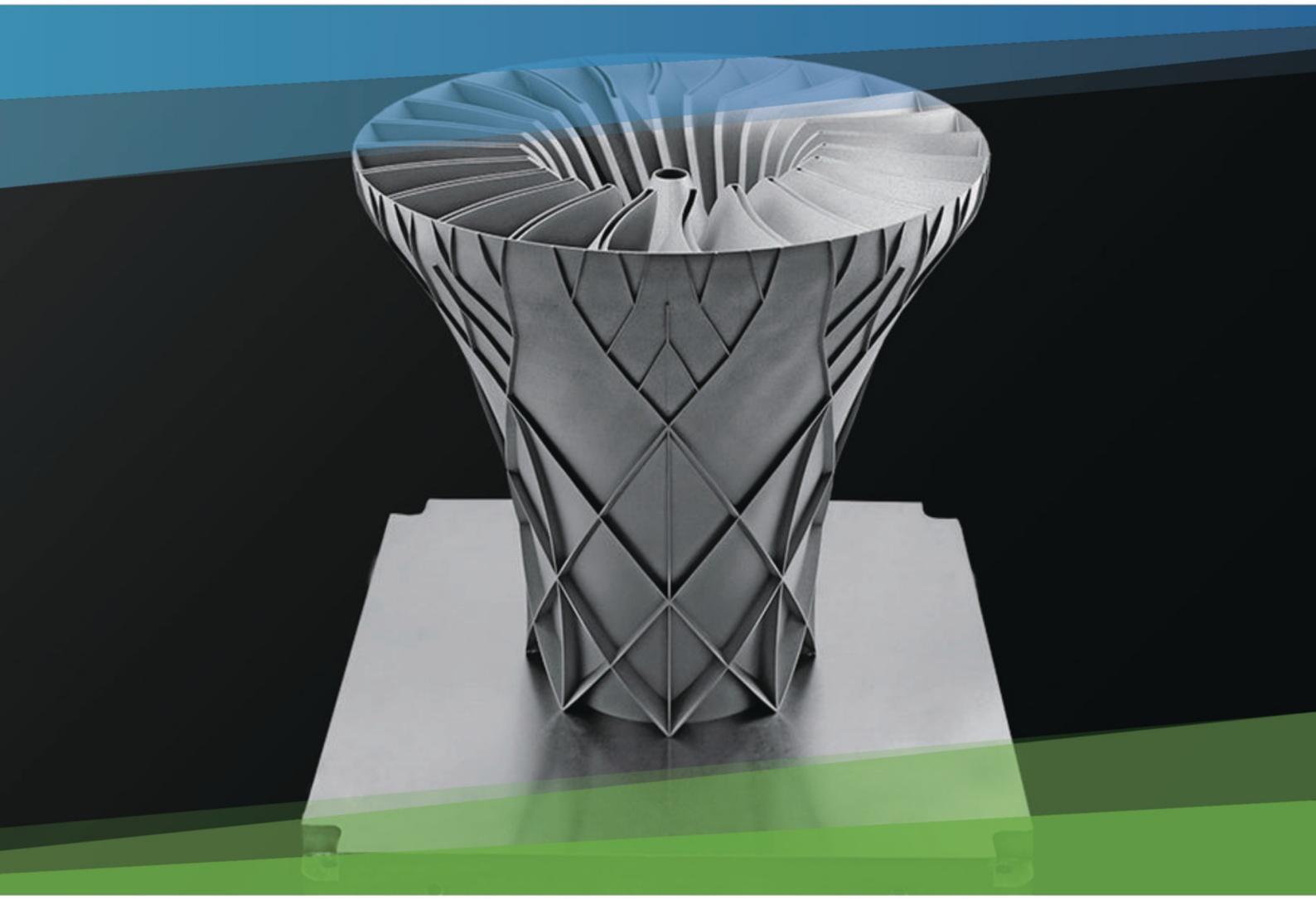
TECHNICAL DATA

JS ADDITIVE

Titanium Alloy Ti6Al4V

Product Demonstration



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Material Overview

Titanium Alloys are alloys based on titanium with other elements added. With the characteristics of high strength, good corrosion resistance and high heat resistance, it has been widely used in various fields.

