MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name CN052Series

Version # 03

Issue date 18-Jan-2012

Revision date 20-Jan-2014

Product use Inkjet printing

CAS # Mixture

Company identification

Hewlett-Packard Company
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2. Hazards Identification

Emergency overview Contact with skin and eyes may result in irritation.

Potential health effects

Skin Avoid contact with skin Contact with skin may result in irritation. Contact with skin may result in severe irritation and Contact with skin may result in irritation and Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash) and Substance can be absorbed through the skin in harmful amounts.

Inhalation Inhalation may result in respiratory irritation. Inhalation may result in respiratory irritation. Inhalation may result in respiratory irritation. Inhalation may result in respiratory irritation. Inhalation may result in respiratory irritation. Inhalation may result in respiratory irritation.

Other hazards 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. Complete toxicity data are not available for this specific formulation

3. Composition / Information on Ingredients

Hazardous components	CAS #	Percent
2-pyrrolidone	616-45-5	< 7.5
Non-hazardous components	**CAS #**	**Percent**
Water	7732-18-5	> 65
1-(2-hydroxyethyl)-2-pyrrolidone	3445-11-2	< 10
Aliphatic diol	Proprietary	< 5
Tetraethylene glycol	112-60-7	< 5
Yellow Colorant	Proprietary	< 5

Composition comments This ink supply contains an aqueous ink formulation.
This product has been evaluated using criteria specified in 29 CFR 1910.1200 (Hazard Communication Standard).

4. First Aid Measures

General advice No information

First aid procedures

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.

Skin contact Wash affected areas thoroughly with mild soap and water. If irritation persists get medical attention.

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

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

5. Fire Fighting Measures

Flammable properties None known.

Extinguishing media

Suitable extinguishing media For small (incipient) fires, use media such as foam, sand, dry chemical, or carbon dioxide.
For large fires use very large (flooding) quantities of water and/or foam, applied as a mist or spray.

Unsuitable extinguishing media None known.

Fire fighting equipment/instructions Not available.

Specific methods None established.

Hazardous combustion products Refer to section 10.

6. Accidental Release Measures

Personal precautions Wear appropriate personal protective equipment.

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

Other information Soak up with inert absorbent material. Slowly vacuum or sweep the material into a bag or other sealed container. Dispose of in compliance with federal, state, and local regulations. See also section 13 Disposal considerations.

7. Handling and Storage

Handling Avoid contact with skin, eyes and clothing.

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

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. AIHA Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
1,6-hexanediol (CAS Proprietary)	TWA	10 mg/m3

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

Engineering controls Use in a well ventilated area.

Personal protective equipment

General Use personal protective equipment to minimize exposure to skin and eye.

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

9. Physical & Chemical Properties

Appearance Not available.

Physical state Liquid.

Form Not available.

Color Yellow

Odor Not available.

pH 8.5 - 9.1

	8.8 - 9.1
Vapor pressure	Not available.
Boiling point	Not available.
Melting point/Freezing point	Not available.
Solubility (water)	Not available.
Specific gravity	Not available.
Flash point	> 212.00 °F (> 100.00 °C) Pensky-Martens Closed Cup US EPA Method 1020
Viscosity	3.2 - 3.3 cP
VOC	< 297 g/L
Other information	For other VOC regulatory data/information see Section 15.

10. Chemical Stability & Reactivity Information

Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	No information available
Incompatible materials	Incompatible with strong bases and oxidizing agents.
Hazardous decomposition products	Upon decomposition, this product may yield gaseous nitrogen oxides, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.
Possibility of hazardous reactions	Will not occur.

11. Toxicological Information

Toxicological data

Components	Species	Test Results
2-pyrrolidone (CAS 616-45-5)		
Acute		
Oral		
LD50	Guinea pig	6500 mg/kg
	Rat	6500 mg/kg
Aliphatic diol (CAS Proprietary)		
Acute		
Dermal		
LD50	Rabbit	> 10000 mg/kg
Oral		
LD50	Rat	3730 mg/kg
Other		
LD50	Mouse	1738 mg/kg
Tetraethylene glycol (CAS 112-60-7)		
Acute		
Dermal		
LD50	Rabbit	22570 mg/kg
Oral		
LD50	Rat	32700 mg/kg
		29 g/kg

Carcinogenicity	No data available.
Serious eye damage/eye irritation	Not available.
Further information	This ink formulation has not been tested for toxicological effects. Refer to Section 2 for potential health effects and Section 4 for first aid measures.

12. Ecological Information

Aquatic toxicity	No data available for this product.

Ecotoxicological data

Components		Species	Test Results
2-pyrrolidone (CAS 616-45-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia pulex)	13.21 mg/l, 48 hours

Ecotoxicity No information available.
This product is highly soluble in water.

Persistence and degradability Not available.

Bioaccumulation / Accumulation

Bioaccumulative potential

Octanol/water partition coefficient log Kow

2-pyrrolidone	-0.85
Aliphatic diol	-0.106

Partition coefficient

2-pyrrolidone	-0.85
Aliphatic diol	-0.106

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.
HP's Planet Partners (trademark) supplies recycling program enables simple, convenient recycling of HP original inkjet and LaserJet supplies. For more information and to determine if this service is available in your location, please visit http://www.hp.com/recycle.

14. Transport Information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

RID

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 TSCA 12(b): Does not contain listed chemicals.

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Not listed.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated.

DEA Exempt Chemical Mixtures Code Number

Not regulated.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA (Superfund) reportable quantity

None

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	No
SARA 311/312 Hazardous chemical	No
Other information	VOC content (less water, less exempt compounds) = < 1141 g/L (U.S. requirement, not for emissions) VOC data based on formulation (Organic compounds minus solids)

State regulations

US. Massachusetts RTK - Substance List

2-pyrrolidone (CAS 616-45-5)

US. Pennsylvania RTK - Hazardous Substances

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

US. Rhode Island RTK

Not regulated.

16. Other Information

HMIS® ratings	Health: 1 Flammability: 1 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 1 Instability: 0
Disclaimer	This Safety Data Sheet document is provided without charge to customers of Hewlett-Packard Company. Data is the most current known to Hewlett-Packard Company 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.
Other information	This MSDS was prepared in accordance with USA OSHA Hazard Communications regulation (29 CFR 1910.1200).
Issue date	18-Jan-2012
This data sheet contains changes from the previous version in section(s):	1. Product and Company Identification: Alternate Trade Names Hazards Identification: Other hazards 9. Physical & Chemical Properties: Other information
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Explanation of abbreviations

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