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SAFETY DATA SHEET

Section 1- IDENTIFICATION

COMPOSITION		PRODUCT NAME
TiN		**Titanium Nitride**
SUPPLIER: **Plasmaterials, Inc.** **1270-B Quarry Lane** **Pleasanton, CA 94566** **Ph: 925-447-4030**	RECOMMENDED USE: **Laboratory Chemicals** **Scientific Research**	EMERGENCY TELEPHONE NUMBERS **US: 001-800-424-9300** **Europe: 001-703-527-3887**

Section 2- HAZARD(S) IDENTIFICATION

Physical Hazards: Not Classified	**Health Hazards:** Not Classified
Environmental Hazards: Not Classified	**OSHA Defined Hazards:** Not Classified
LABEL ELEMENTS:	
Hazard Symbol: None	**Signal Word:** None

HAZARD STATEMENTS

-The substance does not meet the criteria for classification

PRECAUTIONARY STATEMENTS

-P264: Wash face, hands and any exposed skin thoroughly after handling
-P270: Do not eat, drink or smoke when using this product
-P420: Store away from incompatible materials
-P501: Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC):

-None identified.

Section 3- COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS-No	Weight %
Titanium Nitride	25583-20-4	<=100

Section 4- FIRST AID MEASURES

Inhalation: Remove victim from exposure to fresh air. Give oxygen if breathing is difficult. If not breathing, give artificial respiration. Consult a physician if symptoms develop or persist.

Skin Contact: Wash off with soap and plenty of water. Consult a physician if irritation develops and persists.

Eye Contact: As a precaution, flush eyes with lukewarm water, lifting upper and lower lids, for at least 15 minutes. Consult a physician if irritation develops and persists.

Ingestion: Rinse mouth with water. Never give anything by mouth to an unconscious person. Consult a physician if irritation develops and persists.

Most Important Symptoms/Effects: The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11. Direct contact with eyes may cause temporary irritation.

Indication of any Immediate Medical Attention and Special Treatment Needed: No data available

Section 5- FIREFIGHTING MEASURES

Suitable Extinguishing Media:	**Unsuitable Extinguishing Media:**
Water Spray, Alcohol-Resistant Foam, Dry Chemical Powder, Carbon Dioxide (CO2)	None Known

Specific Hazards Arising from the Chemical:
Titanium/Titanium Oxides, Nitrogen Oxide

General Fire Hazards:
No unusual fire or explosion hazards noted.

Protective Equipment & Precautions for Firefighters:
As in any fire, Firefighters must wear full face, self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

Specific Methods:
Use water spray to cool unopened containers. Use standard firefighting procedures and consider the hazards of other involved materials.

Section 6- ACCIDENTAL RELEASE MEASURES

Personal Precautions: Keep unnecessary personnel away. Avoid dust formation. Avoid breathing vapors, mist or gas. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. For personnel protection see Section 8.

Environmental Precautions: No special environmental precautions required

Methods for Containment & Clean Up: Stop the flow of material if this is without risk. Sweep up and shovel. Keep in suitable, closed containers for disposal. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal see Section 13.

Section 7- HANDLING AND STORAGE

Handling: Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. Observe good industrial hygiene practices.

Storage: Store in original tightly closed container. Store in a dry, well-ventilated place. Store away from incompatible materials.

Section 8- EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:
Occupational Exposure Limits/Components with Workplace Control Parameters: No exposure limit values noted for substance(s)

Biological Limit Values: No biological exposure limits noted for the substance

Appropriate Engineering Controls: Follow standard monitoring procedures.

Personal Protective Equipment:
Eye/Face Protection: Wear safety glasses with side shields or goggles. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
Skin and Body Protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Wear suitable protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Respiratory Protection: In case of insufficient ventilation, wear suitable respiratory equipment. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Hygiene Measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands

before breaks and at the end of the workday. Routinely wash work clothing and protective equipment to remove contaminants.