Advantages

- High thermal strength
- Weldable Steel
- Oxidable / Electroplating

Ideal Applications

- Aerospace
- Medical
- Automotive

Technical Datasheet

General physical properties (polymer material) / part density (g/cm³, metal material)	**Ti6Al4V**
Part density	4.40 g/cm³
Thermal properties (polymer materials) / printed state properties (XY direction, metal materials)	
tensile strength	≥1100 MPa
Yield Strength	≥950 MPa
Elongation after break	≥8%
Vickers hardness (HV5/15)	≥310
Mechanical properties (polymer materials) / heat-treated properties (XY direction, metal materials)	
tensile strength	≥960 MPa
Yield Strength	≥850 MPa
Elongation after break	≥10%
Vickers hardness (HV5/15)	≥300

MSDS NO.: A001R2109020502
Creation Date: September 2, 2021

Applicant: Ningbo Zhongyuan Advanced Materials Technologies Co., Ltd.
Address: Qiyang Industrial Zone, Gaoqiao Town, Haishu District, Ningbo, Zhejiang Province

Sample information:
Sample name: Titanium alloy Powder
Model: 15-53μm
Sample composition/raw material (supplied by client): Refer to section 3 of the MSDS“Composition/Information on Ingredient”
Edit period: From August 27, 2021 to September 2, 2021

Requir ed ser vice	:	As specified by the client, to edit Material Safety Data Sheet (MSDS) by the submitted sample information.
Summary	:	As specified by the client, This safety data sheet was prepared in accordance with Globally Harmonized System of Classification and Labeling of Chemicals (GHS) Rev.8. Please refer to the attached report for details.

Shanghai Fajin Testing Technology Co.,Ltd

Approved by:

Material Safety Data Sheet (M SDS)

In accordance with GHS Rev. 8

Section 1 - Chemical Product and Company Identification

1.1 Product Identification:

ProductName: TitaniumalloyPowder
ProductModel: 15-53μm

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identifieduses: Industry
Useadvisedagainst: Nodataavailable.

1.3 Details of the Manufacture or supplier

Manufacture: NingboZhongyuanAdvancedMaterialsTechnologiesCo.,Ltd.
Address: QiyangIndustrialZone,GaoqiaoTown,HaishuDistrict,Ningbo,ZhejiangProvince
Telephone: +86-18667817000
Fax: +86-574-87115607
E-mail: zhy@zhymat.com

1.4 Emergency telephone number

EmergencyTelephone: +86-18667817000

Section 2 - Hazards Identification

2.1 Classification of the substance or mixture

This product is not classified according to the GHS (The Globally Harmonized System of Classification and Labelling of Chemicals).

2.2 GHS Label elements, including precautionary statements

Pictogram(s): SignalWord: Nopictogramisused.

HazardStatement: Nosignalwordisused.

Precautionarystatements: Nohazardstatement.

Noprecautionarystatement.

2.3 Description of any hazards not otherwise classified

Contacting with acid and Strong base can produce hydrogen. Can form an explosive mixture with air reaching a certain

concentration.

Section 3 - Composition/Information on Ingredient

Substance () Preparation (√) Article ()

Composition:

Chemicalname	CASNo.	Content (%)
Titanium	7440-32-6	90
Aluminum	7429-90-5	6
Vanadium	7440-62-2	4

Abbreviation: CAS No. is Chemical Abstract Service Registry Number.

Section 4 - First Aid Measures

4.1 Description of first aid measures:

Inhalation: Ifdustexists,Removetofreshairandkeepatrestinapositioncomfortableforbreathing.Contacta physician if discomfort.

SkinContact: Washoffwithsoapandplentyofwater.

EyeContact: Ifdustsgetineyes,Immediatelyflusheyeswithplentyofwater,occasionallyliftingtheupperandlower eyelids. If irritation persists, obtain medical advice.

