

# SAFETY DATA SHEET

Date Printed: 02/20/2020

Date Revised: 05/15/2015

## SECTION 1. IDENTIFICATION

**Product Name:** Titanium Aluminum Vanadium Powder

**Product Number:** All applicable American Elements product codes, e.g. TI-ALV-01-P.40V , TI-ALV-ELI-P.40V , TI-ALV-01-P.25

**CAS #:**

**Relevant identified uses of the substance:** Scientific research and development

**Supplier details:**

American Elements  
10884 Weyburn Ave.  
Los Angeles, CA 90024  
Tel: +1 310-208-0551  
Fax: +1 310-208-0351

**Emergency telephone number:**

+1 800-424-9300

## SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

GHS02 Flame

Pyr. Sol. 1 H250 Catches fire spontaneously if exposed to air.

Self-heat. 2 H252 Self-heating in large quantities; may catch fire.

Hazards not otherwise classified

No data available

Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labeled according to the CLP regulation.

Hazard pictogram



GHS02

Signal word

Danger

Hazard statements

H250 Catches fire spontaneously if exposed to air.

H252 Self-heating in large quantities; may catch fire.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P222 Do not allow contact with air.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P370+P378 In case of fire: Use for extinction: CO<sub>2</sub>, powder or water spray.

P422 Store contents under inert gas.

P420 Store away from other materials.

WHMIS classification

B6 - Reactive flammable material

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

Health (acute effects) = 1

Flammability = 4

Physical Hazard = 2

Other hazards

Results of PBT and vPvB assessment

PBT:

N/A

vPvB:

N/A

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### **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Dangerous components:

CAS: 7440-32-6

EINECS: 231-142-3

Titanium

F R17

Pyr. Sol. 1, H250; Self-heat. 1, H251

CAS: 7429-90-5

EINECS: 231-072-3

Index number: 013-001-00-6

Aluminum

F R15-17

Pyr. Sol. 1, H250; Water-react. 2, H261

CAS: 7440-62-2

EINECS: 231-171-1

Vanadium

Xi R36/37/38;

F R11

Flam. Sol. 1, H228;

Skin Irrit. 2, H315; Eye Irrit. 2, H319; STOT SE 3, H335

Additional information

None known.

Non-Hazardous Ingredients

CAS: 7732-18-5

EINECS: 231-791-2

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## **SECTION 4. FIRST AID MEASURES**

Description of first aid measures

If inhaled:

Supply patient with fresh air. If not breathing, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist. Seek immediate medical advice.

In case of skin contact:

Instantly wash with water and soap and rinse thoroughly. Seek immediate medical advice.

In case of eye contact:

Rinse opened eye for several minutes under running water. Then consult doctor.

If swallowed:

Seek medical treatment.

Most important symptoms and effects, both acute and delayed

No data available

Indication of any immediate medical attention and special treatment needed

No data available

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## **SECTION 5. FIREFIGHTING MEASURES**

Extinguishing media

Suitable extinguishing agents

In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

Special powder for metal fires. Do not use water.

For safety reasons unsuitable extinguishing agents

Water.

Special hazards arising from the substance or mixture

Spontaneously flammable in air.

If this product is involved in a fire, the following can be released:

Metal oxide

Advice for firefighters

Protective equipment:

Wear self-contained breathing apparatus. Wear full protective suit.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Keep unprotected persons away. Ensure adequate ventilation

Keep away from ignition sources

Environmental precautions:

Do not allow product to enter drains, sewage systems, or other water courses system or water bodies.

Methods and materials for containment and cleanup:

Ensure adequate ventilation. Do not flush with water or aqueous cleansing agents

Prevention of secondary hazards:

Keep away from ignition sources.

Reference to other sections

See Section 7 for information on safe handling

See section 8 for information on personal protection equipment.

See Section 13 for information on disposal.

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## SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

Keep containers tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation/exhaustion at the workplace.

Information about protection against explosions and fires:

Protect against electrostatic charges.

Substance/product is auto-flammable.

Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and containers:

No special requirements.

Information about storage in one common storage facility:

Store away from air. Do not store together with acids. Store away from oxidising agents.

Further information about storage conditions:

Store under dry inert gas.

Keep container tightly sealed.

Store in cool, dry conditions in well-sealed containers.

Specific end use(s)

No data available

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components with critical values that require monitoring at the workplace:

7429-90-5 Aluminum (6.0%)

PEL (USA) Long-term value: 15\*; 15\*\* mg/m<sup>3</sup>

\*Total dust; \*\* Respirable fraction

REL (USA) Long-term value: 10\* 5\*\* mg/m<sup>3</sup>

\*Total dust \*\*Respirable fraction

TLV (USA) Long-term value: 1\* mg/m<sup>3</sup>

as Al; \*as respirable fraction

7440-62-2 Vanadium (4.0%)

Ingredients with biological limit values:

7429-90-5 Aluminum (6.0%)

Parameter: Aluminum

Additional information:

No data

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures should be adhered to in handling the chemicals.

Keep away from foodstuffs, beverages and food.

