



# MATERIAL SAFETY DATA SHEET

## 1. Chemical product and company identification

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|--|---|--|
| <b>Important information</b>                     | *** This Safety Data Sheet is only authorised for use by HP for HP Original products. Any unauthorised use of this Safety Data Sheet is strictly prohibited and may result in legal action being taken by HP. *** |  |
| <b>A. Product name</b>                           | C4991Series   |  |
| <b>Other means of identification</b>             |   |  |
| <b>Product Code</b>                              | DJ  |  |
| <b>B. Recommended use and Limitations on use</b> |   |  |
| <b>Recommended use</b>                           | Inkjet printing   |  |
| <b>C. Supplier information</b>                   |   |  |
|  | HP Korea House<br>23-6 Yoido-dong<br>Youngdeungpo-gu<br>Seoul 150-742, Korea  |  |
| <b>Telephone</b>                                 | (02) 2199-0114  |  |
| <b>HP Inc. health effects line</b>               |   |  |
| (Toll-free within the US)                        | 1-800-457-4209  |  |
| (Direct)   | 1-760-710-0048  |  |
| <b>HP Inc. Customer Care Line</b>                |   |  |
| (Toll-free within the US)                        | 1-800-474-6836  |  |
| (Direct)   | 1-208-323-2551  |  |
| <b>Email:</b>                                    | hpcustomer.inquiries@hp.com   |  |

## 2. Hazards identification

### A. Hazard category/Classification

|                              |   |             |
|------------------------------|---|-------------|
| <b>Physical hazards</b>      | Not classified.                                     |             |
| <b>Health hazards</b>        | Reproductive toxicity (fertility, the unborn child) | Category 1B |
| <b>Environmental hazards</b> | Not classified.                                     |             |

### B. Warning label items including precautionary statement

#### • Pictogram



• **Signal word** Danger

#### • Hazard statement

H360 May damage fertility or the unborn child.

#### • Precautionary statement

##### Prevention

P280 Wear protective gloves/protective clothing/eye protection.  
P202 Do not handle until all safety precautions have been read and understood.  
P201 Obtain special instructions before use.

##### Response

P308 + P313 IF exposed or concerned: Get medical advice/attention.

##### Storage

P405 Store locked up.

##### Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**C. Other hazards not included in the hazard category criteria (e.g. dust explosion hazard)**

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**

2-pyrrolidone: Specific Concentration Limits, Reproductive toxicity Category 1B, fertility or the unborn child 3%. Mixture classification threshold based on data related to developmental toxicity in animals. No adverse effects on sexual function or damage to fertility have been observed in an animal study. See Section 11.

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### 3. Composition/information on ingredients

| Chemical identity | Common and alternative names | CAS number | ID number | Content in percent (%) |
|-------------------|------------------------------|------------|-----------|------------------------|
| Water             |                              | 7732-18-5  | KE-35400  | 80-90                  |
| 2-pyrrolidone     |                              | 616-45-5   | KE-29978  | <5                     |

**Composition comments**

This ink supply contains an aqueous ink formulation.

2-pyrrolidone: Specific Concentration Limit 3%. Mixture classification threshold based on data related to developmental toxicity in animals. No adverse effects on sexual function or damage to fertility have been observed in an animal study. See Section 11.

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### 4. First aid measures

**A. In case of 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.

**B. In case of skin contact**

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

**C. In case of inhalation**

Remove to fresh air. If symptoms persist, get medical attention.

**D. In case of swallowing**

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

**E. Note to physician**

Not available.

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### 5. Fire-fighting measures

**A. Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media**

Dry chemical, CO2, water spray or regular foam.

**Unsuitable extinguishing media**

None known.

**B. Specific hazards arising from the chemical (example: hazardous combustion products)**

Not available.

**C. Specific methods of fire-fighting**

Not available.

**Specific methods**

None established.

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### 6. Accidental release measures

**A. Personal precautions, protective equipment and emergency measures**

Wear appropriate personal protective equipment.

**B. Environmental precautions**

Do not let product enter drains. Do not flush into surface water or sanitary sewer system.

**C. 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.

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### 7. Handling and storage

**A. Precautions for safe handling**

Avoid contact with skin, eyes and clothing.

**B. Conditions for safe storage (including any incompatibilities)**

Keep out of the reach of children. Keep away from excessive heat or cold.