Section 9- PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Solid
Odor: No information available
Odor Threshold: No information available
pH: No information available
Melting Point/Range: 2,930°C / 5,306°F
Boiling Point/Range: No data available
Flash Point: No information available
Evaporation Rate: No information available
Flammability (solid,gas): No information available
Flammability or Explosive Limits:
Upper: No data available
Lower: No data available
Vapor Pressure: No information available
Vapor Density: No information available
Relative Density: 5.24 g/mL at 25°C (77°F)
Solubility: No information available
Partition coefficient; n-octanol/water: No information available
Auto Ignition Temperature: No information available
Decomposition Temperature: No information available
Viscosity: No information available
Explosive Properties: No information available
Oxidizing Properties: No information available
Molecular Weight: 61.87 g/mol

Section 10- STABILITY AND REACTIVITY

Reactive Hazard: Stable and non-reactive under normal conditions of use, storage and transport.

Stability: Stable under recommended storage conditions.

Conditions to Avoid: Contact with incompatible materials

Incompatible Materials: Strong oxidizing agents, strong acids

Hazardous Decomposition Products: No information available
Hazardous decomposition products formed under fire conditions-Titanium/Titanium Oxide; Nitrogen Oxide
Other decomposition products-No information available

Hazardous Polymerization: No information available

Hazardous Reactions: No information available

Section 11- TOXICOLOGICAL INFORMATION

Information on likely Routes of Exposure:

Inhalation: No information available
Skin Contact: No information available
Eye Contact: No information available
Ingestion: No information available

Information on Toxicological Effects:

Acute Toxicity: No information available
Inhalation: No information available
Dermal: No information available
Skin Corrosion/Irritation: No information available
Serious eye damage/irritation: No information available
Respiratory or Skin Sensitization: No information available
Carcinogenicity: This product is not considered to be a carcinogen by IARC, ACGIH, NTP or OSHA.

Germ Cell Mutagenicity: No information available
Reproductive Effects: No information available
Development Effects: No information available
Specific Target Organ Toxicity – single exposure: No information available
Specific Target Organ Toxicity – repeated exposure: No information available
Aspiration Hazard: No information available
Chronic Effects: No information available
Additional Information: RTECS: Not available
-To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Section 12- ECOLOGICAL INFORMATION

Toxicity: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and Degradability: No information available
Bioaccumulation/Accumulation: No information available
Mobility in Soil: No information available
Results of PBT & vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.
Other Adverse Effects: No information available.

Section 13- DISPOSAL CONSIDERATIONS

Waste Disposal Methods: Offer surplus and non-recyclable solutions to a licensed disposal company. Dispose of contaminated packaging as unused product. Dispose in accordance with all applicable regulations.

Section 14- TRANSPORT INFORMATION

DOT: Not regulated as dangerous goods

IATA: Not regulated as dangerous goods

IMDG/IMO: Not regulated as dangerous goods

Section 15- REGULATORY INFORMATION

US Federal Regulations: This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List. CERCLA/SARA Hazardous Substances – Not Applicable
TSCA Section 12(b) Export Notification (40 CFR 707, Subpt.D): Not regulated
U.S. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050): Not Listed
SARA 302 Extremely Hazardous Substance: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
SARA 313 (TRI Reporting): This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313
SARA 311/312 Hazardous Chemical: No
CERCLA Hazardous Substance List (40 CFR 302.4): Not Listed
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List: Not regulated
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated
Safe Drinking Water Act (SDWA): Not regulated
US California Proposition 65: This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.
US California Controlled Substances, CA Department of Justice (California Health and Safety Code: Section 11100): Not listed
US Massachusetts Right-To-Know (RTK) Substance List: Not regulated
US New Jersey Right-To-Know (RTK) Components: Titanium Nitride (CAS-No.: 25583-20-4)
US Pennsylvania Right-To-Know (RTK) Components: Titanium Nitride (CAS-No.: 25583-20-4)

US Rhode Island Right-To-Know (RTK) Components: Not regulated

Section 16- OTHER INFORMATION

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulations are subject to change, the conditions of handling and use, or misuse are beyond our control, Plasmaterials, Inc. makes no warranty, either expressed or implied, with respect to the completeness or continuing accuracy of the information contained herein and disclaims all liability for reliance thereon. Users should satisfy themselves that they have all current data relevant to their particular use.

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