

SAFETY DATA SHEET (SDS)

TANTALUM (V) OXIDE (TANTALUM PENTOXIDE)

According to WHMIS 2015

1. PRODUCT AND COMPANY IDENTIFICATION	
Product name (IUPAC):	Tantalum (V) oxide
Chemical formula:	Ta ₂ O ₅
CAS REGISTRY NUMBER	[1314-61-0]
Recommended use and commercial applications:	Scientific research and development, precursor used in the manufacture of electronics devices, and ceramics.
Manufacturer/Supplier	ELECTROCHEM TECHNOLOGIES & MATERIALS INC.
Address	<p><u>HEAD OFFICE</u></p> <p>Street: 2037 AIRD AVENUE, SUITE 201 City: MONTREAL Province/State: QUEBEC Postal/Zip Code: H1V 2V9 Country: CANADA Telephone: +1 (514) 251-9909 (9:00am – 5:00pm) (Monday-Friday) Email: contact@electrochem-technologies.com</p> <p><u>MANUFACTURING SITE</u></p> <p>Street: 75 BOULEVARD DE MORTAGNE C.P. 112 City: BOUCHERVILLE Province/State: QUEBEC Postal/Zip Code: J4B 6Y4 Country: CANADA</p>
Emergency numbers TRANSPORT ONLY (24 hours/7 days)	CANADA: CANUTEC +1-613-996-6666
2. HAZARDS IDENTIFICATION	
Classification of the substance	The substance is not classified according to the Globally Harmonised System (GHS).
Pictogram(s)	Not applicable
Signal Word (s):	Not applicable
Hazard Statements:	Not applicable
Precautionary Statements:	<p>P201 Obtain special instructions before use.</p> <p>P202 Do not handle until all safety precautions have been read and understood.</p> <p>P234 Keep only in original container.</p> <p>P260 Do not breathe dust, fumes, gas, mist, vapours, spray.</p> <p>P264 Wash thoroughly after handling.</p> <p>P270 Do not eat, drink or smoke when using this product.</p>

P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312+P330+P331 if swallowed: call a poison center or doctor/physician if you feel unwell. Rinse mouth. Do not induce vomiting.
P302+P352+P353 if on skin: Wash with plenty of soap and water.
P304+P340 if inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 if in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 If exposed or concerned : get medical advice.
P361 Take off immediately all contaminated clothing.
P363 Wash contaminated clothing before reuse.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION

Chemical family:	Tantalum chemicals				
Synonyms, generic names, acronyms:	Tantalum pentoxide				
	NAME	CAS No	Mass percentage	EINECS number	
	Tantalum (V) oxide	[1314-61-0]	95-99 wt.%	215-238-2	

4. FIRST AID PROCEDURES

General Treatment:	None
Special Treatment:	None
Important Symptoms:	None
After inhalation:	Remove victim to fresh air. If required provide artificial respiration. Supply oxygen if breathing is difficult. Seek immediate medical advice. Keep patient warm.
Ingestion:	Clean mouth with water. Seek immediate medical attention.
Skin contact:	Wash affected area with mild soap and water rinse thoroughly. Remove any contaminated clothing. Seek immediate medical advice if required.
Eye contact:	Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Then consult a physician if required.

5. FIREFIGHTING MEASURES

Flammability:	Product is not flammable
Extinguishing Media:	No special restrictions – use suitable extinguishing agent for surrounding material and type of fire
Special Fire Fighting Procedure:	Use full-face, self-contained breathing apparatus with full protective

	impervious clothing to prevent contact with skin and eyes.				
6. ACCIDENTAL RELEASE MEASURES					
If Material Is Released/Spilled:	Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide adequate ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal. Take care not to raise dust. Avoid spillage into the environment.				
Methods and material for containment and cleaning up:	Recover the product by mechanical mean.				
Environmental Precautions:	Isolate runoff to prevent environmental pollution and do not allow product to reach sewage systems or any water course.				
7. HANDLING AND STORAGE					
Handling Conditions:	Ensure good ventilation and maintain good housekeeping procedures to prevent accumulation of dust and the generation of airborne dust particles. Wear protective clothing when handling. Avoid inhalation and skin and eye contact. Wash equipment thoroughly after handling.				
Storage Conditions:	Store in a cool, dry place inside a tightly sealed container, away from incompatible materials and direct sunlight. Store apart from materials and conditions listed in section 10 if any.				
Sensitivities:	Not applicable				
Work/Hygienic Maintenance:	Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.				
Ventilation:	Provide sufficient ventilation to maintain concentration at or below threshold limit.				
8. EXPOSURE CONTROLS AND PERSONAL PROTECTION					
Permissible Exposure Limits:	PRODUCT	NIOSH - OSHA		ACGIH TLV [USA]	
		NIOSH REL	OSHA PEL	TWA	STEL
	TANTALUM (V) OXIDE [1314-61-0]	5 mg/m ³	5 mg/m ³	Insufficient data	
Threshold Limit Value:	TLV withdrawn due to insufficient data				
Special Equipment:	None				
Respiratory Protection:	Dust Respirator N95 (USA, Canada) or PE (EN 143) when high concentrations are present				
Protective Gloves:	Nitrile Rubber (NBR) gloves with minimum thickness 4 mils (0.11 mm)				
Eye Protection:	Safety glasses or goggles				
Body Protection:	Protective work clothing. Wear close-toed shoes and long sleeves/pants. Wash hands before breaks and at the end of the work shift.				
9. PHYSICAL AND CHEMICAL PROPERTIES					

