SAFETY DATA SHEET

1. Identification

Product identifier V1Q81Series
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 None.
Hazard statement Not available.
Precautionary statement Prevention Not available.
Response Not available.
Storage Not available.
Disposal Not available.
Hazard(s) not otherwise classified (HNOC) Complete toxicity data are not available for this specific formulation.
Potential routes of overexposure to this product are skin and eye contact. Inhalation of vapor and ingestion are not expected to be significant routes of exposure for this product under normal use conditions.

Supplemental information This product is not classified as hazardous according to OSHA CFR 1910.1200 (HazCom 2012).

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>Water</td>
<td></td>
<td>7732-18-5</td>
<td>50-60</td>
</tr>
<tr>
<td>2-pyrrolidone</td>
<td></td>
<td>616-45-5</td>
<td>&lt;20</td>
</tr>
</tbody>
</table>
### 4. First-aid measures

**Inhalation**
Move to fresh air. If symptoms persist, get medical attention.

**Skin contact**
Wash affected areas thoroughly with mild soap and water. Get medical attention if irritation develops or persists.

**Eye contact**
Do not rub eyes. Immediately flush with large amounts of clean, warm water (low pressure) for at least 15 minutes or until particles are removed. If irritation persists get medical attention.

**Ingestion**
If ingestion of a large amount does occur, seek medical attention.

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

### 5. Fire-fighting measures

**Suitable extinguishing media**
Dry chemical, CO2, water spray or regular foam.

**Unsuitable extinguishing media**
None known.

**Specific hazards arising from the chemical**
None known.

**Special protective equipment and precautions for firefighters**
Not available.

**Specific methods**
None established.

### 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedures**
Wear appropriate personal protective equipment.

**Methods and materials for containment and cleaning up**
Dike the spilled material, where this is possible. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using pumps.

**Environmental precautions**
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 contact with skin, eyes and clothing.

**Conditions for safe storage, including any incompatibilities**
Keep out of the reach of children. Keep away from excessive heat or cold.

### 8. Exposure controls/personal protection

**Occupational exposure limits**
This mixture has no ingredients that have PEL, TLV, or other recommended exposure limit.

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

**Exposure guidelines**
Exposure limits have not been established for this product.

**Appropriate engineering controls**
Use in a well ventilated area.

**Individual protection measures, such as personal protective equipment**
- **Eye/face protection**
  Not available.
- **Skin protection**
  - **Hand protection**
    Not available.
  - **Other**
    Not available.
- **Respiratory protection**
  Not available.
- **Thermal hazards**
  Not available.

**General hygiene considerations**
Handle in accordance with good industrial hygiene and safety practice.

### 9. Physical and chemical properties

**Appearance**
- **Physical state**
  Not available.
- **Form**
  Not available.

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Material name: V1Q81Series
14150 Version #: 01 Issue date: 09-Jul-2018
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>Not available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>6.6</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Not available</td>
</tr>
<tr>
<td>Flash point</td>
<td>269.6 °F (132.0 °C) Pensky-Martens Closed Cup</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td></td>
</tr>
<tr>
<td>Flammability limit - lower (%)</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability limit - upper (%)</td>
<td>Not available</td>
</tr>
<tr>
<td>Explosive limit - lower (%)</td>
<td>Not available</td>
</tr>
<tr>
<td>Explosive limit - upper (%)</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td></td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>Not available</td>
</tr>
<tr>
<td>Partition coefficient (n-octanol/water)</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
<tr>
<td>Other information</td>
<td>For other VOC regulatory data/information see Section 15.</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>Not determined</td>
</tr>
<tr>
<td>VOC</td>
<td>&lt; 229 g/l EPA Method 24</td>
</tr>
</tbody>
</table>

### 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>Not available</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>Stable under recommended storage conditions.</td>
</tr>
<tr>
<td>Possibility of hazardous reactions</td>
<td>Will not occur.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Not available</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>Incompatible with strong bases and oxidizing agents.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Upon decomposition, this product may yield gaseous nitrogen oxides, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.</td>
</tr>
</tbody>
</table>

### 11. Toxicological information

#### Information on likely routes of exposure

- **Inhalation**: Inhalation may result in mild irritation to the respiratory system.
- **Skin contact**: Contact with skin may result in mild irritation.
- **Eye contact**: Contact with eyes may result in mild irritation.
- **Ingestion**: Ingestion is not a likely route of exposure.

#### 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.
## 2-pyrrolidone (CAS 616-45-5)

### Acute
- **Oral**
  - **LD50**
    - Rat: > 5000 mg/kg

### 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.

#### OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
- 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

<table>
<thead>
<tr>
<th>Components</th>
<th>Species</th>
<th>Test Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-pyrrolidone (CAS 616-45-5)</td>
<td><strong>Aquatic</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crustacea</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>EC50</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water flea (Daphnia pulex)</td>
<td>13.21 mg/l, 48 hours</td>
</tr>
</tbody>
</table>

### Persistence and degradability
- Not available.

### Bioaccumulative potential
- Not available.

| Partition coefficient n-octanol / water (log Kow) | 2-pyrrolidone | -0.85 |

### Mobility in soil
- Not available.

### Other adverse effects
- Not available.

## 13. Disposal considerations

### Disposal instructions
- Do not dispose of together with general office waste. Do not allow this material to drain into sewers/water supplies.
- Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.
- Ensure collection and disposal with an appropriately licensed waste contractor.

## 14. Transport information

### DOT
- Not regulated as dangerous goods.

### IATA
- Not regulated as dangerous goods.

### IMDG
- Not regulated as dangerous goods.
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.
- TSCA Section 5(a)(2) Significant New Use Rules: This product contains Cesium Tungsten Oxide (CAS 52350-17-1) which is subject to a Significant New Use Rule at 40 CFR 721.10168.

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.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)
- Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)
- 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.

US state regulations
- Not Listed

Other information
- VOC content (less water, less exempt compounds) = <848 g/L (U.S. requirement, not for emissions)
- VOC data based on formulation (Organic compounds minus solids)

Regulatory information
- The components of this product are reported in the following inventories: United States of America, European Union, Switzerland, Canada, Australia, Japan, Korea, New Zealand, and China.

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

Issue date
- 09-Jul-2018

Version #
- 01

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
- 1. Product and Company Identification: Alternate Trade Names
- 3. Composition / Information on Ingredients: Disclosure Overrides
- Regulatory information: Regulatory information
### Explanation of abbreviations

<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>
</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>