Ingestion: Nevergiveanythingbymouthtoanunconsciousperson.Rinsemouthwithwater.Obtainmedicaladvice.

4.2 Most important symptoms and effects, both acute and delayed

No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically and supportively.

Section 5 -Extinguishing media

5.1 Extinguishing media

Suitable extinguishing media: Use sand or dry chemical.

Unsuitable extinguishing media: DO NOT USE WATER or wet substance, foam or CO2..

5.2 Special hazards arising from the substance or mixture

Fine powder easily burn, and sometimes spontaneous combustion and explosion. Irritating and toxic gases may be generated b

thermal decomposition or combustion.. - Titanium oxide, aluminum oxide, and toxic vanadium oxide.

5.3 Advice for firefighters

Evacuate personnel to safe areas. As in any fire, Wear self-contained breathing apparatus and full protective gear for firefighting. Firefighting from upwind.

5.4Furtherinformation

No data available.

Section 6 - Accidental Release Measures

For guidance on selection of personal protective equipment see Chapter 8 of this Material Safety Data Sheet. See Chapter 13 for information on disposal. Observe the relevant local and international regulations.

6.1 Personal precautions, protective equipment and emergency procedures:

Remove all ignitions. Prevent dust from forming. Do not touch or walk through spilled material; Do not inhale dust; Use appropriate protection equipment.

6.2 Environmental precautions:

Do not release into sewage system.

6.3 Methods and materials for containment and cleaning up:

Spills should be contained （use non-sparking tools or an inert gas scavenger) and recovered mechanically if possible. A suitable waste container should be used to contain spillage. When dealing with powders avoid generating dust and remove all sources of ignition.

Section 7 - Handling and Storage

7.1 Precautions for safe handling:

Operators must be specially trained to strictly observe the operating procedures. Use explosion-proof ventilation systems and equipment. Avoid contact with acids.

Wash thoroughly after handling. Do not eat, drink or smoke at the workplace.

In production processing, Prevent formation of dust and wear appropriate personal protective equipment to minimise exposure when handling powders. Store away from acids and oxidising agents.When handling powders take precautions to prevent the build-up of static electricity by earthing equipment/containers.

7.2 Conditions for safe storage, including any incompatibilities:

Keep container tightly closed in cool, dry and well-ventilated area. Do not store together with strong oxidizing agent, acid, halogen.

Section 8 - Exposure Controls, Personal Protection

8.1 Exposure Limits:

Substance	CASNo.	OSHAPEL	NIOSHREL	ACGIH
AluminumMetal (asAl)	7429-90-5	Totaldust:15mg/cm3 Respirablefraction:5 mg/cm3	Totaldust:10mg/cm3 Respirablefraction:5 mg/cm3	Respirablefraction:1 mg/cm3

8.2 Exposur e contr ols

EngineeringControl: Generalindustrialhygienepractice.Useexplosion-proofventilationsystemsandequipment.

Personalprotectiveequipment:

RespiratoryProtection: Dust mask is recommended during normal handing. 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).

EyesProtection: Usefaceshieldandsafetyglassesifin-eyeriskexists.Useequipmentforeyeprotectiontested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

BodyProtection: Anti-staticoveralls.

HandsProtection: Suggestwearsuitableprotectiveglovestoavoidskinexposure.

OtherProtections: Handleinaccordancewithgoodindustrialhygieneandsafetypractice.Washhandsbefore breaks and at the end of workday.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties	
Appearance	Powder Deep gray Weak odor Not available. Not available.
C olor	Not available. Not applicable as not a liquid. Not applicable as
Odor	not a liquid. Not flammable. Can form explosive dust-air
pH	mixtures when finely dispersed
Melting point/freezing point	
Initial boiling point and boiling range	
Flash point	
Evapor ation r ate	
Flammability	
Explosive limit % (V/V)	

	in air. Not
Vapor pressure	available. Not
Vapor density	available. Not
R ela t ive d en sit y	available.
Solu b ilit y(ies)	Insoluble in water
Partition coefficient: n-octanol/water	Not available. Not
Auto-ignition temperature	available. Not
Decompositiontemperature	available. Not
Viscosit y	available.

