1. Identification

Product identifier: V1R12Series

Other means of identification: None.

Recommended use: 3D Printing

Recommended restrictions: None known.

Manufacturer/Importer/Supplier/Distributor information:
HP Inc.
1501 Page Mill Road
Palo Alto, CA 94304-1112
United States

Telephone: 650-857-5020

HP Inc. health effects line
(Toll-free within the US) 1-800-457-4209
(Direct) 1-760-710-0048

HP Inc. Customer Care Line
(Toll-free within the US) 1-800-474-6836
(Direct) 1-208-323-2551

Email: hpcustomer.inquiries@hp.com

2. Hazard(s) identification

Physical hazards: Not classified.

Health hazards: Not classified.

Environmental hazards: Not classified.

OSHA defined hazards: Not classified.

Label elements:

Hazard symbol: None.

Signal word: Warning

Hazard statement: May form combustible dust concentrations in air.

Precautionary statement:

Prevention: Not available.

Response: Not available.

Storage: Not available.

Disposal: Not available.

Hazard(s) not otherwise classified (HNOC):
Contains high molecular weight polymer(s). Irritating to eyes, respiratory system and skin. Prolonged or repeated exposure may cause headache, drowsiness, nausea and weakness.

In the presence of an ignition source: Dust may form explosive mixture in air.

Supplemental information:
This material is considered hazardous under the OSHA Hazard Communication Standard criteria, based on hazard(s) not otherwise classified.

Processing may release vapors and/or fumes which cause eye, skin and respiratory tract irritation.

3. Composition/information on ingredients

Mixtures:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common name and synonyms</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proprietary polymer</td>
<td>Proprietary</td>
<td>&gt;= 98%</td>
<td></td>
</tr>
</tbody>
</table>
4. First-aid measures

**Inhalation**
If dust from the material is inhaled, remove the affected person immediately to fresh air.

Move to fresh air in case of accidental inhalation of vapors or decomposition products. If breathing is difficult, give oxygen. Oxygen or artificial respiration if needed. Consult a physician for specific advice.

**Skin contact**
Wash the skin immediately with soap and water. In case of contact with molten product, cool rapidly with water and seek immediate medical attention. Do not attempt to remove molten product from skin because skin will tear easily.

**Eye contact**
Dust: Wash well-open eyes immediately, abundantly and thoroughly with water. Remove particle remaining under the eyelids. If irritation persists, consult a doctor.

On contact with hot product: Cool eyes rapidly with cold water after contact with molten polymer. Consult an ophthalmologist immediately.

**Ingestion**
If swallowed, do NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

**Most important symptoms/effects, acute and delayed**
Not available.

5. Fire-fighting measures

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

**Unsuitable extinguishing media**
High volume water jet, fine dust dispersed in air may ignite, risk of dust explosion.

**Specific hazards arising from the chemical**
300 - 350 °C: possible formation of Monomer and oligomer (white fumes) Temperature exceeding 350°C; Thermal decomposition giving toxic and corrosive products ; Carbon monoxide, Ammonia, Amino derivatives Temperature exceeding 500 °C ; Formation of toxic products through combustion;. Carbon oxides, Hydrogen cyanide (hydrocyanic acid), (traces).

**Special protective equipment and precautions for firefighters**
Firefighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

**Fire fighting equipment/instructions**
Do not use a solid stream of water. A solid stream of water can cause a dust explosion. Fire fighting equipment should be thoroughly decontaminated after use.

**General fire hazards**
Dust clouds generated during handling and/or storage can form explosive mixtures with air. Check that all equipment is properly grounded and installed to satisfy electrical classification requirements. As with any dry material, pouring this material or allowing it to free-fall or to be conveyed through chutes or pipes can accumulate and generate electrostatic sparks, potentially causing ignition of the material itself, or of any flammable materials which may come into contact with the material or its container.

6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Keep away from sources of ignition - No smoking. Avoid inhalation of dust and contact with skin and eyes. Wear a dust mask and safety glasses/goggles if necessary. In case of inadequate ventilation, use respiratory protection. Implement workplace practices such that dusts are not allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.

**Methods and materials for containment and cleaning up**
Not available.

**Environmental precautions**
Avoid runoff into storm sewers and ditches which lead to waterways. Sweep or scoop up using non-sparking tools and place into suitable properly labeled containers for prompt disposal.

