inhalation.

INHALED

- There is some evidence to suggest that this material, if inhaled, can irritate the throat and lungs of some persons.
- Although inhalation is not thought to produce harmful effects, the material may still produce health damage, especially where pre-existing organ (e.g. liver, kidney) damage is evident.
- 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.
- Pyridine and its derivatives generally produce local irritation on contact with the mucous membranes. Overexposure to pyridine and some of its derivatives may produce headache, nausea, loss of consciousness, nervousness, loss of appetite, sleeplessness and narcosis;

CHRONIC HEALTH EFFECTS

- Principal routes of exposure are usually by skin contact/absorption and inhalation of generated dust. No human exposure data available. For this reason health effects described are based on experience with chemically related materials. Data from experimental studies indicate that pyridines represent a potential cause of cancer in man. They have also been shown to cross the placental barrier in rats and cause premature delivery, miscarriages and stillbirths.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
obidoxime chloride	114-90-9	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

· Immediately give a glass of water. · First aid is not generally required. If in doubt, contact a Poisons Information Center or a doctor.

EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

INHALED

· If dust is inhaled, remove from contaminated area. · Encourage patient to blow nose to ensure clear passage of breathing. · If irritation or discomfort persists seek medical attention.

NOTES TO PHYSICIAN

- Treat symptomatically.
- Should not be used in patients with impaired renal function.
When given with atropine, signs of atropinisation may occur earlier than otherwise expected.

Section 5 - FIRE FIGHTING MEASURES

Upper Explosive Limit (%):	Not available.
Specific Gravity (water=1):	Not available
Lower Explosive Limit (%):	Not available
Relative Vapor Density (air=1):	>1

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.

FIRE FIGHTING

- Use water delivered as a fine spray to control fire and cool adjacent area.
- DO NOT approach containers suspected to be hot.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Solid which exhibits difficult combustion or is difficult to ignite.
 - Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
- Combustion products include: nitrogen oxides (NOx) and hydrogen chloride.

FIRE INCOMPATIBILITY

- Avoid contamination with strong oxidizing agents as ignition may result.

PERSONAL PROTECTION

Glasses:

Safety Glasses.

Gloves:

Respirator:

Particulate

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Clean up all spills immediately.
- Avoid contact with skin and eyes.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- When handling DO NOT eat, drink or smoke.
- Always wash hands with soap and water after handling.
- Avoid physical damage to containers.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.

RECOMMENDED STORAGE METHODS

- Polyethylene or polypropylene container.
- Packing as recommended by manufacturer.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- obidoxime chloride: CAS:114-90-9

PERSONAL PROTECTION



RESPIRATOR

- particulate.
- Consult your EHS staff for recommendations

EYE

- Safety glasses.
- Safety glasses with side shields.

HANDS/FEET

- Wear general protective gloves, e.g.. light weight rubber gloves.

OTHER

- Overalls.
- Impervious protective clothing.
- Eyewash unit.

ENGINEERING CONTROLS

- General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear an approved respirator.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.
Mixes with water.

State	Solid	Molecular Weight	359.24
Melting Range (°F)	455- 457:218-220	Boiling Range (°F)	Not available
Solubility in water (g/L)	Miscible	Flash Point (°F)	Not available
pH (1% solution)	Not available	Decomposition Temp (°F)	437
pH (as supplied)	Not applicable	Autoignition Temp (°F)	Not available
Vapour Pressure (mmHG)	Negligible	Upper Explosive Limit (%)	Not available.
Specific Gravity (water=1)	Not available	Lower Explosive Limit (%)	Not available
Relative Vapor Density (air=1)	>1	Volatile Component (%vol)	Negligible
Evaporation Rate	Not applicable		

APPEARANCE

Crystalline powder; mixes with water Occurs in two interchangeable isomeric forms (sym and anti).

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
 - Product is considered stable.
 - Explosion or violent decomposition during distillation of aldoximes has been attributed to the presence of peroxides arising from autooxidation.
 - Peroxides may form on the -C=NOH system (both aldehydes and hydroxylamine peroxides) or perhaps arise from unreacted aldehyde.
 - Explosion hazards are inherent to ketoximes and many of their derivatives. Such hazard has been attributed to the inadvertent occurrence of acidic conditions leading to the highly exothermic Beckmann rearrangement accompanied by potentially catastrophic gas evolution.
 - The presence of acidic salts (iron(III) chloride), or the ketoxime hydrochloride markedly lowers decomposition temperatures.
 - A range of exothermic decomposition energies for oximes is given as 170-230 kJ/mol. The relationship between energy of decomposition and processing hazards has been the subject of discussion; it is suggested that values of energy released per unit of mass, rather than on a molar basis (J/g) be used in the assessment. For example, in "open vessel processes" (with man-hole size openings, in an industrial setting), substances with exothermic decomposition energies below 500 J/g are unlikely to present a danger, whilst those in "closed vessel processes" (opening is a safety valve or bursting disk) present some danger where the decomposition energy exceeds 150 J/g.
- BREITHERICK: Handbook of Reactive Chemical Hazards, 4th Edition.

STORAGE INCOMPATIBILITY

- Avoid oxidizing agents, acids, acid chlorides, acid anhydrides.
- Avoid strong bases.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

obidoxime chloride

TOXICITY AND IRRITATION

OBIDOXIME CHLORIDE:

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Oral (rat) LD50: >4000 mg/kg	Nil Reported
Intraperitoneal (rat) LD50: 110 mg/kg	
Intravenous (rat) LD50: 133 mg/kg	
Intramuscular (rat) LD50: 205 mg/kg	
Oral (mouse) LD50: >2240 mg/kg	
Intraperitoneal (mouse) LD50: 111 mg/kg	
Subcutaneous (mouse) LD50: 183 mg/kg	
Intravenous (mouse) LD50: 70 mg/kg	
Intramuscular (mouse) LD50: 172 mg/kg	
Intravenous (dog) LD50: >70 mg/kg	
Intravenous (cat) LD50: 100 mg/kg	
Intramuscular (cat) LD50: 135 mg/kg	
Intravenous (rabbit) LD50: 100 mg/kg	
Intramuscular (g.pig) LD50: 79 mg/kg	

Convulsions, ataxia, cyanosis, changes in structure/ function salivary gland, diarrhoea, convulsions recorded.

Section 12 - ECOLOGICAL INFORMATION

Toxic to aquatic organisms.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
obidoxime chloride	No Data Available	No Data Available		

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

- Consult manufacturer for recycling options and recycle where possible .
- Consult Waste Management Authority for disposal.

Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

Section 15 - REGULATORY INFORMATION

obidoxime chloride (CAS: 114-90-9) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)"

Section 16 - OTHER INFORMATION

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■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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