Section 10 - Stability and Reactivity

10.1 Stability: Stable under normal storage temperature and pressure.

10.2 Conditions to Avoid: Flames and mars.

10.3 Incompatible materials: Strong oxidizing agents, acid, halogen.

10.4 Hazardous Decomposition Products: Other decomposition products- no data available. In the event of fire:see section 5.

10.5 Possibility of hazardous reactions: Titanium dust is explosive meeting heat, open fire or chemical reaction. Its powder has high chemical activity, can spontaneous combuste in the air. Titanium can not only burn in the air, but also in carbon dioxide, nitrogen. Easy to react with halogen, oxygen, sulfur, nitrogen in high temperature.

Section 11 - Toxicological Information

Acute Toxicity:	No data available. Based on available data, the classification criteria are not
Skin Corrosion/Irritation:	met. Based on available data, the classification criteria are not met. No
Serious Eye Damage/Eye Irritation ：	sensitizing effects known. Based on available data, the classification criteria
Respiratory or Skin Sensitization	are not met. None of the components of this product is listed as a carcinogen
Germ Cell Mutagenicity	by IARC,
C a r cin ogen icit y：	NTP, US OSHA.
	Based on available data, the classification criteria are not met.
R ep r od u ct ive T oxicit y：	Based on available data, the classification criteria are not met.
Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System):	
Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System):	Based on available data, the classification criteria are not met.

AspirationHazard:	Based on available data, the classification criteria are not met.
Potential Health Effects:	
Inhalation:	Inhaling dust may cause respiratory irritation.. No irritating
Skin Contact:	effect except possible mechanical stimulation. No irritating
Eye Contact:	effect except possible mechanical stimulation. Not a route of
I n gest ion :	exposure. May be harmful if ingested.

Section 12 - Ecological Information

12.1 Toxicity

No data available

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No bioaccumulative potential

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Do not release into sewage system.

Section 13 - Disposal Considerations

Waste treatment methods

Pr oduct

Recycle if possible. Offer surplus and non-recyclable products to a licensed disposal company. Observe according to the national and local related regulations.

Contaminatedpackaging

Contaminated containers should be treated in the same way as the chemical product they contain.

Section 14 - Transport Information

14.1 UN-Number	
ADR/RID/ADN, IMO/IMDG, IATA	Not applicable.
14.2 UN proper shipping name	
ADR/RID/ADN, IMO/IMDG, IATA	Not applicable.
14.3 Transport hazard class(es)	
ADR/RID/ADN, IMO/IMDG, IATA	
Class	Not applicable.
Label	Not applicable.
14.4 Packing group	
ADR/RID/ADN, IMO/IMDG, IATA	Not applicable.
14.5 Environmental hazards	Not applicable.
14.6 Special precautions for user	Not applicable.
14.7 Transport in bulk according to Annex 1 of Marpol and the IBC Code	Not applicable.
14.8 Transport/Additional information:	Not dangerous according to the above specifications.
UN 'Model Regulation" :	Not applicable.

Section 15 - Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

No data available.

15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

Section 16 - Additional Information

16.1 Reference

[1]	IPCS:TheInternationalChemicalSafetyCards (ICSC)	website: http://www.ilo.org/dyn/icsc/showcard.home
[2]	EUREACHRegisteredSubstanceDatabase	website: http://echa.europa.eu/web/guest/information-on-chemicals/registered-substances
[3]	OECD: The Global Portal to Information on	website:

	ChemicalSubstances,	http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
[4]	CAMEOChemicals,	website:http://cameochemicals.noaa.gov/search/simple
[5]	NLM:ChemIDplus,	website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
[6]	EPA:IntegratedRiskInformationSystem,	website:http://cfpub.epa.gov/iris/
[7]	U.S.DepartmentofTransportation:ERG,	website:http://www.phmsa.dot.gov/hazmat/library/erg
[8]	GermanyGESTIS-databaseonhazardsubstance	website:http://gestis-en.itrust.de/
[9]	IARC	website:http://www.iarc.fr/