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### 8. Exposure controls/personal protection

**A. Exposure limit values, biological limit values, etc**

No exposure limits noted for ingredient(s).

|  |   |
|--|---|
| <b>Biological limit values</b>             | No biological exposure limits noted for the ingredient(s).  |
| <b>Exposure guidelines</b>                 | Exposure limits have not been established for this product.   |
| <b>B. Appropriate engineering controls</b> | Use in a well ventilated area.<br>Provide adequate ventilation.   |
| <b>C. Personal protective equipment</b>    |   |
| • <b>Respiratory protection</b>            | For use other than intended use (such as in the event of a large spill), goggles and respirators may be required. |
| • <b>Eye protection</b>                    | Not required under intended use.  |
| • <b>Hand protection</b>                   | Not available.  |
| • <b>Body protection</b>                   | Use personal protective equipment to minimize exposure to skin and eye.   |
| <b>Hygiene measures</b>                    | Handle in accordance with good industrial hygiene and safety practice.  |

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## 9. Physical and chemical properties

|   |  |
|---|--|
| <b>A. Appearance</b>  |  |
| <b>Physical state</b>   | Liquid.  |
| <b>Form</b>   | Not available.                                   |
| <b>Color</b>  | Cyan   |
| <b>B. Odor</b>  | Not available.                                   |
| <b>C. Odor threshold</b>  | Not available.                                   |
| <b>D. pH</b>  | 7 - 8  |
| <b>E. Melting point/freezing point</b>                            | Not available.                                   |
| <b>F. Boiling point, initial boiling point, and boiling range</b> | Not determined                                   |
| <b>G. Flash point</b>   | > 200.0 °F (> 93.3 °C) Pensky-Martens Closed Cup |
| <b>H. Evaporation rate</b>  | Not determined                                   |
| <b>I. Flammability (solid, gas)</b>                               | Not available.                                   |
| <b>J. Upper/lower limit on flammability or explosive limits</b>   |  |
| <b>Flammability limit - lower (%)</b>                             | Not determined                                   |
| <b>Flammability limit - upper (%)</b>                             | Not available.                                   |
| <b>Explosive limit - lower (%)</b>                                | Not available.                                   |
| <b>Explosive limit - upper (%)</b>                                | Not available.                                   |
| <b>K. Vapor pressure</b>  | Not determined                                   |
| <b>L. Solubility</b>  |  |
| <b>Solubility (water)</b>   | Soluble in water                                 |
| <b>M. Vapor density</b>   | >= 1 (air = 1.0)                                 |
| <b>N. Specific gravity</b>  | Not available.                                   |
| <b>O. n-octanol/water partition coefficient</b>                   | Not available.                                   |
| <b>P. Auto-ignition temperature</b>                               | Not available.                                   |
| <b>Q. Decomposition temperature</b>                               | Not available.                                   |
| <b>R. Viscosity</b>   | Not available.                                   |
| <b>S. Molecular weight</b>  | Not available.                                   |
| <b>Other data</b>   |  |
| <b>Oxidizing properties</b>                                       | Not determined                                   |
| <b>Percent volatile</b>   | 4 % estimated                                    |
| <b>VOC</b>  | < 143 g/l  |

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## 10. Stability and reactivity

|  |  |
|--|--|
| <b>A. Stability and hazardous reaction potential</b>                           |  |
| <b>Stability</b>   | Stable under recommended storage conditions. |
| <b>Hazardous reaction potential</b>  | Will not occur.                              |
| <b>B. Conditions to avoid (e.g. static discharge, shock or vibration, etc)</b> | Not available.                               |

|  |   |
|--|---|
| <b>C. Incompatible materials</b>           | Incompatible with strong bases and oxidizing agents.  |
| <b>D. Hazardous decomposition products</b> | Upon decomposition, this product may yield gaseous nitrogen oxides, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. |

## 11. Toxicological information

### A. Information on likely routes of exposure

- **Respiratory organs** Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
- **Skin** Contact with skin may result in mild irritation.
- **Eyes** Contact with eyes may result in mild irritation.
- **Mouth** Health injuries are not known or expected under normal use.

### B. Information on health hazards

- **Acute toxicity (list all possible routes of exposure)** Based on available data, the classification criteria are not met.

| Components  | Species  | Test Results |
|---|--|--------------|
| 2-pyrrolidone (CAS 616-45-5)                                |  |              |
| <b>Acute</b>  |  |              |
| <b>Oral</b>   |  |              |
| LD50  | Rat  | > 5000 mg/kg |
| • <b>Corrosivity or irritation to the skin</b>              | Based on available data, the classification criteria are not met.  |              |
| • <b>Serious eye damage/eye irritation</b>                  | Based on available data, the classification criteria are not met.  |              |
| • <b>Respiratory sensitization</b>                          | Based on available data, the classification criteria are not met.  |              |
| • <b>Skin sensitization</b>                                 | Based on available data, the classification criteria are not met.  |              |
| • <b>Carcinogenic properties /Carcinogenicity</b>           | Based on available data, the classification criteria are not met.  |              |
| • <b>Mutagenic properties /Mutagenicity</b>                 | Based on available data, the classification criteria are not met.  |              |
| • <b>Reproductive toxicity</b>                              | May damage fertility or the unborn child.  |              |
|   | 2-pyrrolidone: This component showed developmental effects only at high doses that were toxic to pregnant test animals (OECD Testing Guideline 414: Prenatal Developmental Toxicity Study). Uptake by people of small doses is not expected to cause developmental toxicity. This component has not caused adverse effects on sexual function or damage to fertility in an animal study (OECD Testing Guideline 443: Extended One-Generation Reproductive Toxicity Study). |              |
| • <b>Specific target organ toxicity - single exposure</b>   | Based on available data, the classification criteria are not met.  |              |
| • <b>Specific target organ toxicity - repeated exposure</b> | Based on available data, the classification criteria are not met.  |              |
| • <b>Aspiration hazard</b>                                  | Based on available data, the classification criteria are not met.  |              |

