

Sodium tungstate dihydrate

sc-212949



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

Sodium tungstate dihydrate

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

EMERGENCY:

ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS

Na₂WO₄·2H₂O, "sodium tungstate dihydrate", "tungstic acid, disodium salt, dihydrate", "sodium wolframate dihydrate", "sodium tungstate (VI) dihydrate", tungsten

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	0	
Toxicity:	2	
Body Contact:	0	
Reactivity:	0	
Chronic:	0	

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



CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Harmful if swallowed.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

■ If given orally, tungsten can accumulate in the spleen, kidney and liver. Symptoms of poisoning include diarrhea, stoppage of breathing and circulatory collapse leading to death.

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EYE

■ 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.

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SKIN

■ Skin contact is not thought to produce harmful health effects (as classified using animal models). Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions.

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■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ 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

■ The material is not thought to produce respiratory irritation (as classified using animal models). Nevertheless inhalation of dusts, or fume, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

■ Inhalation of dusts, generated by the material during the course of normal handling, may be damaging to the health of the individual.

■ Tungsten is relatively inert and produces few respiratory effects.

CHRONIC HEALTH EFFECTS

■ Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified using animal models); nevertheless exposure by all routes should be minimized as a matter of course.

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.

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Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
sodium tungstate	13472-45-2	100

Section 4 - FIRST AID MEASURES

SWALLOWED

· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. · Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

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 or hair contact occurs: · Flush skin and hair with running water (and soap if available). · Seek medical attention in event of irritation.

INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN

■ Both dimercaptol and calcium disodium edetate are said to be effective in acute experimental tungsten poisonings.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Not applicable
Upper Explosive Limit (%):	Not applicable
Specific Gravity (water=1):	3.24
Lower Explosive Limit (%):	Not applicable

EXTINGUISHING MEDIA

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Non combustible.
 - Not considered to be a significant fire risk, however containers may burn.
- Decomposition may produce toxic fumes of: metal oxides, tungsten.
May emit poisonous fumes.

FIRE INCOMPATIBILITY

- None known.

PERSONAL PROTECTION

- Glasses:
- Chemical goggles.
- Gloves:
- Respirator:
- Particulate

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable, labelled container for waste disposal.

MAJOR SPILLS

- Moderate hazard.
- CAUTION: Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

RECOMMENDED STORAGE METHODS

- Glass container.
- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

STORAGE REQUIREMENTS

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

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Notes
Canada - Ontario Occupational Exposure Limits	sodium tungstate (Tungsten, water-soluble compounds of, including tungstic acids, phosphotungstic acids and		1		3	

	their salts (as tungsten))			
US NIOSH Recommended Exposure Limits (RELs)	sodium tungstate (Tungsten (soluble compounds, as W))	1	3	
Canada - Nova Scotia Occupational Exposure Limits	sodium tungstate (Tungsten - Soluble compounds (as W))	1	3	TLV Basis: central nervous system impairment; pulmonary fibrosis
US - Minnesota Permissible Exposure Limits (PELs)	sodium tungstate (Tungsten (as W) - Soluble compounds)	1	3	
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	sodium tungstate (Tungsten (as W) - Soluble compounds)	1	3	
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	sodium tungstate (Tungsten (as W) Soluble compounds)	1	3	
Canada - Northwest Territories Occupational Exposure Limits (English)	sodium tungstate (Tungsten & Compounds, (as W) Soluble)	1	3	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	sodium tungstate (Tungsten, (as W): soluble compounds)	1	3	
US - Washington Permissible exposure limits of air contaminants	sodium tungstate (Tungsten (as W) - Soluble compounds)	1	3	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	sodium tungstate (Tungsten and compounds - as Soluble)	1	-	3
US - Hawaii Air Contaminant Limits	sodium tungstate (Tungsten (as W) - Soluble compounds)	1	3	
US - Oregon Permissible Exposure Limits (Z-1)	sodium tungstate (Tungsten & compounds, as W Soluble)	1		*
US - Michigan Exposure Limits for Air Contaminants	sodium tungstate (Tungsten Soluble compounds (as W))	1	3	
US - Alaska Limits for Air Contaminants	sodium tungstate (Tungsten (as W) - Soluble compounds)	1	3	

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PERSONAL PROTECTION



RESPIRATOR

Particulate

Consult your EHS staff for recommendations

EYE

- Safety glasses with side shields
- Chemical goggles.