16.2 Abbreviations and acronyms

PC-STEL	Shorttermexposurelimit
PC-TWA	TimeWeightedAverage
IARC	InternationalAgencyforResearchonCancer
LC50	LethalConcentration50%
LD50	LethalDose50%
EC50	EffectiveConcentration50%
PBT	Persistent,Bioaccumulative,Toxic
vPvB	veryPersistent,veryBioaccumulative
ADR	AgreementonDangerousGoodsbyRoad
IATA	InternationalAirTransportAssociation
IMO	InternationalMaritimeOrganization
IMDG	TheInternationalMaritimeDangerousGoods
ICAO	InternationalCivilAviationOrganization
UN	TheUnitedNations
NTP	NationalToxicilogyProgram
ACGIH	TheAmericanConferenceofGovernmentalIndustrialHygienists
OSHA	OccupationalSafetyandHealthAdministration
NIOSH	NationalInstituteforOccupationalSafetyandHealth

16.3 Disclaimer

-This safety data sheet was prepared in accordance with UN GHS Rev.8.
-The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product

16.4 Information on revision

MSDSCreationDate:	September2,2021
MSDSRevisionDate:	-
ReasonForRevision:	-

MSDS Edition:	1.0

End of MSDS

中国认可
检验
INSPECTION
CNAS IB0071

NO.2622080312

SAFETYDATASHEET

Product Name: Titanium Alloy Powder

Effective Date: 2022-09-14

Compiler: Chen Yusheng

Checker: Liu Linlin

Approver: Dongxuesheng

上海化工院检测有限公司 检验检测专用章

Shanghai Institute of Chemical Industry Testing Co., Ltd.

Optimal Material Technology Co.,Ltd

SAFETY DATA SHEET

Titanium Alloy Powder

SECTION1 PRODUCT AND COMPANY IDENTIFICATION

Product name: Titanium Alloy Powder
Company: Optimal Material Technology Co., Ltd
Address: No. 2, Unit 2, Building 6, Liandong U Valley Tianfu High-tech International Enterprise Port, No. 1000, Tiangong Avenue, Xinxing Street, Tianfu New Area, Sichuan Province, 610213, P. R. China
Email: wulp@tianqigroup.cn
Fax: 86-28-85335383
Emergency Phone: 86-28-67560180

Recommend use of the chemical and restrictions on use: 3D Printing; MIM; Coating. Not Edible, Professional Use Only.

SDS Number: 2622080312
Effective Date: 2022-09-14

SECTION2 HAZARDS IDENTIFICATION

GHS Classification:

Physical Hazards:
Flammable solids Category 1

Health Hazards:
Classification not possible

Environmental Hazards:
Classification not possible

The product lacks relevant data and information for classification, and may have potentially unknown hazards to human health and the environment.

The hazards not mentioned are not applicable or no data available.

Label Elements:

Pictogram:

Signal Word:
Danger

Hazard Statements:
H228 Flammable solid.

Prevention Precautionary Statements:
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting] equipment.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response Precautionary Statements:
P370+P378 In case of fire: Use Water spray, Dry chemical, Carbon dioxide or appropriate foam to extinguish.

Storage Precautionary Statements:
P405 Store locked up.

Disposal Precautionary Statements:
P501 Dispose of contents/container in accordance with local/regional/national/international regulation.

Other Hazards:
No data available.

SECTION3 INFORMATION ON INGREDIENTS

Product name: Titanium Alloy Powder

Ingredient	Concentration	CAS No.	EC No.
Substances			
Ti6Al4V alloy	100%	99906-66-8	/

SECTION4 FIRST-AID MEASURES

Skin Exposure:

In case of contacting with skin, flush with copious amounts of water. If irritation persists, Call a physician.

