

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

SECTION 1. IDENTIFICATION

Product name : Ti6Al4V ASTM Gd23 powder 20-75 µm
Product code : 031306UD0

Manufacturer or supplier's details

Company name of supplier : ECKART America Corporation
Address : 830 East Erie Street
Painesville OH 44077
Telephone : 866-458-7837
(440) 954-7600
Telefax : (440) 354-6224
e-mail adresse : info.eckart.america.oh@altana.com
Emergency telephone : **CHEMTREC:** 800-424-9300
CHEMTREC: 1-703-527-3387 (International)

NCEC:

(contract no. ECKART29003-NCEC)
US: +1 866 928 0789 (Toll free)
Canada: +1 800 579 7421 (Toll Free)
Mexico: +52 55 5004 8763

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable solids : Category 1

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H228 Flammable solid.

Precautionary Statements :

Prevention:

P210	Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

P280 lighting/ equipment.
Wear protective gloves/ eye protection/ face protection.

Response:

P370 + P378 In case of fire: Use for extinction: Special powder for metal fires.
P370 + P378 In case of fire: Use for extinction: Dry sand.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Hazardous ingredients**

Chemical name	CAS-No.	Concentration (% w/w)
Titanium	7440-32-6	$\geq 90 - \leq 100$
Aluminum	7429-90-5	$\geq 5 - < 10$
Vanadium	7440-62-2	$\geq 1 - < 5$

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice	: Take the victim into fresh air. Move out of dangerous area. Show this material safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	: Remove to fresh air. If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	: Wash off immediately with soap and plenty of water. If on clothes, remove clothes.
In case of eye contact	: Flush eyes with water as a precaution. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	: Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and	: None known.

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

delayed

SECTION 5. FIRE-FIGHTING MEASURES

- | | | |
|--|---|---|
| Suitable extinguishing media | : | Dry sand
Special powder against metal fire |
| Unsuitable extinguishing media | : | ABC powder
Carbon dioxide (CO2)
Foam
Water
High volume water jet |
| Specific hazards during fire fighting | : | Contact with water liberates extremely flammable gas (hydrogen). |
| Further information | : | For safety reasons in case of fire, cans should be stored separately in closed containments.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use a water spray to cool fully closed containers. |
| Special protective equipment for fire-fighters | : | Wear self-contained breathing apparatus for firefighting if necessary. |
-

SECTION 6. ACCIDENTAL RELEASE MEASURES

- | | | |
|---|---|--|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.
Evacuate personnel to safe areas.
Avoid dust formation.
Remove all sources of ignition. |
| General advice | : | The product should not be allowed to enter drains, water courses or the soil.
Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities. |
| Environmental precautions | : | The product should not be allowed to enter drains, water courses or the soil.

Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities. |
| Methods and materials for containment and cleaning up | : | Use mechanical handling equipment.
Do not use a vacuum cleaner.

Contain spillage, and then collect with an electrically protected |
-

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Use explosion-proof equipment.
During processing, dust may form explosive mixture in air.
Take measures to prevent the build up of electrostatic charge.
When transferring from one container to another apply earthing measures and use conductive hose material.

Provide appropriate exhaust ventilation at places where dust is formed.
Keep away from open flames, hot surfaces and sources of ignition.

Advice on safe handling : Avoid creating dust.
Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.
Store away from heat.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Open drum carefully as content may be under pressure.
Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Earthing of containers and apparatuses is essential.
Reaction with water liberates extremely flammable gas (hydrogen)
Use explosion-proof equipment.
Store in original container.
Keep away from sources of ignition - No smoking.
Keep container closed when not in use.
No smoking.
Keep container tightly closed in a dry and well-ventilated place.
Electrical installations / working materials must comply with the technological safety standards.

Technical measures/Precautions : Protect from humidity and water.

