



Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Revision: 10 June 2019

SECTION 1: Identification of the substance/mixture and of the company/undertaking

· 1.1 Product identifier

- **Trade name: Titanium Dioxide**
- **Other product identifiers:** PP46, PP46F, PP46VF
- **Other means of identification:**
 - CAS number:** 13463-67-7
 - EC number:** 236-675-5
 - Registration number:** 01-2119489379-17-XXXX

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

- **Application of the substance / the mixture:** Thermal Spray Powder
- **Uses advised against:** No further relevant information available.

· 1.3 Details of the supplier of the Safety Data Sheet

- **Manufacturer/Supplier:**
 - Aimtek, Inc.
 - 201 Washington Street,
 - Auburn, MA 01501 - USA
 - Phone: 508-832-5035

· 1.4 Emergency telephone number:

- ChemTel Inc.
- (800)255-3924 (North America)
- +1 (813)248-0585 (International)
- 1-300-954-583 (Australia)
- 0-800-591-6042 (Brazil)
- 400-120-0751 (China)
- 000-800-100-4086 (India)
- 01-800-099-0731 (Mexico)

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture

· **Classification according to Regulation (EC) No 1272/2008**

Classifications listed are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).

Carc. 2 H351 Suspected of causing cancer.

The substance is not classified as hazardous according to the CLP regulation.

· 2.2 Label elements

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the Globally Harmonized System within the United States.

This product does not have a classification according to the CLP regulation.

· **Hazard pictograms**

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Applicable only within the United States (USA)

· **Signal word**

Applicable only within the United States (USA)
Warning

· **Hazard statements**

Applicable only within the United States (USA)
H351 Suspected of causing cancer.

· **Precautionary statements**

Applicable only within the United States (USA)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves / eye protection.
P308+P313 If exposed or concerned: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Additional information:**

Safety data sheet available on request.

· **2.3 Other hazards** There are no other hazards not otherwise classified that have been identified.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

· **3.1 Substances**

Titanium dioxide

· **Identification number(s)**

CAS number: 13463-67-7

EC number: 236-675-5

Registration number: 01-2119489379-17-XXXX

SECTION 4: First aid measures

· **4.1 Description of first aid measures**

· **After inhalation:** Supply fresh air; consult doctor in case of complaints.

· **After skin contact:**

Brush off loose particles from skin.

Immediately rinse with water.

If skin irritation is experienced, consult a doctor.

· **After eye contact:**

Remove contact lenses if worn, if possible.

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

· **After swallowing:**

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Rinse out mouth and then drink plenty of water.

Do not induce vomiting; call for medical help immediately.

· **4.2 Most important symptoms and effects, both acute and delayed**

Breathing difficulty

Coughing

Slight irritant effect on skin and mucous membranes.

Slight irritant effect on eyes.

May cause gastro-intestinal irritation if ingested.

· **Hazards:** Suspected of causing cancer. Route of exposure: Inhalation.

· **4.3 Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**

· **Suitable extinguishing agents:**

The product is not flammable.

Use fire extinguishing methods suitable to surrounding conditions.

· **For safety reasons unsuitable extinguishing agents:** None.

· **5.2 Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

· **5.3 Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation

Do not breathe dust.

Avoid formation of dust.

For large spills, use respiratory protective device against the effects of fumes/dust/aerosol.

· **6.2 Environmental precautions** Avoid release to the environment.

· **6.3 Methods and material for containment and cleaning up**

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

· **6.4 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 disposal information.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

Any unavoidable deposit of dust must be regularly removed.

Avoid breathing dust.

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Use personal protective equipment as required.

Use only in well ventilated areas.

· **Information about fire - and explosion protection:** No special measures required.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Requirements to be met by storerooms and receptacles:** Store in a cool location.

· **Information about storage in one common storage facility:**

Store away from foodstuffs.

Store away from oxidising agents.

· **Further information about storage conditions:** Keep container tightly sealed.

· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

13463-67-7 Titanium dioxide

EL (Canada)	Long-term value: 10* 3** mg/m ³ *total dust;**respirable fraction; IARC 2B
EV (Canada)	Long-term value: 10 mg/m ³ total dust
WEL (Great Britain)	Long-term value: 10* 4** mg/m ³ *total inhalable **respirable
OEL (Ireland)	Long-term value: 10* 4** mg/m ³ *total inhalable **respirable dust
PEL (USA)	Long-term value: 15* mg/m ³ *total dust
REL (USA)	See Pocket Guide App. A
TLV (USA)	Long-term value: 10 mg/m ³

· **DNELs:** No further relevant information available.

· **PNECs:** No further relevant information available.

· **8.2 Exposure controls**

· **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing.

Avoid breathing dust.

Avoid contact with the eyes.

Avoid close or long term contact with the skin.