Eye Exposure:

In case of contacting with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. If irritation persists, Call a physician.

Inhalation Exposure:

If inhaled, immediately remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician.

Oral Exposure:

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Most Important Symptoms/Effects, Acute and Delayed:

No data available.

Indication of Immediate Medical Attention and Special Treatment Needed, if Necessary:

No data available.

SECTION5 FIRE FIGHTING MEASURES

Suitable Extinguishing Media:

Suitable: Water spray, Dry chemical, Carbon dioxide or appropriate foam.

Specific Hazards Arising from the Chemical:

Flammable solid. Take care as it may decompose upon combustion or in high temperatures to generate Titanium oxides, aluminum oxides, vanadium oxides.

Special Protective Action for Fire-fighters:

Firefighters should wear self-contained breathing apparatus and protective clothing to prevent to contact with skin and eyes. Fire-extinguishing work is done from the windward. Isolate the accident area. Entry to noninvolved personnel should be controlled. Cool the container down with water spray until the fire is put out. Move the container from the fire to the open space as much as possible.

SECTION6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protective equipment. Remove all sources of ignition. Avoid breathing dust. Keep people away from and upwind of leakage or spillage. Ensure adequate ventilation. Entry to noninvolved personnel should be controlled around the leakage area by roping off.

Environmental Precautions:

Prevent further leakage or spillage if safe to do so. Avoid entering drains. Avoid release to the environment.

Methods and Materials for Containment and Cleaning up:

Sweep up with spade and transfer to a dry, clean, lidded container for disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

SECTION7 HANDLING AND STORAGE

Precautions for Safe Handling:

Operators should be trained and strictly abide by operating procedures. Wear anti-electrostatic working clothing and anti-electrostatic gloves. Avoid inhalation of dust. Avoid contacting with eyes, skin and clothing. Avoid formation of dust. Keep away from ignition sources, heat and flame. No smoking at working site. Wash hands and face thoroughly after handling. Mechanical exhaust required. Incompatibilities: strong oxidizing agents. Load and unload gently when handling. Prevent the package from breaking and getting damp so as to cause losses. Working place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage emergency treatment equipment.

Conditions for Safe Storage, Including Any Incompatibilities:

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Keep away from ignition sources, heat and flame. Incompatibilities: strong oxidizing agents. Storage place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage emergency treatment equipment.

SECTION8 EXPOSURE CONTROL/PPE

Control Parameters:

GBZ 2.1-2019 Occupational Exposure Limits for Hazardous Agents in the Workplace - Part 1: Chemical Hazardous Agents:
Not set up.
ACGIH:
Not set up.

Appropriate Engineering Controls:
Mechanical exhaust required. Safety shower and eye bath.

Individual Protection Measures:

Eye/Face Protection:
Wear chemical safety glasses.

Skin Protection:
Hand Protection: Wear anti-electrostatic gloves.
Body Protection: Wear anti-electrostatic working clothing.

Respiratory Protection:
Wear government approved respirator.

Thermal Hazards:
No data available.

Other Protect:
No smoking, drinking and eating at working site. Wash thoroughly after handling.

SECTION9 PHYSICAL/CHEMICAL PROPERTIES

Appearance:	Gray powder
Odor:	Weak odor
pH Value:	Not applicable
Solubility:	Insoluble in water
Melting Point/Freezing Point:	>350℃
Boiling Point, Initial Boiling Point and Boiling Range:	Not applicable
Flash Point (Closed Cup):	Not applicable
Density/Relative Density:	No data available
Kinematic Viscosity:	Not applicable
Lower/Upper Explosion Limit/Flammability Limit:	No data available
Vapour Pressure:	No data available
Relative Vapor Density:	No data available
Partition Coefficient N-Octanol/Water(Log Value):	No data available
Autoingnition Temperature:	No data available

Decomposition Temperature:	No data available
Particle Characteristics:	No data available
Flammability (Solid, Gas):	The substance is classified in Division 4.1 Flammable Solids.

