SECTION 1. IDENTIFICATION

Product Name: Titanium Aluminum Vanadium Powder

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

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: CO2, powder or water spray.
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

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
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

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.

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.
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

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$^3$
*Total dust; ** Respirable fraction

REL (USA) Long-term value: 10* 5** mg/m$^3$
*Total dust **Respirable fraction

TLV (USA) Long-term value: 1* mg/m$^3$
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

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
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

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.

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
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.

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

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

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.