· **Respiratory protection:**

Suitable respiratory protective device recommended.

Particulate mask should filter at least 99% of airborne particles.

· **Protection of hands:**

Wear gloves for the protection against mechanical hazards according to NIOSH or EN 388.

· **Eye protection:**

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Safety glasses

- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment:** Avoid release to the environment.
- **Risk management measures:** No further relevant information available.

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· Appearance

Form:	Granulate Dust Powder
Colour:	Grayish Black
· Odour:	Odourless
· Odour threshold:	Not determined.

· pH-value:	Not applicable.
· Melting point/freezing point:	1800 °C (3272 °F)
· Initial boiling point and boiling range:	2500-3000 °C (4532-5432 °F)

· Flash point:	Not applicable.
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· Flammability (solid, gas):	Not determined.
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· Auto/Self-ignition temperature:	Not determined.
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· Decomposition temperature:	Not determined.
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· Explosive properties:	Product does not present an explosion hazard.
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· Explosion limits

Lower:	Not determined.
Upper:	Not determined.

· Oxidising properties	Non-oxidising.
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· Vapour pressure:	Not applicable.
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· Density:

Relative density:	Not determined.
Vapour density:	Not applicable.
Evaporation rate:	Not applicable.

· Solubility in / Miscibility with water:	Insoluble.
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· Partition coefficient: n-octanol/water:	Not determined.
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· Viscosity

Dynamic:	Not applicable.
Kinematic:	Not applicable.

· 9.2 Other information	No further relevant information available.
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SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with strong acids and oxidising agents.
- **10.4 Conditions to avoid** Moisture.
- **10.5 Incompatible materials** Oxidisers, strong bases, strong acids
- **10.6 Hazardous decomposition products**
Under fire conditions only:
Toxic metal oxide smoke

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values relevant for classification:** None.
- **Primary irritant effect**
- **Skin corrosion/irritation:** Slight irritant effect on skin and mucous membranes.
- **Serious eye damage/irritation:** Slight irritant effect on eyes.
- **Respiratory or skin sensitisation:** Based on available data, the classification criteria are not met.
- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer):**

2B

- **Probable routes of exposure:**
Ingestion.
Inhalation.
Eye contact.
Skin contact.
- **Repeated dose toxicity:**
Repeated or long-term inhalation of product dusts may cause pulmonary disease.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:**
Suspected of causing cancer. Route of exposure: Inhalation.
Based on IARC classifications and not the CLP classification.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.

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- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Generally not hazardous for water.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Smaller quantities can be disposed of with household waste.
Contact waste processors for recycling information.
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- | | |
|--|-----------------|
| 14.1 UN-Number | |
| · DOT, ADR/RID/ADN, IMDG, IATA | Not Regulated |
| 14.2 UN proper shipping name | |
| · DOT, ADR/RID/ADN, IMDG, IATA | Not Regulated |
| 14.3 Transport hazard class(es) | |
| · DOT, ADR/RID/ADN, IMDG, IATA | |
| · Class | Not Regulated |
| 14.4 Packing group | |
| · DOT, ADR/RID/ADN, IMDG, IATA | Not Regulated |
| 14.5 Environmental hazards: | |
| · Marine pollutant: | No |
| 14.6 Special precautions for user | Not applicable. |
| 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code | Not applicable. |

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture** (Cont'd. on page 8)

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- **United States (USA)**

- **SARA**

- **Section 302 (extremely hazardous substances):**

Substance is not listed.

- **Section 355 (extremely hazardous substances):**

Substance is not listed.

- **Section 313 (Specific toxic chemical listings):**

Substance is not listed.

- **TSCA (Toxic Substances Control Act):**

Substance is listed

- **Proposition 65 (California):**

- **Chemicals known to cause cancer:**

Substance is listed.

- **Chemicals known to cause developmental toxicity for females:**

Substance is not listed.

- **Chemicals known to cause developmental toxicity for males:**

Substance is not listed.

- **Chemicals known to cause developmental toxicity:**

Substance is not listed.

- **EPA (Environmental Protection Agency)**

Substance is not listed.

- **IARC (International Agency for Research on Cancer)**

2B

- **Canadian Domestic Substances List (DSL)**

Substance is listed

- **Other regulations, limitations and prohibitive regulations**

- **Substances of very high concern (SVHC) according to REACH, Article 57**

Substance is not listed.

- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

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ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
DNEL: Derived No-Effect Level (REACH)
PNEC: Predicted No-Effect Concentration (REACH)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bio-accumulable, Toxic
SVHC: Substances of Very High Concern
vPvB: very Persistent and very Bioaccumulative

Sources

Website, European Chemicals Agency (echa.europa.eu)
Website, US EPA Substance Registry Services (ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do)
Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.
Safety Data Sheets, Individual Manufacturers

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