



# MATERIAL SAFETY DATA SHEET

## 1. Chemical product and company identification

<b>A. Product name</b>	C9446 Series
<b>B. Recommended use and Limitations on use</b>	
<b>Recommended use</b>	Inkjet printing
<b>Company identification</b>	HP Korea House 23-6 Yoido-dong Youngdeungpo-gu Seoul 150-742, Korea Telephone (02) 2199-0114
	HP health effects line (Toll-free within the US) 1-800-457-4209 (Direct) 1-760-710-0048 HP Customer Care Line (Toll-free within the US) 1-800-474-6836 (Direct) 1-208-323-2551 Email: hpcustomer.inquiries@hp.com
<b>Issue date</b>	12-Mar-2015
<b>Revision date</b>	03-Oct-2015
<b>Version #</b>	02

## 2. Hazards identification

### A. Hazard category/Classification

<b>Physical hazards</b>	Not classified.
<b>Health hazards</b>	Not classified.
<b>Environmental hazards</b>	Not classified.

### B. Warning label items including precautionary statement

• <b>Pictogram</b>	None.
• <b>Signal word</b>	None.
• <b>Hazard statement</b>	None.
• <b>Precautionary statement</b>	
<b>Prevention</b>	None
<b>Response</b>	None
<b>Storage</b>	None
<b>Disposal</b>	None

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

<b>Other hazards</b>	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.
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## 3. Composition/information on ingredients

<b>Chemical identity</b>	<b>Common and alternative names</b>	<b>CAS number</b>	<b>ID number</b>	<b>Content in percent (%)</b>
Water		7732-18-5	KE-35400	75-85
2-pyrrolidone		616-45-5	KE-29978	<7.5
Alkyldiol		Proprietary	Proprietary	<5
Glycerol		56-81-5	KE-29297	<5
Diethylene glycol		111-46-6	KE-27694	<2.5
Trade secret colorant		Proprietary	Proprietary	<2.5

**Composition comments**

This ink supply contains an aqueous ink formulation.

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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. If irritation persists get medical attention.
- C. In case of inhalation** Move to fresh air. If symptoms persist, get medical attention.
- D. In case of swallowing** If material is ingested, immediately contact a physician or poison control center.
- E. Note to physician** Not available.

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**5. Fire-fighting measures****A. Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media** CO<sub>2</sub>, water, dry chemical, or 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.

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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** Not available.

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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**

Korea. OELs. Standards for Exposure to Chemical Substances and Physically Hazardous Factors

Components	Type	Value	Form
Glycerol (CAS 56-81-5)	TWA	10 mg/m <sup>3</sup>	Mist.

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

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

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

**C. Personal protective equipment**

• **Respiratory protection** Not available.

• **Eye protection** Not available.

• **Hand protection** Not available.

• **Body protection** Not available.

**Hygiene measures** Handle in accordance with good industrial hygiene and safety practice.

**Recommended monitoring procedures**

**Additional exposure data** Exposure limits have not been established for this product.

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## 9. Physical and chemical properties

### A. Appearance

Physical state	Not available.
Color	Blue

**B. Odor** Not available.

**C. Odor threshold** Not available.

**D. pH** 9.2

**E. Melting point/freezing point** Not available.

**F. Boiling point, initial boiling point, and boiling range** Not determined

**G. Flash point** > 230.0 °F (> 110.0 °C) Setafash Closed Cup

**H. Evaporation rate** Not determined

**I. Flammability (solid, gas)** Not available.

### J. Upper/lower limit on flammability or explosive limits

**Flammability limit - lower (%)** Not determined

**Flammability limit - upper (%)** Not available.

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**K. Vapor pressure** Not determined

### L. Solubility

**Solubility (water)** Soluble in water

**M. Vapor density**  $\geq 1$  (air=1.0)

**N. Specific gravity** Not available.

**O. n-octanol/water partition coefficient** Not available.

**P. Auto-ignition temperature** Not determined

**Q. Decomposition temperature** Not available.

**R. Viscosity** Not available.

**S. Molecular weight** Not available.

### Other data

**Oxidizing properties** Not determined

**VOC (Weight %)** 136.8 g/l

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## 10. Stability and reactivity

### A. Stability and hazardous reaction potential

**Stability** Stable under recommended storage conditions.

**Hazardous reaction potential** Will not occur.

**B. Conditions to avoid (e.g. static discharge, shock or vibration, etc)** Not available.

**C. Incompatible materials** Incompatible with strong bases and oxidizing agents.

**D. Hazardous decomposition products** Upon decomposition, this product may yield gaseous nitrogen oxides, carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. aldehydes, ketones, hydrogen fluoride, fluorinated hydrocarbons

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## 11. Toxicological information

### A. Information on likely routes of exposure

• **Respiratory organs** Not available.

