

# SAFETY DATA SHEET

Classified in accordance with 29 CFR 1910.1200

## 1. Identification

**Product identifier:** INFINAM® PA 6002 P

**Other means of identification**

None.

**Recommended restrictions**

**Recommended use:** Powder for 3D printing

**Restrictions on use:** Not determined.

**Manufacturer/Importer/Distributor Information**

Company Name : Evonik Corporation  
2 Turner Place  
Piscataway, NJ 08854  
USA

Telephone : +1 732 981 5000

E-mail : product-regulatory-services@evonik.com

**Emergency telephone number:**

24-Hour Health : +1 800 424 9300 (CHEMTREC - US & CANADA)

Emergency : 800 681 9531 (CHEMTREC MEXICO)

+1 703 527 3887 (CHEMTREC WORLD)

## 2. Hazard(s) identification

**Hazard Classification**

**OSHA hazard(s)**

Combustible dust

**Label Elements**

**Hazard Symbol:** No symbol

**Signal Word:** Warning

**Hazard Statement:** May form combustible dust concentrations in air.

**Precautionary Statements**

**Prevention:**

**Disposal:**

**Hazard(s) not otherwise classified (HNOC):** None.

### 3. Composition/information on ingredients

#### Mixtures

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%) <sup>*</sup>
titanium dioxide		13463-67-7	0.1 - <1%

<sup>\*</sup> All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**Composition Comments:** This sheet describes a group of products. It only contains safety-relevant data. For specific data, see Product Information sheet.

**Composition Comments:** coating powder on the base: polyamide

The exact concentration has been withheld as a trade secret.

### 4. First-aid measures

#### Description of necessary first-aid measures

<b>General information:</b>	Pay attention to self-protection. Move out of dangerous area. Keep warm, position comfortably, and cover well. Do not leave the victim unattended.
<b>Inhalation:</b>	In case of symptoms of irritation caused by vapours in thermal processing: Provide fresh air, seek medical advice if necessary. Following inhalation of product dust: See that there is fresh air.
<b>Skin Contact:</b>	Cool melted product on skin with plenty of water. Do not remove solidified product. In case of burns by molten product medical treatment is necessary.
<b>Eye contact:</b>	Rinse with plenty of water. Obtain medical attention if irritation develops or persists.
<b>Ingestion:</b>	If swallowed, get medical attention immediately. Only induce vomiting if directed by a physician. Never give anything by mouth to an unconscious person.
<b>Personal Protection for First-aid Responders:</b>	No data available.

#### Most important symptoms and effects, both acute and delayed

<b>Symptoms:</b>	No experiences of acute or chronic damages in humans have been made as yet.
<b>Hazards:</b>	Risk of skin burns caused by hot melt.

#### Indication of immediate medical attention and special treatment needed

**Treatment:** Continue with first aid measures. Depending on the pathology and clinical findings, patient monitoring and symptomatic treatment are necessary.

## 5. Fire-fighting measures

### Suitable (and unsuitable) extinguishing media

**Suitable extinguishing media:** Water spray, foam, dry powder or carbon dioxide.

**Unsuitable extinguishing media:** High volume water jet.

**Special hazards arising from the substance or mixture:** May be released in case of fire: carbon monoxide, carbon dioxide, nitric oxides, organic products of decomposition. Under certain conditions of combustion traces of other toxic substances cannot be excluded

### Special protective equipment and precautions for firefighters

**Special fire fighting procedures:** No data available.

**Special protective equipment for fire-fighters:** As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures:** In case product dust is released: Dust mask

**Accidental release measures:** If dust is present, control smoking, open flames, sparks, static electricity and friction heat.

**Methods and material for containment and cleaning up:** Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Dust may form explosive mixture with air. Use only vacuum cleaners approved for combustible dust collection. Use cleaning techniques that do not generate dust clouds if ignition sources are present.

