

## General Safety Data Sheet: Plastic Powders

**Applies to:** PLA, PCL, PEEK, PE, PP, PS, PMMA, PA (Nylon), PBS and related plastic powders.

**SDS Revision Date:** 14-May-2026

**Version:** 1.0

**Product Code:** POLY-VERSE-PWD-001 (General)

### 1. Identification

#### 1.1. Product identifier

**Product Name:** Plastic Powders – General Series

**Product Code:** POLY-VERSE-PWD-001

**Chemical Family:** Thermoplastic Polymers (various)

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

**Recommended Use:** Industrial raw material for injection molding, extrusion, 3D printing, fused deposition modeling, rotational molding, and other plastic processing applications.

**Uses Advised Against:** Any use not approved by the supplier. Not intended for medical implants unless specifically certified. Do not mix directly with strong oxidizing agents.

#### 1.3. Details of the supplier of the safety data sheet

**Company Name:** PolymerVerse

**Address:** 32 N Gould St., Sheridan, WY 82801, USA

**Contact Phone:** USA: 001-800-ACROS-01 / Europe: +32 14 57 52 11

**E-mail:** sales@magerial.com

#### 1.4. Emergency telephone number

USA: 001-800-ACROS-01 / Europe: +32 14 57 52 11

### 2. Hazard(s) identification

#### 2.1. Classification of the substance or mixture (in accordance with GHS)

Hazard Category	Classification
Flammable Solids	Category 1 or 2 (for finely divided powders such as PE, PP, PMMA, PS). PEEK is flame retardant but fine powder may still form combustible dust.
Combustible Dust	May form explosive dust-air mixtures.
STOT – Single Exposure (Category 3)	May cause respiratory irritation (H335).
STOT – Repeated Exposure (Category 1)	Causes damage to lungs (pneumoconiosis) through prolonged or repeated inhalation of dust (H372).

Serious Eye Damage/Eye Irritation (Category 2B)	Causes eye irritation (H320).
Hazardous to the Aquatic Environment (Category 3)	Harmful to aquatic life (H402).

## 2.2. GHS Label elements

Flame	Health Hazard	Exclamation Mark
Combustible dust hazard	Long-term lung damage risk	Respiratory/eye irritation

### Signal Word: **DANGER**

#### Hazard Statements (H-phrases):

- **H228:** Flammable solid (for certain fine powders).
- **H372:** Causes damage to lungs through prolonged or repeated exposure (inhalation of dust).
- **H335:** May cause respiratory irritation.
- **H320:** Causes eye irritation.
- **H402:** Harmful to aquatic life.

#### Precautionary Statements (P-phrases):

- **Prevention:** Keep away from heat, sparks, open flames, and other ignition sources. No smoking (P210). Use explosion-proof electrical, ventilating, and lighting equipment (P241). Avoid breathing dust (P261). Wear protective gloves, eye/face protection (P280).
- **Response:** IF INHALED: Remove person to fresh air and keep comfortable for breathing (P304+P340). Call a POISON CENTER or doctor if you feel unwell (P312). If eye irritation persists: Get medical advice/attention (P337+P313).
- **Storage:** Store locked up (P405).
- **Disposal:** Dispose of contents/container in accordance with local, regional, national, and international regulations (P501).

## 2.3. Other hazards

Finely divided plastic powders can form **explosive dust clouds** when dispersed in air in the presence of an ignition source. Thermal decomposition (during overheating or fire) may release toxic and irritating fumes, including carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), and volatile organic compounds. Polyamide (Nylon) may release hydrogen cyanide (HCN) when overheated.

## 3. Composition/information on ingredients

**Important Note:** This SDS applies to a range of plastic powders. The specific composition and CAS number for each product type are listed below. For batch-specific details, refer to the Certificate of Analysis (COA) or product-specific SDS.

General Product Name	Typical Chemical Identity	CAS Number (Typical)	Typical Concentration
<b>PLA Powder</b>	Poly lactide	26100-51-6	≥ 99.5%

<b>PCL Powder</b>	Polycaprolactone	24980-41-4	≥ 99.5%
<b>PEEK Powder</b>	Polyetheretherketone	29658-26-2	≥ 99.5%
<b>PE Powder</b>	Polyethylene	9002-88-4	≥ 99.5%
<b>PP Powder</b>	Polypropylene	9003-07-0	≥ 99.5%
<b>PS Powder</b>	Polystyrene	9003-53-6	≥ 99.5%
<b>PMMA Powder</b>	Polymethyl methacrylate	9011-14-7	≥ 99.5%
<b>PA (Nylon) Powder</b>	Polyamide-12 / Polyamide-11	25038-74-8	≥ 99.5%
<b>PBS Powder</b>	Polybutylene succinate	25736-86-6	≥ 99.5%

*If additives (e.g., pigments, stabilizers) are present, they typically constitute < 0.5%. Undisclosed trace impurities comply with regulatory requirements.*

## 4. First aid measures

### 4.1. Description of first aid measures

- **Inhalation:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
- **Skin Contact:** Wash with plenty of soap and water. Remove contaminated clothing.
- **Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses if present and easy to do. Get medical attention if irritation persists.
- **Ingestion:** Rinse mouth. Do NOT induce vomiting. Get medical attention if discomfort occurs.

