



SAFETY DATA SHEET

SDS-1000-rev0 Issue Date: 02/15/2019

TITANIUM METAL MICROSPHERES

1. IDENTIFICATION OF SUBSTANCE

1.1 PRODUCT NAME(S)	Titanium Metal Microspheres
1.2 PRODUCT IDENTIFIER(S)	TIMMS
1.3 INTENDED USE	Industrial and research applications
1.4 SUPPLIER'S DETAILS	Cospheric LLC, PO Box 6762, Santa Barbara, CA 93160 info@cospheric.com www.cospheric.com
1.5 EMERGENCY TELEPHONE	+1-805-687-3747 Monday-Friday, 08:00-17:00 PST [UTC-8]

2. HAZARDS IDENTIFICATION

2.1 OSHA/HCS STATUS

This substance is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

2.2 (GHS)LABEL ELEMENTS

Signal word	None
Hazard statements	May form combustible dust concentrations in air.
Precautionary phrases	P210 – Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 – Use explosion-proof electrical equipment. P280 – Wear protective gloves, protective clothing and eye protection. P370 + 378 – In case of fire: Use table salt, dry sand or Class D Fire Extinguisher to contain fire.
Supplemental label elements	Finer powders (<45µm) might be classified as flammable solids.
Safety phrases	S16 – Keep away from sources of ignition - No smoking. S22 – Do not breathe dust. S23 – Do not breathe fumes. S36/37 – Wear suitable protective clothing and gloves. S38 – In case of insufficient ventilation, wear suitable respiratory equipment. S43 – In case of fire, use sand. S51 – Use only in well-ventilated areas.
Other hazards	Dust clouds may form explosive mixture with air. Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.

2.3 HAZARDS NOT OTHERWISE CLASSIFIED Spilled material is extremely slippery. Dust may cause irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NUMBER	% (W/W)
Titanium	7440-32-6	>99.9%

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES



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Eye contact	Rinse with plenty of water. Seek medical advice if symptoms persist.
Skin contact	If symptoms occur, wash with soap and water.
Inhalation	If symptoms occur, move to fresh air. Seek medical advice if necessary.
Ingestion	Call poison control center, seek medical advice.

4.2 IMPORTANT SYMPTOMS/EFFECTS, ACUTE OR DELAYED

Inhalation of high concentrations of dust may cause respiratory irritation.

5. FIRE-FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

Use approved Class D extinguisher or smother with dry sand, dry clay, dry limestone or salt. Do not use water, dry chemical, CO₂, or halon.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

None known.

5.3 SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS

Wear appropriate protective equipment and self-contained breathing apparatus (SCBA).

6. ACCIDENTIAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Follow precautions for safe handling described in this safety data sheet (Section 8).

6.2 ENVIRONMENTAL PRECAUTIONS

Avoid dispersal of spilled material and run-off or contact with soil, waterways, drains and sewers. Dispose of any waste according to prescribed federal, state, local and competent authority guidelines.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEAN UP

Use spark-proof tools and explosion-proof equipment. Collect spillage with shovel, broom or the like. Transfer to a container for disposal.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Avoid handling practices that cause dust formation. Avoid inhalation of high concentrations of dust. Observe occupational exposure limits and minimize the risk of inhalation of dust. Keep powder away from open flames and other sources of ignition. Prevent electrostatic build-up. Use non-sparking metal tools and equipment.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Store in tightly closed original container in a dry, cool and well-ventilated place. Avoid all possible sources of ignition (spark or flame).

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS



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This product is not a hazardous material. The exposure limit for nuisance dust is referenced. Exposure limit values for Titanium are not established.

Nuisance Dust (Particles Not Otherwise Regulated)

OSHA Permissible Exposure Limit (PEL)	Respirable fraction	5mg/m ³
	Total dust	15mg/m ³

8.2 ENGINEERING CONTROLS

Avoid handling practices that cause dust formation. Use local exhaust ventilation to prevent or control exposure.

8.3 INDIVIDUAL PROTECTION MEASURES (PERSONAL PROTECTIVE EQUIPMENT)

Respiratory protection: When handling practices cause dust formation, select respiratory protection appropriate for the particle size of the material.

Eye/face protection: Chemical goggles.

Skin protection: Wear suitable protective clothing and gloves.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Solid metallic spherical particles, grey
Relative density	Per product specification (~4.5g/cc)
Softening Temperature	Per product specification
Flammability	Fine powders (<45µm) might be classified as flammable solids.
Flammable limits	No information available.
Auto-ignition temperature	Product is not self-igniting.
Decomposition temperature	No information available
Odor	Odorless
Vapor pressure	Not-applicable
Vapor density	Not-applicable
pH	Not-applicable
Melting point	1675°C
Solubility in water	Insoluble
Initial boiling point	Not-applicable
Flash point	Not-applicable
Evaporation rate	Not-applicable
Partition coefficient	Not-applicable
Viscosity	Not-applicable

10. STABILITY AND REACTIVITY

Reactivity No specific test data related to reactivity available for this product.



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Chemical stability Stable under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Likely route(s) of exposure Dermal, inhalation

SIGNS AND SYMPTOMS OF EXPOSURE

Eye contact Direct contact with eyes may cause temporary mechanical irritation. Signs and symptoms may include pain, redness.

Skin contact Direct contact with skin may cause physical abrasion.

Inhalation Inhalation above recommended exposure levels may cause respiratory irritation including cough.

Ingestion No harmful effects expected in amounts likely to be ingested by accident. May cause discomfort if swallowed.

TOXICOLOGICAL DATA

Acute toxicity No information available/not sufficient for classification

Skin corrosion/irritation No information available/not sufficient for classification

Serious eye damage/eye irritation No information available/not sufficient for classification

Respiratory or skin sensitization No information available/not sufficient for classification

Germ cell mutagenicity No information available/not sufficient for classification

Carcinogenicity Not listed as a carcinogen (OSHA, NTP, IARC)

Reproductive toxicity No information available/not sufficient for classification

STOT-single exposure No information available/not sufficient for classification

STOT-repeated exposure No information available/not sufficient for classification

Aspiration hazard No information available/not sufficient for classification

12. ECOLOGICAL INFORMATION

Toxicity No information available

Persistence and degradability No information available

Bioaccumulation potential No information available

Mobility in soil No information available

13. DISPOSAL CONSIDERATIONS

Dispose of any waste according to prescribed federal, state, local and competent authority guidelines.

14. TRANSPORTATION INFORMATION

This product is not subject to regulations for the transport of hazardous materials (DOT, IATA, IMO).

15. REGULATORY INFORMATION

This SDS has been prepared to meet the US OSHA Hazard Communication Standard, 29 CFR 1910.1200.



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16. OTHER INFORMATION

The information contained in this document is correct to the best of our knowledge at the date of publication. It should not be viewed as all inclusive, but as a guide only. It does not represent any guarantee of the properties of the product. Cospheric LLC shall not be held liable for any damage resulting from handling of or from contact with the above product. For these reasons, it is important that product users carry out their own tests to satisfy themselves as to the suitability of the safety precautions for their own intended applications.

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