**Environmental Precautions:** Do not release into the environment. Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

## 7. Handling and storage

### Handling

**Technical measures (e.g. Local and general ventilation):** In case of thermal processing, provide for extraction of the vapours or adequate ventilation. In case of dust being formed, provide for adequate extraction. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accordance with accepted engineering practices in any process capable of generating dust and/or static electricity.  
To identify additional system design issues with respect to dust hazards, it is recommended to conduct a dust hazard analysis using information and sources provided in the

OSHA Fact Sheet on combustible dusts (DSG 3/2008) and addressing enforcement issues identified in the Combustible Dust National Emphasis Program (Reissued) (CPL 03-00-008, 3/11/08)

**Safe handling advice:**

Use dust collection systems and filters. Minimize the escape of dust from process equipment and ventilation systems. Utilize surfaces that minimize dust accumulation and facilitate cleaning. Dust accumulations should be avoided to prevent secondary dust explosions. Avoid dust formation. Provide for appropriate exhaust ventilation and dust collection at machinery. In case of thermal processing, provide for extraction of the vapours or adequate ventilation. In thermal processing: Risk of skin burns

**Contact avoidance measures:**

No data available.

**Storage**

**Safe storage conditions:**

General rules of fire prevention should be observed. If dusts are formed: Take precautionary measures against static charges, keep away from sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not allow dust to collect in open or hidden areas. In product transfer systems involving the use of air as a fluidizing medium, the user must be sure to dissipate static charge by careful bonding and grounding of all equipment and personnel involved in fluid transfer, with continuity checks to prove effectiveness. Additional guidance on fire and explosion protection may be found in the consensus standard NFPA 654 for chemical dusts.

**Safe packaging materials:**

No data available.

**8. Exposure controls/personal protection**

**Control Parameters**

**Occupational Exposure Limits**

Chemical Identity	Type	Exposure Limit Values	Source
exposure limit for dust - Respirable particles.	TWA	3 mg/m3	US. ACGIH Threshold Limit Values, as amended (03 2016)
exposure limit for dust - Inhalable particles.	TWA	10 mg/m3	US. ACGIH Threshold Limit Values, as amended (03 2016)
exposure limit for dust - Total dust.	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
exposure limit for dust - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
exposure limit for dust - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
exposure limit for dust - Respirable fraction.	TWA	5 mg/m3	US. OSHA Table Z-3 (29 CFR 1910.1000), as amended (03 2016)
exposure limit for dust - Total dust.	TWA	15 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended (1989)

exposure limit for dust - Respirable fraction.	TWA	5 mg/m <sup>3</sup>	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended (1989)
exposure limit for dust - Total dust.	TWA	15 mg/m <sup>3</sup>	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended (06 2008)
exposure limit for dust - Respirable fraction.	TWA	5 mg/m <sup>3</sup>	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A, as amended (06 2008)
exposure limit for dust - Total dust.	TWA PEL	10 mg/m <sup>3</sup>	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended (01 2015)
exposure limit for dust - Respirable fraction.	TWA PEL	5 mg/m <sup>3</sup>	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants, as amended (01 2015)
exposure limit for dust - Particulate.	AN ESL	1.8 µg/m <sup>3</sup>	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (06 2018)
	ST ESL	18 µg/m <sup>3</sup>	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality), as amended (06 2018)

Please refer to the latest edition of the appropriate source text and consult an industrial hygienist or similar professional, or local agencies, for further information.

### Biological Limit Values

No biological exposure limits noted for the ingredient(s).

### Appropriate Engineering Controls

In case of thermal processing, provide for extraction of the vapours or adequate ventilation. In case of dust being formed, provide for adequate extraction. Avoid dust formation and control ignition sources. Employ grounding, venting and explosion relief provisions in accordance with accepted engineering practices in any process capable of generating dust and/or static electricity.