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

Inhalation of dust may cause respiratory tract irritation. Prolonged or repeated overexposure may lead to lung damage (pneumoconiosis).

## 5. Fire-fighting measures

### 5.1. Extinguishing media

**Suitable Extinguishing Media:** Dry powder, carbon dioxide (CO<sub>2</sub>), water spray/fog, or foam. Use water spray to disperse dust and prevent dust clouds.

**Unsuitable Extinguishing Media:** Do not use a solid water jet (straight stream), as it can disperse and spread the dust, potentially creating an explosive dust cloud.

### 5.2. Special hazards arising from the substance or mixture

- **Dust Explosion Hazard:** Finely dispersed plastic powders can form explosive mixtures with air. A primary explosion can re-suspend dust, leading to a much more powerful secondary explosion.
- **Hazardous Decomposition Products:** Thermal decomposition or burning may produce: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), hydrocarbons, and toxic fumes. Polyamide (Nylon) may release **hydrogen cyanide (HCN)**.

### 5.3. Advice for fire-fighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing. Evacuate all personnel from the

danger area. Cool fire-exposed containers with water spray. Fight fire from a safe distance and upwind.

## 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

**For Non-Emergency Personnel:** Evacuate area immediately. Isolate immediate hazard area. Eliminate all ignition sources. Use only non-sparking tools.

**For Emergency Responders:** Wear full protective clothing and NIOSH-approved SCBA.

### 6.2. Environmental precautions

Prevent entry into drains, sewers, and waterways.

### 6.3. Methods and material for containment and cleaning up

**Do NOT dry sweep.** Use only an **explosion-proof vacuum cleaner** or **wet clean** (using water or a wetting agent) to minimize dust generation. Place collected material into a clean, closed, and labeled container. Avoid creating dust clouds.

## 7. Handling and storage

### 7.1. Precautions for safe handling

- **Technical Measures:** Use explosion-proof local exhaust ventilation and dust collection systems. Ensure all electrical equipment is rated for combustible dust (NFPA 70 Class II, Division 1 or 2).
- **Preventive Measures:** Use non-sparking tools. Bond and ground equipment to prevent static discharge.
- **Advice on Safe Handling:** Avoid formation of dust. Handle in closed, automated systems where possible.
- **Hygiene Measures:** Wash hands after handling. Do not eat, drink, or smoke in work areas.
- **Special Note for Bioplastics (PLA, PCL, PBS):** Avoid prolonged exposure to high temperature and high humidity to prevent degradation.

### 7.2. Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area in tightly closed original containers. **Isolate from:** Strong oxidizers, strong acids, and ignition sources. Use explosion-proof electrical systems in storage areas.

## 8. Exposure controls/personal protection

### 8.1. Control parameters

Component	Recommended Exposure Limit	Regulatory Limit (China GBZ 2.1)
Inhalable Plastic Dust	3 mg/m <sup>3</sup> (8-hour TWA)	1 mg/m <sup>3</sup> (PC-TWA)
Total Plastic Dust	10 mg/m <sup>3</sup> (8-hour TWA)	5 mg/m <sup>3</sup> (PC-TWA)

*No specific ACGIH or OSHA PEL has been established for most plastic powders. The above values are based on nuisance dust / particle not otherwise regulated (PNOR) limits.*

### 8.2. Exposure controls

- **Engineering Controls:** Provide adequate local exhaust ventilation and general ventilation to maintain airborne dust levels below the occupational exposure limits. Provide explosion-proof dust collection systems.

- **Respiratory Protection:** Wear an N95 or higher particulate respirator if airborne concentrations exceed exposure limits.
- **Hand Protection:** Wear protective gloves (nitrile or neoprene recommended).
- **Eye Protection:** Wear chemical safety goggles with side shields.
- **Skin and Body Protection:** Wear antistatic or flame-resistant work clothing. Use disposable coveralls to prevent dust accumulation.

## 9. Physical and chemical properties

Property	General Range / Typical Value
Appearance	White, off-white, or natural color fine powder or granules
Odor	Odorless or slight raw material odor
Particle Size	Variable (e.g., 80 mesh to 350 mesh) – refer to product TDS
Density	0.90 – 1.45 g/cm <sup>3</sup> (depending on material)
Melting Point	60 – 350°C (depending on material; PEEK > 340°C, PE ~130°C)
Decomposition Temperature	> 250°C for most materials; PEEK > 500°C
Solubility in Water	Insoluble
Volatile Organic Compounds (VOC)	None under normal conditions

## 10. Stability and reactivity

Property	Information
Reactivity	Stable under normal handling conditions.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions	None under normal use.
Conditions to avoid	High temperatures (near decomposition point), sparks, open flames, dust cloud formation.