Materials to avoid : Do not store together with oxidizing and self-igniting products.
Never allow product to get in contact with water during storage.
Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

Further information on storage stability : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Titanium	7440-32-6	TWA (total dust)	50 Million particles per cubic foot	OSHA Z-3
		TWA (total dust)	15 mg/m3	OSHA Z-3
		TWA (respirable fraction)	5 mg/m3	OSHA Z-3
		TWA (respirable fraction)	15 Million particles per cubic foot	OSHA Z-3
Aluminum	7429-90-5	TWA (Respirable)	5 mg/m3	NIOSH REL
		TWA (total)	10 mg/m3	NIOSH REL
		TWA (total dust)	15 mg/m3 (Aluminum)	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3 (Aluminum)	OSHA Z-1
		TWA (Total dust)	15 mg/m3 (Aluminum)	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3 (Aluminum)	OSHA P0
		TWA (welding fumes)	5 mg/m3 (Aluminum)	NIOSH REL
		TWA (Fumes)	5 mg/m3	OSHA P0
		TWA (pyro powders)	5 mg/m3 (Aluminum)	NIOSH REL
		TWA (Respirable particulate)	1 mg/m3 (Aluminum)	ACGIH

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

		matter)		
		TWA (powder)	5 mg/m3 (Aluminum)	OSHA P0
Vanadium	7440-62-2	TWA	1 mg/m3	NIOSH REL
		ST	3 mg/m3	NIOSH REL

Personal protective equipment

Respiratory protection : Use suitable breathing protection if workplace concentration requires.
Breathing apparatus with filter.
P1 filter

Hand protection
Material : Leather
Glove length : Long sleeve gloves

Remarks : Leather gloves The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.
The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Face-shield
Tightly fitting safety goggles

Skin and body protection : Anti-static and fire resistant protective clothing. DIN EN 11612; EN 533; EN 1149-1; Anti-static safety shoes
Dust impervious protective suit
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : granular
Color : No data available
Odor : characteristic
Odor Threshold : No data available
pH : substance/mixture is non-soluble (in water)
Melting point/freezing point : No data available
Initial boiling point and boiling range : No data available
Flash point : No data available
Evaporation rate : No data available
Flammability (solid, gas) : The substance or mixture is a flammable solid with the category 1.

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative density	:	No data available
Solubility(ies)	:	
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	Contact with acids and alkalis may release hydrogen. No decomposition if stored and applied as directed. Dust may form explosive mixture in air.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Acids Bases Oxidizing agents Water

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

Respiratory or skin sensitization**Skin sensitization**

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Other adverse effects

No data available

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues	:	Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION**Domestic regulation****49 CFR**

UN/ID/NA number	:	UN 3089
Proper shipping name	:	Metal powders, flammable, n.o.s.
Class	:	4.1
Packing group	:	II
Labels	:	FLAMMABLE SOLID
ERG Code	:	170
Marine pollutant	:	no

International Regulations**IATA-DGR**

UN/ID No.	:	UN 3089
Proper shipping name	:	Metal powder, flammable, n.o.s.
Class	:	4.1
Packing group	:	II
Labels	:	Flammable Solid
Packing instruction (cargo aircraft)	:	448
Packing instruction (passenger aircraft)	:	445

IMDG-Code

UN number	:	UN 3089
Proper shipping name	:	METAL POWDER, FLAMMABLE, N.O.S.
Class	:	4.1
Packing group	:	II
Labels	:	4.1
EmS Code	:	F-G, S-G
Marine pollutant	:	no
Remarks	:	IMDG Code segregation group 7 - Heavy metals and their salts, IMDG Code segregation group 15 - Powdered metals

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

SECTION 15. REGULATORY INFORMATION**EPCRA - Emergency Planning and Community Right-to-Know****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Aluminum	7429-90-5	>= 5 - < 10 %
Vanadium	7440-62-2	>= 1 - < 5 %

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM/Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations**Massachusetts Right To Know**

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

Aluminum	7429-90-5
----------	-----------

Vanadium	7440-62-2
----------	-----------

Pennsylvania Right To Know

Titanium	7440-32-6
----------	-----------

Aluminum	7429-90-5
----------	-----------

Vanadium	7440-62-2
----------	-----------

California Prop. 65

WARNING: This product can expose you to chemicals including lead and cadmium, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

California List of Hazardous Substances

Titanium	7440-32-6
----------	-----------

Aluminum	7429-90-5
----------	-----------

Vanadium	7440-62-2
----------	-----------

California Permissible Exposure Limits for Chemical Contaminants

Titanium	7440-32-6
----------	-----------

Aluminum	7429-90-5
----------	-----------

The ingredients of this product are reported in the following inventories:

DSL	: All components of this product are on the Canadian DSL
TSCA	: All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-3	:	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
ACGIH / TWA	:	8-hour, time-weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average
OSHA Z-3 / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition

Ti6Al4V ASTM Gd23 powder 20-75 µm

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	05/08/2024	102000036894	Date of first issue: 05/08/2024

Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 05/08/2024

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8