To identify additional system design issues with respect to dust hazards, it is recommended to conduct a dust hazard analysis using information and sources provided in the OSHA Fact Sheet on combustible dusts (DSG 3/2008) and addressing enforcement issues identified in the Combustible Dust National Emphasis Program (Reissued) (CPL 03-00-008, 3/11/08)

### Individual protection measures, such as personal protective equipment

#### Eye/face protection:

Wear safety glasses with side shields.

### Skin Protection

#### Hand Protection:

Additional Information: Any areas of skin covered with dust must be washed immediately with soap and water as the powder draws out natural moisture from the skin., Use barrier cream regularly. Additional Information: Use impermeable gloves., Protective heat-insulating gloves are to be used during thermal processing.

**Skin and Body Protection:**

Safety showers and eye showers should be easily accessible. In order to determine further specifications applicable to the personal protection equipment, a hazard assessment according to the OSHA standards (29 CFR 1910.132) for personal protection equipment (PPE) is recommended before the product is used.

**Respiratory Protection:**

Put on dust mask equipped with P1 particle filter if the occupational threshold limit value has been exceeded. Note time limit for wearing respiratory protective equipment. A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

**Hygiene measures:**

Smoking, eating and drinking should be prohibited in the application area.

**9. Physical and chemical properties**

**Information on basic physical and chemical properties**

**Appearance**

<b>Physical state:</b>	solid
<b>Form:</b>	Powder
<b>Color:</b>	White
<b>Odor:</b>	Odorless
<b>Odor Threshold:</b>	Not determined., Not required by safety or application considerations.
<b>Melting Point:</b>	369 °F/187 °C
<b>Boiling Point:</b>	Not applicable Decomposition
<b>Flammability:</b>	Not classified as a flammability hazard

**Upper/lower limit on flammability or explosive limits**

<b>Explosive limit - upper:</b>	see Explosiveness
<b>Explosive limit - lower:</b>	see Explosiveness
<b>Flash Point:</b>	Not applicable
<b>Autoignition Temperature:</b>	The substance or mixture is not classified as self heating. The substance or mixture is not classified as pyrophoric.
<b>Decomposition Temperature:</b>	> 572 °F/> 300 °C (TG (thermal gravimetric analysis))
<b>pH:</b>	Not applicable

**Viscosity**

<b>Dynamic viscosity:</b>	No data available. Not required by safety or application considerations.
<b>Kinematic viscosity:</b>	No data available. Not required by safety or application considerations.
<b>Flow Time:</b>	No data available.

**Solubility(ies)**

<b>Solubility in Water:</b>	Insoluble
<b>Solubility (other):</b>	No data available.

<b>Partition coefficient (n-octanol/water):</b>	No data available. Not required by safety or application considerations.
<b>Vapor pressure:</b>	Not applicable
<b>Relative density:</b>	1.0 - 1.2 (68 °F/20 °C)
<b>Density:</b>	No data available.
<b>Bulk density:</b>	420 g/l
<b>Vapor density (air=1):</b>	Not applicable
<b>Particle characteristics</b>	
<b>Particle Size:</b>	< 3 - 500 µm
<b>Particle Size Distribution:</b>	No data available
<b>Specific surface area:</b>	No data available.
<b>Surface charge/Zeta potential:</b>	No data available.
<b>Shape:</b>	No data available
<b>Crystallinity:</b>	No data available
<b>Surface treatment:</b>	No data available

**Other information**

<b>Explosive properties:</b>	Not explosive Dust may form explosive mixture with air.
<b>Oxidizing properties:</b>	The substance or mixture is not classified as oxidizing.
<b>Minimum ignition temperature:</b>	> 662 °F/> 350 °C
<b>Formation of Flammable Gases:</b>	Substance or mixture, which in contact with water, does not emit flammable gas
<b>Peroxides:</b>	The substance or mixture is not classified as organic peroxide.
<b>Metal Corrosion:</b>	Not corrosive to metals
<b>Evaporation Rate:</b>	Not applicable