Property	Information
Incompatible materials	Strong oxidizing agents, strong acids.
Hazardous decomposition products	Thermal decomposition (>250°C for most, >500°C for PEEK) may release: carbon monoxide (CO), carbon dioxide (CO <sub>2</sub> ), nitrogen oxides (NO <sub>x</sub> ), hydrocarbons. Polyamide (Nylon) may release hydrogen cyanide (HCN).

### 11. Toxicological information

Property	Information
Acute Toxicity	Expected to be low. LD50 > 5000 mg/kg (based on similar polymers).
Skin Corrosion/Irritation	Not classified. May cause mechanical irritation.
Serious Eye Damage/Irritation	May cause mechanical irritation (H320).
Respiratory or Skin Sensitization	Not classified. Dust may cause respiratory irritation.
Germ Cell Mutagenicity	Not classified.
Carcinogenicity	IARC: PVC (Group 3), Titanium Dioxide (Group 2B, if present). PLA, PCL, PEEK, PE, PP, PS, PMMA, PA, PBS are not classified as carcinogenic.
STOT – Single Exposure	May cause respiratory irritation (H335).
STOT – Repeated Exposure	Causes damage to lungs through prolonged or repeated inhalation of dust (H372). Prolonged overexposure may cause pneumoconiosis.
Aspiration Hazard	Not classified.

### 12. Ecological information

Property	Information
Toxicity	Low acute toxicity to aquatic life. Fine particles may cause physical harm.
Persistence and Degradability	Most plastics (PE, PP, PS, PMMA, PA, PEEK) are not readily biodegradable. PLA, PCL, PBS are biodegradable under industrial composting conditions.
Bioaccumulative potential	Not expected to bioaccumulate.
Mobility in soil	Low mobility (solid particles).
Other adverse effects	Avoid direct release into the environment. Contributes to microplastic pollution if released.

### 13. Disposal considerations

#### 13.1. Waste treatment methods

Dispose of in accordance with all local, state, federal, and international environmental regulations. **Recycling is recommended** where facilities exist. Do not allow dust to enter drains or watercourses.

### 14. Transport information

Regulation	Information
UN Number	UN1325 (for finely divided powders) or Not applicable (for larger granules)
Proper Shipping Name	Flammable solid, organic, n.o.s. (plastic powder) or Not regulated
Transport hazard class	4.1 (flammable solid) or Not applicable
Packing group	III or Not applicable
Marine pollutant	No
Special precautions	Avoid dust formation during transport. Ensure secure stowage.

**Note:** Many plastic powders in granular form (e.g., > 1mm) are not classified as dangerous goods for transport. Fine powders (< 100 mesh) are more likely to be classified as UN1325. Consult a dangerous goods professional for specific shipments.

**15. Regulatory information**

Regulation	Status
TSCA (USA)	Listed
EINECS (EU)	Listed
IECSC (China)	Listed
ENCS (Japan)	Listed
KECI (Korea)	Listed
AICS (Australia)	Listed
RoHS (EU)	Compliant
REACH (EU)	Compliant (SVHC < 0.1%)
California Proposition 65	Not known to contain any Prop 65 listed chemicals above safe harbor levels (in supplied form, without added pigments or fillers).

**16. Other information**
**Key/Legend:**

- **H228:** Flammable solid.
- **H320:** Causes eye irritation.
- **H335:** May cause respiratory irritation.
- **H372:** Causes damage to organs (lungs) through prolonged or repeated exposure (inhalation).
- **H402:** Harmful to aquatic life.

**Processing Note:** Always refer to the specific Technical Data Sheet (TDS) for material-specific processing parameters (temperatures, drying conditions, etc.). When processing at high temperatures (> 200°C), ensure adequate ventilation to avoid exposure to thermal decomposition products.

**Training Advice:** Personnel handling plastic powders should be trained in combustible dust hazards, proper use of personal protective equipment (PPE), and emergency procedures.

**Disclaimer:**

The information provided in this Safety Data Sheet is based on our current knowledge and is believed to be accurate as of the revision date. This SDS applies to the general series of plastic powders described in Section 3. It does not constitute a warranty or specification, nor does it replace product-specific SDS for modified or custom grades. Users should conduct their own testing to determine suitability for their specific applications. Processing recommendations are general guidelines; actual conditions may vary based on equipment, formulation, and specific product grade. The company shall not be held liable for any damages resulting from handling or from contact with the above product. It is the user's responsibility to comply with all applicable health, safety, and

---

environmental laws and regulations.

**SDS Revision Date:** 14-May-2026

**Prepared by:** PolymerVerse

**Version:** 1.0

---

**End of Safety Data Sheet**