



**AMERICAN
ELEMENTS**

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MATERIAL SAFETY DATA SHEET

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SECTION 1-----CHEMICAL IDENTIFICATION-----

Product Number: PB-ZRTAT-02M-ST.3125

Product Name: Lead Zirconium Titanate Sputtering Target

SECTION 2 ----- HAZARDS IDENTIFICATION-----

Information pertaining to particular dangers for man and environment

R 61 May cause harm to the unborn child

R 62 Possible risk of impaired fertility

R 20/22 Also harmful by inhalation and if swallowed.

R 33 Danger of cumulative effects.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH

FIRE

REACTIVITY

1

0

0

Health (acute effects) = 1

Flammability = 0

Reactivity = 0

GHS label elements

Danger

3.1/3 - Toxic if swallowed.

3.1/4 - Harmful if inhaled.

Danger

3.7/1A - May damage fertility or the unborn child.

Warning

4.1/1 - Very toxic to aquatic life with long lasting effects.

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Avoid breathing dust/fume/gas/mist/vapours/spray.

Wash thoroughly after handling.

SECTION 3 ----- COMPOSITION/INGREDIENT INFORMATION-----

CAS #: 12626-81-2

Chemical characterization:

Description: (CAS#)

Lead zirconium titanium oxide (CAS# 12626-81-2), 100%

Identification number(s):

EINECS Number: 235-727-4

Index number: 082-001-00-6

SECTION 4 ----- FIRST-AID -----

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Avoid release to the environment.

Use personal protective equipment as required.

Response:

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.

IF exposed or concerned: Get medical advice/attention.

Call a POISON CENTER or doctor/physician if you feel unwell.

Specific treatment (see label).

Rinse mouth.

Collect spillage.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 5 ----- FIRE FIGHTING MEASURES -----

Suitable extinguishing agents

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Toxic metal oxide fume

Metal oxide fume

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

SECTION 6-----ACCIDENTAL RELEASE -----

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper overnmental permits.

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13. Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7 -----HANDLING AND STORAGE -----

Handling

Information for safe handling:

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires: The product is not flammable

Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: No information known.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

SECTION 8 ----- EXPOSURE CONTROLS/PERSONAL PROTECTION -----

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Lead, elemental, and inorganic compounds (as Pb)

mg(Pb)/m³

ACGIH TLV 0.05; Confirmed animal carcinogen

Austria MAK 0.1

Belgium TWA 0.15

Denmark TWA 0.1

Germany MAK 0.1

Japan OEL 0.1

Korea TLV 0.05; Confirmed animal carcinogen

Netherlands TWA 0.15
Norway TWA 0.05
Poland TWA 0.05
Sweden TWA 0.05 (resp. dust)
0.1 (total dust)
Switzerland MAK-W 0.1
United Kingdom TWA 0.1
USA PEL 0.05
Zirconium and compounds, as Zr
mg/m³
ACGIH TLV 10; 10-STEL, Not classifiable as human carcinogen
Australia TWA 5; 10-STEL
Austria MAK 5
Denmark TWA 5
Finland TWA 5
Korea TLV 5
Hungary 5-STEL
Poland TWA 5; 10-STEL
Russia 6-STEL
OSHA PEL 5

Additional information: No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Refer to 29CFR1910.1025 for regulations on respiratory protection required during exposure to lead and lead compounds.

Protection of hands: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

SECTION 9 ----- PHYSICAL AND CHEMICAL PROPERTIES-----

Form: Target

Color: White

Off-white

Odor: Odorless

Change in condition

Melting point/Melting range: Not determined

Boiling point/Boiling range: Not determined

Sublimation temperature / start: Not determined

Flash point: Not applicable

Ignition temperature: Not determined

Decomposition temperature: Not determined

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower: Not determined

Upper: Not determined
Vapor pressure: Not determined
Density: Not determined
Solubility in / Miscibility with
Water: Insoluble

SECTION 10 -----STABILITY/ REACTIVITY -----

Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.
Materials to be avoided: No information known.
Dangerous reactions No dangerous reactions known
Dangerous products of decomposition:
Toxic metal oxide fume
Metal oxide fume

SECTION 11 ----- TOXICOLOGICAL INFORMATION -----

Primary irritant effect:
on the skin: Irritant to skin and mucous membranes.
on the eye: Irritating effect.
Sensitization: No sensitizing effects known.
Subacute to chronic toxicity:
Lead and lead compounds may cause abdominal pain, diarrhea, loss of appetite, metallic taste, nausea, vomiting, lassitude, insomnia, muscle weakness, joint and muscle pain, irritability, headache and dizziness. Red blood cells may be damaged resulting in anemia. Gastritis and injury to the kidneys, liver, male gonads, and central nervous system may also occur.
Titanium compounds are considered physiologically inert. There are no reported cases in the literature where titanium as such has caused human intoxication.
Inhalation of zirconium and zirconium compounds may cause pulmonary granulomas.
Additional toxicological information:
May cause harm to the unborn child.
Possible risk of impaired fertility.
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
EPA-B2: Probable human carcinogen, sufficient evidence from animal studies; inadequate evidence or no data from epidemiologic studies.
IARC-2B: Possibly carcinogenic to humans: limited evidence in humans in the absence of sufficient evidence in experimental animals.
NTP-2: Reasonably anticipated to be a carcinogen: limited evidence from studies in humans or sufficient evidence from studies in experimental animals.
ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.

SECTION 12 -----ECOLOGICAL INFORMATION -----

Ecotoxicological effects:
Remark: Very toxic for fish
General notes:

Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Do not allow material to be released to the environment without proper governmental permits.
Very toxic for aquatic organisms

SECTION 13 -----DISPOSAL CONSIDERATIONS -----

Product:

Recommendation Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

SECTION 14 -----TRANSPORT INFORMATION -----

DOT regulations:

Hazard class: None

Land transport ADR/RID (cross-border)

ADR/RID class: None

Maritime transport IMDG:

IMDG Class: None

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: None

Transport/Additional information: Not dangerous according to the above specifications.

SECTION 15 -----REGULATORY INFORMATION -----

Product related hazard informations:

Hazard symbols:

T Toxic

N Dangerous for the environment

Risk phrases:

61 May cause harm to the unborn child

62 Possible risk of impaired fertility

20/22 Also harmful by inhalation and if swallowed.

33 Danger of cumulative effects.

50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Safety phrases:

53 Avoid exposure - obtain special instructions before use.

45 In case of accident or if you feel unwell, seek medical advice immediately.

60 This material and its container must be disposed of as hazardous waste.

61 Avoid release to the environment. Refer to special instructions/Safety data sheets

Special labeling of certain preparations:

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

Information about limitation of use:

For use only by technically qualified individuals.

This product contains lead and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

Other regulations, limitations and prohibitive regulations

Refer to 29CFR1910.1025 for regulations concerning lead and lead compounds.

SECTION 16.-----OTHER INFORMATION-----

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH).

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

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