SECTION10 STABILITY AND REACTIVITY

Reactivity:
No data available.

Chemical Stability:
Stable under normal temperatures and pressures.

Possibility of Hazardous Reactions:
No data available.

Conditions to Avoid:
No data available.

Incompatible Materials:
Strong oxidizing agents.

Hazardous Decomposition Products:
Titanium oxides, aluminum oxides, vanadium oxides.

SECTION11 TOXICOLOGICAL INFORMATION

Acute Toxicity:
No data available.

Skin Corrosion/Irritation:
No data available.

Serious Eye Damage/Irritation:
No data available.

Respiratory Sensitization:
No data available.

Skin Sensitization:
No data available.

Germ Cell Mutagenicity:
No data available.

Carcinogenicity:
No data available.

Reproductive Toxicity:
No data available.

Specific Target Organ Toxicity -Single Exposure:
No data available.

Specific Target Organ Toxicity -Repeated Exposure:
No data available.

Aspiration Hazard:
No data available.

SECTION12 ECOLOGICAL INFORMATION

Toxicity:
No data available.

Persistence and Degradability:
No data available.

Bioaccumulative Potential:
No data available.

Mobility in Soil:
No data available.

Other Adverse Effects:
No data available.

SECTION13 DISPOSAL CONSIDERATION

Disposal Methods:
Recycle as far as possible. If unable to recycle, it is recommended to use incineration method for disposal under supervision. This product should not be disposed of by discharge into sewers. Return empty containers to the manufacturer or dispose of them in accordance with national and local regulations. Follow the relevant provisions of national and local regulations before disposal. It is recommended to be disposed of by a qualified chemical waste treatment department.

SECTION14 TRANSPORT INFORMATION

RID/ADR(2021 Edition):	Proper Shipping Name: Metal powder, flammable, n.o.s. Hazard Class: 4.1 UN Number: UN3089 Packing Group: II
IATA DGR(63rd Edition):	Proper Shipping Name: Metal powder, flammable, n.o.s. Hazard Class: 4.1 UN Number: UN3089 Packing Group: II
IMO IMDG CODE(2020 Edition):	Proper Shipping Name: Metal powder, flammable, n.o.s. Hazard Class: 4.1 UN Number: UN3089 Packing Group: II Ems No.: F-G, S-G Marine pollutants: Unknown
Environmental Hazards:	Unknown.
Special Precautions for User:	No data available.
Transport in Bulk according to Annex II of MARPOL 73/78 and the IBC Code:	Not applicable.

SECTION15 REGULATORY INFORMATION

Montreal Protocol:
Not listed.

Stockholm Convention:
Not listed.

Rotterdam Convention:
Not listed.

EINECS/ELINCS:
The product is not listed.

TSCA:
The product is not listed.

IECSC:
The product is not listed.

SECTION16 OTHER INFORMATION

Preparation Date:

2022-09-14

Preparation Department:

Shanghai Research Institute of Chemical Industry Testing Co., Ltd.
Tel(Fax): +86-21-52815377/31765555

Revision:

0

Reference Standard:

GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS), 9th revised edition

Abbreviations and Acronyms:

CAS: Chemical Abstracts Service EC: European Commission ACGIH: American Conference of Governmental Industrial Hygienists EmS: Emergency schedule MARPOL: International Convention for the Prevention of Pollution from Ships IBC Code: International Code for the Construction and Equipment of Ships Carrying ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road RID: Regulations concerning the International Carriage of Dangerous Goods by Rail IMO IMDG CODE: International Maritime Organization International Maritime Dangerous Goods Code IATA DGR: International Air Transport Association Dangerous Goods Regulations EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances TSCA: Toxic Substances Control Act IECSC: Inventory of Existing Chemical Substances in China

Other Information:

This SDS is compiled based on the information such as ingredients provided by the applicant and our current knowledge. This SDS shall be used only as a guide. The users of this SDS must make independent judgments on the correctness and completeness and then decide its suitability according to the actual situation. The users should take the relevant legal responsibilities for the consequences of use.