Form:	Solid
Color:	White
Odor:	Odorless
Melting/Freezing point:	1800°C (3272°F)
Boiling point:	Not applicable
pH (20°C):	Not applicable
Flammability:	Not applicable
Lower and upper explosion limits:	Not applicable
Flash point:	Not applicable
Auto ignition temperature:	Not applicable
Decomposition temperature:	Not determined
Solubility in/Miscibility with water:	Insoluble
Partition coefficient n-octanol/water:	Not applicable
Vapor pressure (20°C):	Not applicable
Mass density (20°C):	8,200 kg/m ³ (512 lb./ft ³)
Kinematic viscosity:	Not applicable
Relative molar mass (¹² C = 12):	441.893
Oxidizing properties:	Not applicable
Particle characteristics:	Powder

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions
Reacts With:	This substance is chemically inert
Incompatibility:	No further information
Conditions to avoids:	No further information
Hazardous Decomposition Products:	No further information

11. TOXICOLOGICAL INFORMATION

Acute toxicity: The registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance

SUBSTANCE	ORAL	SKIN	INHALATION
TANTALUM (V) OXIDE [1314-61-0]	LD50 8000 mg/kg (rat) [OECD 401]	No data available	No data available

RTECS Reference:	Not available
Target Organs:	Not Available
Potential Health Effects:	
Eyes:	May cause irritation
Skin:	May cause irritation
Ingestion:	No effects
Inhalation:	May cause irritation

Sensitization:	No sensitizing effects known
Chronic:	Information not available.
Signs and Symptoms:	No effects known.
Aggravated Medical Conditions:	No effects known.
Median Lethal Dose:	No effects known.
Carcinogenicity:	No classification data on carcinogenic properties of this material is available from the ECHA, EPA, IARC, OSHA or ACGIH

12. ECOLOGICAL INFORMATION

Aquatic Toxicity:	No further relevant information available.
Persistent Bioaccumulation Toxicity:	No further relevant information available.
Very Persistent, Very Bioaccumulative:	No further relevant information available.
Toxicity:	No further relevant information available.
Persistence and degradability:	No further relevant information available.
Bioaccumulative potential:	No further relevant information available.
Mobility in soil:	No further relevant information available.
PBT and vPvB assessment:	Not Applicable.
Other adverse effects:	No further relevant information available.

13. DISPOSAL CONSIDERATIONS

Product, as supplied, should be disposed of in accordance with the regulations issued by the appropriate federal, state and local authorities. Same consideration should be given to containers and packaging. Contact a licensed professional waste disposal service. Dispose of in accordance with federal, state, provincial, local, national, and international enforced environmental regulations.

14. TRANSPORTATION DATA

Hazardous:	Not hazardous for transportation.
Hazard Class:	Not Applicable
Packing Group:	Not Applicable
UN Number:	Not Applicable
Proper Shipping Name:	Not Applicable

DOT

UN/ID No	Not Regulated
Proper Shipping Name:	Not Regulated
Hazard Class:	Not Regulated
Packing Group:	Not Regulated

IATA

UN/ID No	Not Regulated
Proper Shipping Name:	Not Regulated
Hazard Class:	Not Regulated
Packing Group:	Not Regulated

TDG

UN/ID No	Not Regulated
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Proper Shipping Name: Not Regulated
 Hazard Class: Not Regulated
 Packing Group: Not Regulated

IMDG

UN/ID No Not Regulated
 Proper Shipping Name: Not Regulated
 Hazard Class: Not Regulated
 Packing Group: Not Regulated

ICAO(Air)

UN/ID No Not Regulated
 Proper Shipping Name: Not Regulated
 Hazard Class: Not Regulated
 Packing Group: Not Regulated

15. REGULATORY INFORMATION

United States (USA):

Toxic Substance Control Act (TSCA): Listed
 Superfund Amendments and Reauthorization Act (SARA 302 Extremely Hazardous): Not listed
 Superfund Amendments and Reauthorization Act (SARA Sec 304 Reportable Quantities) Not listed
 Superfund Amendments and Reauthorization Act (SARA 311/312) Not listed
 Superfund Amendments and Reauthorization Act (SARA 313 Toxic Chemicals): Not listed

European Union (EU):

European Inventory of Existing Chemical Substances (EINECS): 215-238-2
 Risk Statements: Not Available
 Safety Statements: Not Available
 Substance of Very High Concern (SVHC) [REACH Regulations (EC) No. 1907/2006]: Not listed

Canada:

Canadian Domestic Substances List (DSL): Listed
 Canadian Non-Domestic Substances List (NDSL): Not listed

16. Other Information

Disclaimer

The information set forth is based on information that Electrochem Technologies & Materials Inc. believes to be accurate. No warranty, expressed or implied, is intended. The information is provided solely for your information and consideration and Electrochem Technologies & Materials Inc. assumes no legal responsibility for use or reliance thereon. This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.

Abbreviations et acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par route

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PST: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

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