

## Material Safety Data Sheet (ANSI form)

### Section1 : Chemical Product and Company Identification

Product Name : Print Cartridge GC31 CH (RIC)  
 General Use : The Image Formation of Printing Machine  
 MSDS Number : 405702  
 Company Name : Ricoh Americas Corporation  
 Department :  
 Address : 5 Dedrick Place, West Caldwell, NJ 07006  
 Telephone : 1-973-882-2000 or 1-973-882-5218 (For product information) or  
 Number : 1-800-336-6737 (For emergencies)  
 Telefax Number : 1-973-882-3959  
 E-mail : environmentinfo@ricoh-usa.com

### Section2 : Composition, Information on Ingredients

Ingredients CAS No./Common Name	Chemical Formula	Contents (%)	ACGIH (TLV)			OSHA (PEL)	
			TWA	STEL	C	TWA	C
Confidential Organic Pigment(Copper compound)	Confidential	<10	N.A	N.A	N.A	N.A	N.A
Confidential Glycol	Confidential	20-30	N.A	N.A	N.A	N.A	N.A
56-81-5 Glycerin	C3H8O3	10-20	(as mist) 10mg/m3	N.A	N.A	(as mist) Total dust 15mg/m3	N.A
7732-18-5 Water	H2O	45-75	N.A	N.A	N.A	N.A	N.A

This product does not contain any of the following substances as ingredients.  
 And if it contains any impurities, it does not exceed any of the thresholds of RoHS.

Cadmium, Hexavalent Chromium, Mercury, Lead, Polybrominated biphenyls (PBB), Polybrominated diphenyleters (PBDE).

**Section3 : Hazards Identification**

**Emergency Overview**

<b>HMIS</b>	Health : 1	Flammabilit : 1	Reactivity : 0	PPE:See section 8
		y		
<b>NFPA</b>	Health : 1	Flammabilit : 1	Reactivity : 0	
		y		

**The Most Important Hazards**

**Adverse Human Health Effects :**

There are no significant hazards expected with intended use.

**Potential Health Effects**

**Primary Entry Routes :**

Inhalation ; Yes

Skin ; Yes

Ingestion ; Yes

**Environmental Effects :**

There are no significant hazards expected with intended use.

**Physical and Chemical Hazards :**

There are no significant hazards expected with intended use.

**Specific Hazards :**

There are no significant hazards expected with intended use.

**Main Symptoms :**

**Acute Inhalation Toxicity**

Under normal use conditions, there is no possibility to inhale the particle of ink.

**Acute Oral Toxicity**

Low acute toxicity in animal experiment.

**Acute Eye Irritation**

May be non-irritant.

**Acute Skin Irritation**

May be non-irritant.

**Sensitization**

From test no apparent significant hazards are expected.

**Chronic Effect**

Under normal use conditions, there is no possibility to inhale the particle of ink.

**Carcinogenicity**

This product does not contain the substances classified as carcinogenic by NTP, IARC or OSHA.

**Medical Conditions Aggravated by Exposure**

Not applicable

**Classification of the Chemical Product**

This mixture is not classified as dangerous.

#### Section4 : First Aid Measures

**Inhalation :**

Remove from exposure into fresh air if symptoms are experienced. Seek medical advice.

**Skin Contact :**

Wash thoroughly with soapy water.

**Eye Contact :**

Flush with a large amount of water until particles are removed. Seek medical advice.

**Ingestion :**

Make him drink strong salt water, let him vomit. Seek medical advice.

**Immediate Medical Attention :**

Immediate medical attention is not required.

#### Section5 : Fire Fighting Measures

Flash Point (degrees centigrade) : Not applicable

Burning Rate (mm/sec) : Not available

Autoignition Temperature (degrees centigrade) : Not applicable

Flammable Limits[%] : LEL Not applicable UEL Not applicable

**Extinguishing Media to Avoid :**

Not applicable.

**Specific Hazards :**

Not applicable

**Fire-Fighting Instructions / Specific Method :**

No special fire protecting method is required. Sprinkling or fire extinguishers can be used.

**Protection of Firefighters :**

Wear gloves, glasses, a mask if necessary.

#### Section6 : Accidental Release Measures

**Personal Precautions :**

Take off dirty clothes and wash them or have them dry-cleaned before wearing again.

**Environment Precautions :**

Do not exposure to sewers and watercourses.

**Methods for Cleaning Up :**

If spilled, wipe up with paper or cloth.

#### Section7 : Handling and Storage

**Handling :**

**Technical Measures/Precautions**

Not applicable

**Safe Handling Advice**

Keep away from heat, flame or spark. Do not dismantle cartridge.

**Storage :**

**Technical Measures**

Not applicable

**Storage Conditions**

Keep out of reach of children.

For the sake of quality, store in dry and well-ventilated area it should not exceed 35 degrees centigrade for a long time and avoid direct sunlight.

**Packaging material**

Not applicable

**Specific Use(s) :**

Image formation in printing machines.

### Section8 : Exposure Controls/Personal Protection

Technical measures :

Use adequate ventilation. None required with intended use.

Control Parameters

Exposure Limit Value ( I )

USA OSHA PEL (TWA) : Not applicable

ACGIH TLV (TWA) : Not applicable

DFG MAK : Not applicable

Personal Protection

Respiratory Protections (Specify Type)

None required in normal use.