7. Handling and storage

**Precautions for safe handling**
Avoid contact with skin and eyes Avoid breathing dust. Prevent dust accumulation to minimize explosion hazard. Remove contaminated clothing and wash the skin thoroughly with soap and water after work.

**Conditions for safe storage, including any incompatibilities**
Store away from moisture and heat to maintain the technical properties of the product. Eliminate sources of ignition. Do not expose to heat or store above 60 C.

8. Exposure controls/personal protection

**Occupational exposure limits**
Also see Exposure guidelines.
### ACGIH

<table>
<thead>
<tr>
<th>Material</th>
<th>Type</th>
<th>Value</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1R12Series</td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>Respirable particles</td>
</tr>
<tr>
<td></td>
<td>Comments:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inhalable Particles</td>
<td>10 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Biological limit values</td>
<td>No biological exposure limits noted for the ingredient(s).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exposure guidelines</td>
<td>Particles Not Otherwise Specified / Nuisance Dust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>US OSHA (PEL:Z-1): 5 mg/m³ Respirable fraction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US OSHA (PEL:Z-1): 15 mg/m³ Total dust</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US OSHA (TWA:Z-3): 15 millions of particles per cubic foot of air Respirable fraction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US OSHA (TWA:Z-3): 50 millions of particles per cubic foot of air Total dust</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>US OSHA (TWA:Z-3): 5 mg/m³ Respirable fraction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriate engineering controls</td>
<td>Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Individual protection measures, such as personal protective equipment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye/face protection</td>
<td>Use good industrial practice to avoid eye contact. Processing of this product releases vapors or fumes which may cause eye irritation. Where eye contact may be likely, wear chemical goggles and have eye flushing equipment available.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skin protection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand protection</td>
<td>Wear protective gloves.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Processing of this product releases vapors or fumes which may cause skin irritation. It is a good industrial hygiene practice to minimize skin contact. Wash thoroughly after handling.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory protection</td>
<td>Avoid breathing dust. Avoid breathing processing fumes or vapors. Where airborne exposure is likely or airborne exposure limits are exceeded, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components and substances released during processing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thermal hazards</td>
<td>In thermal processing: Risk of skin burns. Wear appropriate thermal protective clothing, when necessary.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 9. Physical and chemical properties

**Appearance**

- **Physical state**: Not available.
- **Form**: Powder.
- **Color**: Transparent, Translucent.
- **Odor**: Not available.
- **Odor threshold**: Not available.
- **pH**: Not available.
- **Melting point/freezing point**: Not available.
- **Initial boiling point and boiling range**: 392 - 396 °F (200 - 202.22 °C)
- **Flash point**: Not available.
Evaporation rate Not available.
Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)
Not available.
Flammability limit - upper (%)
Not available.
Explosive limit - lower (%)
Not available.
Explosive limit - upper (%)
Not available.

Vapor pressure Not available.
Vapor density Not available.

Solubility(ies)
Solubility (water) Not available.

Partition coefficient (n-octanol/water)
Not available.

Auto-ignition temperature Not available.

Decomposition temperature > 662 °F (> 350 °C)

Viscosity Not available.

Other information
Explosive properties Dusts might form explosive mixtures with air.

10. Stability and reactivity

Reactivity Not available.
Chemical stability The product is stable under normal handling and storage conditions.
Possibility of hazardous reactions Will not occur.
Conditions to avoid Store away from moisture and heat to maintain the technical properties of the product. Remove all sources of ignition.
Incompatible materials Strong acids. and Oxidizing agents.

Hazardous decomposition products Thermal decomposition: Decomposition temperature: > 350 °C 300 - 350 °C: possible formation of; Monomer and oligomer (white fumes) Temperature exceeding 350°C; Thermal decomposition giving toxic and corrosive products :, Carbon monoxide, Ammonia, Amino derivatives Temperature exceeding 500 °C :, Formation of toxic products through combustion:, Carbon oxides, Hydrogen cyanide (hydrocyanic acid), (traces).

11. Toxicological information

Information on likely routes of exposure
Inhalation At high temperature, products of thermal decomposition can be irritating to respiratory system.
Skin contact May be considered as comparable to a similar product for which experimental results are: Non irritating to skin.
Eye contact May be considered as comparable to a similar product for which experimental results are: Not irritating to the eyes.
Ingestion May be considered as comparable to a similar product for which experimental results are: Slightly harmful by ingestion.