## 12. Ecological information

### A. Ecotoxicity

| Product                      | Species | Test Results   |
|------------------------------|---------|--|
| C4991Series                  |         |  |
| <b>Aquatic</b>               |         |  |
| <i>Acute</i>                 |         |  |
| Fish                         | LC50    | Fathead minnow ( <i>Pimephales promelas</i> ) > 750 mg/l, 96 hours |
| Components                   | Species | Test Results   |
| 2-pyrrolidone (CAS 616-45-5) |         |  |
| <b>Aquatic</b>               |         |  |
| Crustacea                    | EC50    | Water flea ( <i>Daphnia pulex</i> ) 13.21 mg/l, 48 hours           |

**B. Persistence/degradability** Not available.

### C. Bioaccumulative potential

**Octanol/water partition coefficient log Kow**  
2-pyrrolidone -0.85

**D. Mobility in soil** Not available.

E. Other adverse effects Not available.

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### 13. Disposal considerations

**A. Method of disposal** Do not allow this material to drain into sewers/water supplies. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations. Dispose of in compliance with federal, state, and local regulations.

**B. Disposal considerations (including disposal of contaminated containers or packaging)** Not available.

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### 14. Transport information

#### DOT

**UN number** Not available.  
**UN proper shipping name** Not Regulated  
**Transport hazard class(es)**  
**Class** Not available.  
**Subsidiary risk** -  
**Packing group** Not available.  
**Environmental hazards**  
**Marine pollutant** No  
**Special precautions for user** Not available.

#### IATA

**UN number** Not available.  
**UN proper shipping name** Not Regulated  
**Transport hazard class(es)**  
**Class** Not available.  
**Subsidiary risk** -  
**Packing group** Not available.  
**Environmental hazards** No  
**Special precautions for user** Not available.

#### IMDG

**UN number** Not available.  
**UN proper shipping name** Not Regulated  
**Transport hazard class(es)**  
**Class** Not available.  
**Subsidiary risk** -  
**Packing group** Not available.  
**Transport hazard class(es)**  
**Marine pollutant** No  
**EmS** Not available.  
**Special precautions for user** Not available.

#### ADR

**UN number** Not available.  
**UN proper shipping name** Not Regulated  
**Transport hazard class(es)**  
**Class** Not available.  
**Subsidiary risk** -  
**Hazard No. (ADR)** Not available.  
**Tunnel restriction code** Not available.  
**Packing group** Not available.  
**Environmental hazards** No  
**Special precautions for user** Not available.

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

Transport in bulk according to Annex II of MARPOL73/78 and the IBC code: Not applicable.

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### 15. Regulatory information

#### A. Restrictions under the Industrial Safety and Health Law

##### Harmful Substances Prohibited from Manufacturing

Not regulated.

##### Harmful Substances Requiring Permission for Manufacture or Use

Not regulated.

**Controlled Hazardous Substances**

Not regulated.

**Harmful Substances Requiring Special Medical Examination**

Not regulated.

**Workplace Environmental Monitoring Harmful Materials**

Not regulated.

**Occupational Exposure Limit**

Not regulated.

**B. Restrictions under the Chemicals Control Law (Previously Toxic Chemicals Control Law)**

**Accidental Release Prevention Substances**

Not regulated.

**Act on the Registration and Evaluation of Chemicals**

**Banned Toxic Chemicals**

Not regulated.

**Designated Existing Chemicals Subject to Registration (PEC) (MoE No. 2015-92)**

Not listed.

**Restricted Chemical Substances**

Not regulated.

**Toxic Chemicals**

Not regulated.

**C. Restrictions under the Dangerous Substance Safety Management Act**

**D. Restrictions under the Wastes Control Act**

**Halogenated Materials in Waste Organic Solvents**

Not regulated.

**Hazardous Substances**

Not regulated.

**E. Restrictions under other foreign or domestic laws**

**Clean Air Conservation Act**

**Air Pollutants**

Not regulated.

**Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides (Rules on PIC, MoE No. 2014-252, Dec. 31, 2014; Standards for Pesticides, RDA No. 2014-26), as amended**

Not listed.

**Specific Air Pollutants**

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, Japan, Philippines, South Korea, New Zealand, and China.

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**16. Other information**

|  |                           |
|--|---------------------------|
| <b>A. Source of information</b>                                | Not available.            |
| <b>B. Issue date</b>   | 11-Jun-2015               |
| <b>C. Number of revisions and date of most recent revision</b> | 28-May-2020 (12 revision) |
| <b>D. Other</b>  | Not available.            |

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**Revision information**

1. Product and Company Identification: Alternate Trade Names

**Explanation of abbreviations**

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