**10. Stability and reactivity**

<b>Reactivity:</b>	Under normal conditions: stable.
<b>Chemical Stability:</b>	Stable under recommended storage conditions.
<b>Possibility of hazardous reactions:</b>	Do not bring hot smelter into contact with water (steam formation!)
<b>Conditions to avoid:</b>	Extremes of temperature and direct sunlight.
<b>Incompatible Materials:</b>	Avoid contact with strong oxidising agents, strong acids and strong bases
<b>Hazardous Decomposition Products:</b>	carbon monoxide, carbon dioxide Nitrogen Oxides organic products of decomposition

**11. Toxicological information****Information on toxicological effects****Information on likely routes of exposure**

<b>Inhalation:</b>	Information on effects are given below.
<b>Skin Contact:</b>	Information on effects are given below.
<b>Eye contact:</b>	Information on effects are given below.

**Ingestion:** Information on effects are given below.

**Acute toxicity (list all possible routes of exposure)**

**Oral**

**Product:** Not classified for acute toxicity based on available data.

**Dermal**

**Product:** Not classified for acute toxicity based on available data.

**Inhalation**

**Product:** Not classified for acute toxicity based on available data.

**Repeated dose toxicity**

**Product:** No data available.

**Skin Corrosion/Irritation**

**Product:** Not irritating Not irritating; The data are derived from the evaluations or test results achieved with similar products (conclusion by analogy).

**Serious Eye Damage/Eye Irritation**

**Product:** No data available.

**Components:**

titanium dioxide Not irritating OECD 405 Rabbit:

**Respiratory or Skin Sensitization**

**Product:** No data available.

**Components:**

titanium dioxide Local Lymph Node Assay (LLNA), OECD 429 (Mouse): Not a skin sensitizer.

**Carcinogenicity**

**Product:** An Expert Judgment stated that no classification is necessary based on present knowledge.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

titanium dioxide Overall evaluation: 2B. Possibly carcinogenic to humans.

**US. National Toxicology Program (NTP) Report on Carcinogens:**

No carcinogens present or none present in regulated quantities

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:**

No carcinogens present or none present in regulated quantities

**Germ Cell Mutagenicity**

**In vitro**

**Product:** No data available.

**In vivo**

**Product:** No data available.

**Reproductive toxicity**

**Product:** No data available.

**Specific Target Organ Toxicity - Single Exposure**

**Product:** No data available.

**Specific Target Organ Toxicity - Repeated Exposure**

**Product:** No data available.



Product name: INFINAM® PA 6002 P

**Aspiration Hazard**

**Product:** No data available.  
**Components:**  
titanium dioxide Not applicable

**Information on health hazards****Other hazards**

**Product:** No toxicological tests have been conducted with the product itself.;

**12. Ecological information****Ecotoxicity:****Acute hazards to the aquatic environment:****Fish**

**Product:** No data available.  
**Components:**  
titanium dioxide (Oncorhynchus mykiss, 96 h): > 100 mg/l  
LC 50 (Pimephales promelas, 96 h): > 1,000 mg/l  
LC 50 (Oncorhynchus mykiss): > 100 mg/l  
LC 50 (Cyprinodon variegatus (sheepshead minnow)): > 10,000 mg/l

**Aquatic Invertebrates**

**Product:** No data available.

**Toxicity to Aquatic Plants**

**Product:** No data available.  
**Components:**  
titanium dioxide EC 50 : In the range of water solubility not toxic under test conditions.