Symptoms related to the physical, chemical and toxicological characteristics
Not available.

Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.
Skin corrosion/irritation Based on available data, the classification criteria are not met.
Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitization
Respiratory sensitization Based on available data, the classification criteria are not met.
Skin sensitization Based on available data, the classification criteria are not met.
<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germ cell mutagenicity</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>IARC Monographs. Overall Evaluation of Carcinogenicity</td>
<td>Not listed.</td>
</tr>
<tr>
<td>US National Toxicology Program (NTP) Report on Carcinogens</td>
<td>Not listed.</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Specific target organ toxicity - single exposure</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Specific target organ toxicity - repeated exposure</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Further information</td>
<td>Complete toxicity data are not available for this specific formulation</td>
</tr>
</tbody>
</table>

### 12. Ecological information

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecotoxicity</td>
<td>No information available.</td>
</tr>
<tr>
<td>Persistence and degradability</td>
<td>Inert polymer, Not biodegradable on the basis of its structure.</td>
</tr>
<tr>
<td>Bioaccumulative potential</td>
<td>No data available.</td>
</tr>
<tr>
<td>Mobility in soil</td>
<td>Not available.</td>
</tr>
<tr>
<td>Other adverse effects</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

### 13. Disposal considerations

**Disposal instructions**
- Do not allow this material to drain into sewers/water supplies.
- Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

### 14. Transport information

**DOT**
- Not regulated as dangerous goods.

**IATA**
- Not regulated as dangerous goods.

**IMDG**
- Not regulated as dangerous goods.

**ADR**
- Not regulated as dangerous goods.

**Further information**
- Not a dangerous good under DOT, IATA, ADR, IMDG, or RID.

### 15. Regulatory information

**US federal regulations**
- **US EPA TSCA Inventory:** All chemical substances in this product comply with all rules or orders under TSCA.
- All ingredients are listed or exempt
- **US TSCA 12(b):** Does not contain listed chemicals.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**
- Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**
- Not listed.

**SARA 304 Emergency release notification**
- Not regulated.

- Not regulated.
Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance
Not listed.

SARA 311/312 Hazardous chemical
No

Other federal regulations
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List
Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
Not regulated.

Safe Drinking Water Act (SDWA)
Not regulated.

Regulatory information
All chemical substances in this HP product have been notified or are exempt from notification under chemical substances notification laws in the following countries: US (TSCA), EU (EINECS/ELINCS), Switzerland, Canada (DSL/NDSL), Australia, South Korea, New Zealand, and China.

16. Other information, including date of preparation or last revision

Issue date 30-Oct-2017
Revision date 09-Dec-2017
Version # 04

Other information
This SDS was prepared in accordance with USA OSHA Hazard Communications regulation (29 CFR 1910.1200).

Disclaimer
This Safety Data Sheet document is provided without charge to customers of HP. Data is the most current known to HP at the time of preparation of this document and is believed to be accurate. It should not be construed as guaranteeing specific properties of the products as described or suitability for a particular application. This document was prepared to the requirements of the jurisdiction specified in Section 1 above and may not meet regulatory requirements in other countries.

Revision information
Exposure controls/personal protection: Appropriate engineering controls
Regulatory information: Regulatory information
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service</td>
</tr>
<tr>
<td>CERCLA</td>
<td>Comprehensive Environmental Response Compensation and Liability Act</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>COC</td>
<td>Cleveland Open Cup</td>
</tr>
<tr>
<td>DOT</td>
<td>Department of Transportation</td>
</tr>
<tr>
<td>EPCRA</td>
<td>Emergency Planning and Community Right-to-Know Act (aka SARA)</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety and Health</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
</tr>
<tr>
<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
</tr>
<tr>
<td>REC</td>
<td>Recommended</td>
</tr>
<tr>
<td>REL</td>
<td>Recommended Exposure Limit</td>
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<tr>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act of 1986</td>
</tr>
<tr>
<td>STEL</td>
<td>Short-Term Exposure Limit</td>
</tr>
<tr>
<td>TCLP</td>
<td>Toxicity Characteristics Leaching Procedure</td>
</tr>
<tr>
<td>TLV</td>
<td>Threshold Limit Value</td>
</tr>
<tr>
<td>TSCA</td>
<td>Toxic Substances Control Act</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compounds</td>
</tr>
</tbody>
</table>