• **Mouth** Not available.

• **Eyes** Not available.

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- **Skin** Not available.

## B. Information on health hazards

- **Acute toxicity (list all possible routes of exposure)** Based on available data, the classification criteria are not met.
- **Corrosivity or irritation to the skin** 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 sensitization** Based on available data, the classification criteria are not met.
- **Skin sensitization** Based on available data, the classification criteria are not met.
- **Carcinogenic properties /Carcinogenicity** Based on available data, the classification criteria are not met.
- **Mutagenic properties /Mutagenicity** Based on available data, the classification criteria are not met.
- **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.

Components	Species	Test Results
2-pyrrolidone (CAS 616-45-5)		
<b>Acute</b>		
<i>Oral</i>		
LD50	Guinea pig	6500 mg/kg
	Rat	6500 mg/kg
Diethylene glycol (CAS 111-46-6)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	11890 mg/kg
<i>Oral</i>		
LD50	Cat	3300 mg/kg
	Dog	9000 mg/kg
	Guinea pig	8700 mg/kg
	Mouse	13.3 g/kg
	Rabbit	26.9 g/kg
	Rat	12565 mg/kg
<i>Other</i>		
LD50	Mouse	9.6 g/kg
	Rabbit	2000 mg/kg
	Rat	7700 mg/kg
		7.7 g/kg

**Further information** Complete toxicity data are not available for this specific formulation  
Refer to Section 2 for potential health effects and Section 4 for first aid measures.

## 12. Ecological information

### A. Ecotoxicity

Product	Species	Test Results
C9446 Series (CAS Mixture)		
<b>Aquatic</b>		
<i>Acute</i>		
Fish	LC50	Fathead minnow (Pimephales promelas) > 750 mg/l, 96 hours

Components	Species	Test Results
2-pyrrolidone (CAS 616-45-5)		
<b>Aquatic</b>		
Crustacea	EC50	Water flea (Daphnia pulex) 13.21 mg/l, 48 hours
Diethylene glycol (CAS 111-46-6)		
<b>Aquatic</b>		
Fish	LC50	Western mosquitofish (Gambusia affinis) > 32000 mg/l, 96 hours
Glycerol (CAS 56-81-5)		
<b>Aquatic</b>		
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss) 51000 - 57000 mg/l, 96 hours
<b>Hazardous to the aquatic environment, acute hazard</b>	Not available.	
<b>Hazardous to the aquatic environment, long-term hazard</b>	Not available.	
<b>B. Persistence/degradability</b>	Not available.	
<b>C. Bioaccumulative potential</b>		
<b>Bioaccumulative potential</b>		
<b>Octanol/water partition coefficient log Kow</b>		
2-pyrrolidone		-0.85
Glycerol		-1.76
<b>D. Mobility in soil</b>	Not available.	
<b>E. Other adverse effects</b>	Not available.	
<b>Aquatic toxicity</b>	Not expected to be harmful to aquatic organisms.	

### 13. Disposal considerations

<b>A. Method of disposal</b>	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 <a href="http://www.hp.com/recycle">http://www.hp.com/recycle</a> .
<b>B. Disposal considerations (including disposal of contaminated containers or packaging)</b>	Not available.

### 14. Transport information

<b>DOT</b>	Not regulated as dangerous goods.
<b>IATA</b>	Not regulated as dangerous goods.
<b>IMDG</b>	Not regulated as dangerous goods.
<b>ADR</b>	Not regulated as dangerous goods.
<b>Further information</b>	Not a dangerous good under DOT, IATA, ADR, IMDG, or RID.

### 15. Regulatory information

<b>A. Restrictions under the Industrial Safety and Health Law</b>	
<b>Harmful Substances Prohibited from Manufacturing</b>	
Not regulated.	
<b>Harmful Substances Requiring Permission for Manufacture or Use</b>	
Not regulated.	
<b>Controlled Hazardous Substances</b>	
Not regulated.	

**Harmful Substances Requiring Special Medical Examination**

Not regulated.

**Workplace Environmental Monitoring Harmful Materials**

Not regulated.

**Occupational Exposure Limit**

GLYCERIN MIST (CAS 56-81-5)

**B. Restrictions under the Toxic Chemicals Control Law****Accidental Release Prevention Substances**

Not regulated.

**Banned Toxic Chemicals**

Not regulated.

**Observational Chemicals**

Not regulated.

**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.

**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/NDL), Australia, Japan, Philippines, South Korea, New Zealand, and China.

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**16. Other information****A. Source of information**

Not available.

**B. Issue date**

12-Mar-2015

**Revision date**

03-Oct-2015

**C. Number of revisions and date of most recent revision**

03-Oct-2015 (02 revision)

**D. Other**

Not available.

**Disclaimer**

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**Manufacturer information**

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Direct 1-650-857-5020

## 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