Instantly remove any soiled and impregnated garments.

Wash hands during breaks and at the end of the work.

Maintain an ergonomically appropriate working environment.

Breathing equipment:

Use breathing protection with high concentrations.

Recommended filter device for short term use:

Use a respirator with type N95 (USA) or PE (EN 143) cartridges as a backup to engineering controls.

Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protection of hands:

Inspect gloves prior to use.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Material of gloves

Butyl rubber, BR

Penetration time of glove material (in minutes)

No data available

Eye protection:

Safety glasses

Full face protection

Body protection:

Protective work clothing

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance:

Form:

Powder

Color:

Silver grey

Smell:

Odorless

Odor threshold:

No data available.

pH:

N/A

Melting point/Melting range:

ca 1650 °C

Boiling point/Boiling range:

No data available

Sublimation temperature / start:

No data available

Inflammability (solid, gas)

No data available.

Ignition temperature:

400 °C

Decomposition temperature:

No data available

Self-inflammability:

Spontaneously flammable in air.

Danger of explosion:

No data available.

Critical values for explosion:

Lower:

No data available

Upper:

No data available

Steam pressure at 20 °C:

23 hPa

Density

No data available

Relative density  
No data available.  
Vapor density  
N/A  
Evaporation rate  
N/A  
Solubility in / Miscibility with  
Water:  
Insoluble  
Partition coefficient (n-octanol/water):  
No data available.  
Viscosity:  
Dynamic:  
N/A  
Kinematic:  
N/A  
Solvent content:  
Organic solvents:  
0.0 %  
Solids content:  
100.0 %  
Other information  
No data available

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## **SECTION 10. STABILITY AND REACTIVITY**

Reactivity  
Catches fire spontaneously if exposed to air.  
Chemical stability  
Stable under recommended storage conditions.  
Thermal decomposition / conditions to be avoided:  
No decomposition if used and stored according to specifications.  
Possibility of hazardous reactions  
Reacts with strong oxidising agents  
Spontaneously flammable in air.  
Conditions to avoid  
No data available  
Incompatible materials:  
Acids  
Air  
Oxidising agents  
Hazardous decomposition products:  
Metal oxide

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

Information on toxicological effects  
Acute toxicity:  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.  
LD/LC50 values that are relevant for classification:

No data

Skin irritation or corrosion:

May cause irritation

Eye irritation or corrosion:

May cause irritation

Sensitization:

No sensitizing effect known.

Germ cell mutagenicity:

No effects known.

Carcinogenicity:

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.

Reproductive toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for components in this product.

Specific target organ system toxicity - repeated exposure:

No effects known.

Specific target organ system toxicity - single exposure:

No effects known.

Aspiration hazard:

No effects known.

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

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## **SECTION 12. ECOLOGICAL INFORMATION**

Toxicity

Aquatic toxicity:

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Additional ecological information:

Water hazard class 1 (Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities to reach groundwater, water courses, or sewage systems. Avoid transfer into the environment.

Results of PBT and vPvB assessment

PBT:

N/A

vPvB:

N/A

Other adverse effects

No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Recommendation

Hand over to disposers of hazardous waste

Must be specially treated under adherence to official regulations.

Consult official regulations for proper disposal.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

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## SECTION 14. TRANSPORT INFORMATION

UN-Number

ADR, IMDG, IATA

UN2546

UN proper shipping name

ADR

2546 TITANIUM POWDER, DRY

IMDG, IATA

TITANIUM POWDER, DRY

Transport hazard class(es)

ADR

Class

4.2 (S4) Substances liable to spontaneous combustion.

Label

4.2

IMDG, IATA

Class

4.2 Substances liable

to spontaneous combustion.

Label

4.2

Packing group

ADR, IMDG, IATA

I

Environmental hazards:

Marine pollutant:

No

Special precautions for user

Warning: Substances liable to spontaneous combustion.

EMS Number:

F-G,S-M

Segregation groups

Heavy metals and their salts (including their organometallic compounds), powdered metals

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

N/A

Transport/Additional information:

ADR

Excepted quantities (EQ):

E0



Limited quantities (LQ)

Transport category

Tunnel restriction code

E

UN "Model Regulation":

UN2546, TITANIUM POWDER, DRY, 4.2, I

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## SECTION 15. REGULATORY INFORMATION

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

Australian Inventory of Chemical Substances

All ingredients are listed.

Standard for the Uniform Scheduling of Drugs and Poisons

None of the ingredients is listed.

National regulations

Information about limitation of use:

Employment restrictions concerning young persons must be observed.

For use only by technically qualified individuals.

Classification according to VbF:

N/A

Water hazard class:

Water hazard class 1 (Self-assessment): slightly hazardous for water.

Other regulations, limitations and prohibitive regulations

ELINCS (European List of Notified Chemical Substances)

None of the ingredients is listed.

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No.1907/2006.

None of the ingredients are listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

None of the ingredients is listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use)

None of the ingredients is listed.

Chemical safety assessment:

A Chemical Safety Assessment has not been carried out

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## 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. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2019 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.

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