1. Identification

Product identifier: V1R11Series

Other means of identification:
- Synonyms: HR PA-12 GB Powder

 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)
- May form combustible dust concentrations in air.
- Risk of skin burns caused by hot melt.

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

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>Polyamide, Modified Polymer*</td>
<td>Proprietary*</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Material name: V1R11Series

SDS US

14388   Version #: 02   Revision date: 09-Dec-2017   Issue date: 27-Nov-2017
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. Continue to rinse for at least 15 minutes. Get medical attention 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

Indication of immediate medical attention and special treatment needed

General information

5. Fire-fighting measures

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

Unsuitable extinguishing media
Do not use water jet.

Specific hazards arising from the chemical
May be released in case of fire: carbon monoxide, carbon dioxide, nitric oxides, organic products of decomposition. Under certain fire conditions, traces of other toxic products may occur.

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

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
In case product dust is released: Dust mask

Methods and materials for containment and cleaning up
Sweep up or vacuum up spillage and collect in suitable container for disposal. If a vacuum is used, the motor must be rated as dust explosion-proof. Dispose of in compliance with federal, state, and local regulations.

Environmental precautions
Prevent further leakage or spillage. Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

7. Handling and storage

Precautions for safe handling
Avoid dust formation.
Provide for appropriate exhaust ventilation and dust collection at machinery.
In thermal processing: Risk of skin burns.

Conditions for safe storage, including any incompatibilities
Keep containers tightly closed in a dry, cool and well-ventilated place.
Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations.
If dusts are formed: Take precautionary measures against static charges, keep away from sources of ignition.
Ground container and transfer equipment to eliminate static electric sparks.
Stable under recommended storage conditions.
8. Exposure controls/personal protection

Occupational exposure limits
Also see Exposure guidelines.

<table>
<thead>
<tr>
<th>Material</th>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>V1R11Series</td>
<td>TWA</td>
<td>10 mg/m³</td>
</tr>
</tbody>
</table>

**Comments:** Inhalable particles

**Biological limit values**
No biological exposure limits noted for the ingredient(s).

**Exposure guidelines**

- ACGIH (TWA/TLV): 3 mg/m³ (Respirable Particulate)
- US CA OEL (TWA/PEL): 10 mg/m³ (Total dust)
- US CA OEL (TWA/PEL): 5 mg/m³ (Respirable fraction)
- US OSHA (TWA:Z-3): 50 millions of particles per cubic foot of air (Total dust)
- US OSHA (TWA:Z-3): 15 millions of particles per cubic foot of air (Respirable fraction)
- US OSHA (TWA:Z-3): 5 mg/m³ (Respirable fraction)
- US OSHA (TWA:Z-3): 15 mg/m³ (Total dust)

Glass, oxide, chemicals

- ACGIH (TWA/TLV): 1 fibers/cm³ (Fiber) F: Respirable fibers: length > 5 micrometers; aspect ratio >= 3:1, as determined by the membrane filter method at 400-450X magnification (4-mm objective), using phase-contrast illumination.
- US CA OEL (TWA/PEL): .2 fibers/cm³ (Fiber)

**Appropriate engineering controls**

In case of thermal processing, provide for extraction of the vapors 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**
    Wear impermeable gloves. Protective heat-insulating gloves are to be used during thermal processing. 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.
  - **Other**
    Contact with skin and eyes may result in irritation. It is a good industrial hygiene practice to minimize skin contact. Wash promptly with soap and water if skin becomes contaminated.

- **Respiratory protection**
  Avoid breathing dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Respiratory protection programs must comply with 29 CFR § 1910.134.

- **Thermal hazards**
  In thermal processing: Risk of skin burns Wear appropriate thermal protective clothing, when necessary.

- **General hygiene considerations**
  Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

- **Appearance**
  Powder.
  Solid.

- **Physical state**
  Not available.

- **Form**
  Powder.

- **Color**
  Grey to white.

- **Odor**
  Odorless.

- **Odor threshold**
  Not available.

- **pH**
  Not available.

- **Melting point/freezing point**
  363.2 - 368.6 °F (184 - 187 °C)
Initial boiling point and boiling range
Not available.

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
Not explosive. Dusts might form explosive mixtures with air.

Flammability (flash back)
This product is not flammable.

Oxidizing properties
Not oxidizing.

10. Stability and reactivity
Reactivity
Under normal conditions: stable.

Chemical stability
The product is stable under normal handling and storage conditions.

Possibility of hazardous reactions
Will not occur.

Conditions to avoid
Keep away from heat, spark, open flames and other sources of ignition.

Incompatible materials
None known.

Hazardous decomposition products
Decomposition products on thermal decomposition, carbon monoxide, carbon dioxide, Nitrogen oxides (NOx), organic products of decomposition.

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.
- **Germ cell mutagenicity**: Based on available data, the classification criteria are not met.
- **Carcinogenicity**: Based on available data, the classification criteria are not met.

**IARC Monographs. Overall Evaluation of Carcinogenicity**
Not listed.

Not regulated.

**US. National Toxicology Program (NTP) Report on Carcinogens**
Not listed.

- **Reproductive toxicity**: Based on available data, the classification criteria are not met.
- **Specific target organ toxicity - single exposure**: Based on available data, the classification criteria are not met.
- **Specific target organ toxicity - repeated exposure**: Based on available data, the classification criteria are not met.
- **Aspiration hazard**: Based on available data, the classification criteria are not met.

**Further information**
Complete toxicity data are not available for this specific formulation.

### 12. Ecological information

- **Ecotoxicity**: No information available.
- **Persistence and degradability**: Not available.
- **Bioaccumulative potential**: No data available.
- **Mobility in soil**: Not available.
- **Other adverse effects**: Not available.

### 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.
  - **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: 27-Nov-2017
Revision date: 09-Dec-2017
Version #: 02

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
### Explanation of abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</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>
</tr>
<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>