**Toxicity to microorganisms**

**Product:** No data available.

**Chronic hazards to the aquatic environment:****Fish**

**Product:** No data available.

**Aquatic Invertebrates**

**Product:** No data available.

**Toxicity to Aquatic Plants**

**Product:** No data available.

**Toxicity to microorganisms**

**Product:** No data available.

**Persistence and Degradability****Biodegradation**

**Product:** No data available.  
**Components:**  
titanium dioxide Inorganic The product is not biodegradable.

**BOD/COD Ratio**

**Product:** No data available.

Product name: INFINAM® PA 6002 P

**Bioaccumulative potential****Bioconcentration Factor (BCF)**

**Product:** No data available.  
**Components:**  
titanium dioxide Not to be expected.

**Partition Coefficient n-octanol / water (log Kow)**

**Product:** Log Kow: No data available. Not required by safety or application considerations.

**Mobility in soil:**

**Product** No data available.  
**Components:**  
titanium dioxide No remarkable mobility in soil is to be expected.

**Results of PBT and vPvB assessment:**

**Product** No data available.

**Other adverse effects:**

**Other hazards**  
**Product:** No ecotoxicological studies are available.

**13. Disposal considerations**

**Disposal methods:** Waste must be disposed of in accordance with federal, state, provincial and local regulations.  
**Contaminated Packaging:** Packaging material should be recycled or disposed of in accordance with federal, state and local regulations.

**14. Transport information****Domestic regulation**

**49 CFR**  
Not regulated as a dangerous good

**International Regulations**

**UNRTDG**  
Not regulated as a dangerous good

**IATA-DGR**  
Not regulated as a dangerous good  
Remarks : Not hazardous freight in air traffic (ICAO-TI / IATA-DGR).

**IMDG-Code**  
Not regulated as a dangerous good  
Remarks : Not classified as hazardous sea cargo (IMDG code)

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

Not applicable for product as supplied.

**15. Regulatory information****US Federal Regulations**

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

None present or none present in regulated quantities.

**US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)**

None present or none present in regulated quantities.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended**

None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4):**

None present or none present in regulated quantities.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**

Combustible dust

**US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances**

None present or none present in regulated quantities.

**US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting**

None present or none present in regulated quantities.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):**

None present or none present in regulated quantities.

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)**

Reportable Quantity not reasonably exceeded.

**US State Regulations**

**US. California Proposition 65**

No ingredient requiring a warning under CA Prop 65.

**Inventory Status:**

Australia Industrial Chem. Act (AIIC):	On or in compliance with the inventory	
Canada DSL Inventory List:	On or in compliance with the inventory	
China Inv. Existing Chemical Substances:	On or in compliance with the inventory	
Japan (ENCS) List:	On or in compliance with the inventory	
Korea Existing Chemicals Inv. (KECI):	E (special case)	Polymer Exemption under K-REACH. Valid only for specific importer.
New Zealand Inventory of Chemicals:	On or in compliance with the inventory	
Philippines PICCS:	On or in compliance with the inventory	
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory	Pre-registration is requested for specific importer.
US TSCA Inventory:	On or in compliance with the inventory	Commercial Status: Active
Switzerland New Subs Notified/Registered:	On or in compliance with the inventory	
EINECS, ELINCS or NLP:	On or in compliance with the inventory	EU-REACH compliant for

		Evonik Operations GmbH and its affiliates as EU manufacturer/EU importer.
--	--	---

**16. Other information, including date of preparation or last revision**
**HMIS Hazard ID**

<b>Health</b>		<b>1</b>
<b>Flammability</b>		<b>2</b>
<b>Physical Hazards</b>		<b>0</b>
<b>PERSONAL PROTECTION</b>		

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; \*Chronic health effect

**Issue Date:** 01/26/2021

**Version #:** 1.3

**Further Information:** No data available.

**Revision Information**

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

**Disclaimer:**

This information and any recommendations, technical or otherwise, are presented in good faith and believed to be correct as of the date prepared. Recipients of this information and recommendations must make their own determination as to its suitability for their purposes. In no event shall Evonik assume liability for damages or losses of any kind or nature that result from the use of or reliance upon this information and recommendations. EVONIK EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION AND RECOMMENDATIONS PROVIDED. Reference to any trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used. Evonik reserves the right to make any changes to the information and/or recommendations at any time, without prior or subsequent notice.