HANDS/FEET

■ Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.

· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.

· Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluorocautchouc
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

ENGINEERING CONTROLS

■ Local exhaust ventilation usually required. If risk of overexposure exists, wear an approved respirator.

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.

Mixes with water.

State	Divided solid	Molecular Weight	329.87
Melting Range (°F)	1277.6 loses water	Viscosity	Not Applicable
Boiling Range (°F)	Not available.	Solubility in water (g/L)	Miscible
Flash Point (°F)	Not applicable	pH (1% solution)	< 7
Decomposition Temp (°F)	Not Applicable	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not applicable	Vapour Pressure (mmHG)	Not applicable
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	3.24
Lower Explosive Limit (%)	Not applicable	Relative Vapor Density (air=1)	Not applicable
Volatile Component (%vol)	Not applicable	Evaporation Rate	Not applicable

APPEARANCE

Odourless, colourless crystals or white crystalline powder. Effloresces in dry air. Soluble in water (41g/100ml water @ 0 C); insoluble in alcohol and acids.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

STORAGE INCOMPATIBILITY

· WARNING: Avoid or control reaction with peroxides. All transition metal peroxides should be considered as potentially explosive. For example transition metal complexes of alkyl hydroperoxides may decompose explosively.

· The pi-complexes formed between chromium(0), vanadium(0) and other transition metals (haloarene-metal complexes) and mono- or poly-fluorobenzene show extreme sensitivity to heat and are explosive.

· Avoid reaction with borohydrides or cyanoborohydrides.

· Metals and their oxides or salts may react violently with chlorine trifluoride and bromine trifluoride.

· These trifluorides are hypergolic oxidisers. They ignites on contact (without external source of heat or ignition) with recognised fuels - contact with these materials, following an ambient or slightly elevated temperature, is often violent and may produce ignition.

· The state of subdivision may affect the results.

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

Section 11 - TOXICOLOGICAL INFORMATION

SODIUM TUNGSTATE

TOXICITY AND IRRITATION

SODIUM TUNGSTATE:

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

TOXICITY	IRRITATION
Oral (rat) LD50: 1190 mg/kg	Nil Reported
Intraperitoneal (rat) LD50: 204 mg/kg	
Intraperitoneal (mouse) LD50: 145 mg/kg	
Intravenous (Cat) LD50: 139 mg/kg	
Oral (Rabbit) LD50: 875 mg/kg	
Subcutaneous (Rabbit) LD: 78 mg/kg	
Oral (Guinea) pig: LD50 1152 mg/kg	
Subcutaneous (Rat) LD50: 240 mg/kg	
Subcutaneous (Dog) LD: 140 mg/kg	
Subcutaneous (Guinea) pig: LD 810 mg/kg	

■ Tungsten can cause a reduction in body temperature, and enlargement of the adrenal glands and kidneys if injected. Death may occur if it is given directly into the abdominal cavity.

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Oral (rat): 223-225 mg *

* 66-day-old animals after 24 hours

starvation - Gosselin

Section 12 - ECOLOGICAL INFORMATION

No data

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

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

! Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult Waste Management Authority for disposal.

Section 14 - TRANSPORTATION INFORMATION

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

Section 15 - REGULATORY INFORMATION

sodium tungstate (CAS: 13472-45-2,10213-10-2,53125-86-3) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)", "Canada Ingredient Disclosure List (SOR/88-64)", "Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)", "US DOE Temporary Emergency Exposure Limits (TEELs)", "US Toxic Substances Control Act (TSCA) - Inventory", "US TSCA Section 8 (a) - Preliminary Assessment Information Rules (PAIR) - Reporting List"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

- Inhalation may produce health damage*.

* (limited evidence).

Ingredients with multiple CAS Nos

Ingredient Name CAS sodium tungstate 13472-45-2, 10213-10-2, 53125-86-3

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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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