Eye Protection

Put on goggles if necessary.

Protective Gloves

Use vinyl or rubber gloves if necessary.

Protective Clothing or Equipment

Wear chemical-resistant apron or other impervious clothing if necessary.

Hygiene Measures

Wash hands after handling.

### Section9 : Physical and Chemical Properties

Appearance

Physical state : Liquid

Form : Liquid

Colour : Cyan

Odor : No odor

pH : 8-10 Measuring Temp (degrees centigrade) : 25

Boiling Point (degrees centigrade) : Not available

Vapor Pressure (Pa) : Not available Measuring Temp (degrees centigrade) : -

Vapor Density (AIR=1) : Not available

Density (g/l) : Approx.1.1 Measuring Temp (degrees centigrade) : 23

Formula Weight : Not applicable

Melting Point (degrees centigrade) : Not applicable

Decomposition temperature (degrees centigrade) : Not applicable

Viscosity (Pa s) : Approx.0.008 Measuring Temp (degrees centigrade) : 25

Volatile (%) : 45-75

Evaporation Rate (Butyl Acetate = 1) : Not available

Water Solubility (g/L) : Soluble

### Section10 : Stability and Reactivity

Stability :

Stable

Hazardous Reaction :

There is no significant hazardous reaction expected with intended use.

Condition to Avoid :

Not applicable in normal use.

Materials to Avoid :

Not applicable in normal use.

Hazardous Polymerization :

None

Hazardous Decomposition or Byproducts :

Decomposition products will not occur.

### Section11 : Toxicological Information

#### Acute Toxicity

Acute Oral Toxicity (LD50) :  
5000 or over [mg/kg] (Rat) (Based on other Ricoh products test results of similar ingredients.)

Acute Dermal Toxicity :

Not available

Acute Inhalation Toxicity :

Not available

#### Local effects

Acute Skin Irritation(PII) :

1.0 or below (Rabbit) (Based on other Ricoh products test results of similar ingredients.)

Acute Eye Irritation :

Not available (Ingredients are not classified as dangerous according to Directive 67/548/EEC.)

#### Sensitization

Acute Allergenic Effects :

Not available (Marmot) (None of ingredients is listed on hazardous characteristics list of skin or inhalation sensitization.)

#### Specific Effects

Carcinogenicity :

This product does not contain the carcinogenic substances which are listed on NTP, IARC and OSHA.

Mutagenicity : Negative (Ames test)

Reproduction Toxicity : Does not contain substances listed as hazardous to reproductive health.

Teratogenic : Not available

### Section12 : Ecological Information

Mobility : No data are available on the adverse effect one environment.

Persistence/Degradability : Not available

y

Bioaccumulation : Not available

#### Ecotoxicity

Acute Toxicity for Fish (LC50) : Not available

Acute Toxicity for Daphnia : Not available

(EC50)

Algae Inhibition Test (IC50) : Not available

### Section13 : Disposal Consideration

**General information:**

Dispose of waste and residues in accordance with local authority requirements.

**Disposal methods:**

Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Confirm disposal procedures with local regulations.

**Precautions**

Not applicable

### Section14 : Transport Information

**International Regulations**

**Land Transport**

RID/ADR : Not applicable  
DOT 49 CFR : Not applicable  
ADNR : Not applicable

**Sea Transport**

IMDG Code : Not applicable

**Air Transport**

ICAO-TI/IATA-DGR : Not applicable  
UN Number : Not applicable  
Class : Not applicable

**Specific Precautionary Transport Measures and Conditions**

Avoid direct sunlight in quality.; Do not keep this over 35 degrees centigrade.

### Section15 : Regulatory Information

**Regulations**

**US Information**

Information on the label : Not required

**TSCA (Toxic Substances Control Act) :**

This product complies with all applicable rules and regulations under TSCA.

**SARA (Superfund Amendments and Reauthorization Act) Title III**

313 Reportable Ingredients : Not regulated

**California Proposition 65 :** Not regulated

**Canada Information**

WHMIS Controlled product : Not a controlled product

**EU Information**

Information on the label (1999/45/EC and 67/548/EEC)

Symbol & Indication : Not required

R-Phrase : Not required

S-Phrase : Not required

Special Precautions under 1999/45/EC Annex V : Not required

**76/769/EEC**

This product complies with applicable rules and regulations under 76/769/EEC

**Section16 : Other Information**

Explanation of Hazardous Materials Identification System [HMIS]& National Fire Protection Association [NFPA] Hazard Rating Systems:

Both the HMIS and NFPA systems use number from "0" to "4" to show the degree of hazard in an uncontrolled situation:

**0=Minimum Hazard 1=Slight Hazard 2=Moderate Hazard 3=Serious Hazard 4=Severe Hazard**

Colors may also be used in both systems:

**Blue=Health Hazard Red=Fire Hazard Yellow=Reactivity Hazard White=Indicate a special hazard**

HMIS will specify any Personal Protective Equipment required [PPE],

NFPA will specify OX(oxidizer), Acid(acid), ALK(Alkali), COR(Corrosive), W(use no water), xx(Radioactive).

Literature References :

ANSI Z400.1-1993

ISO 11014-1

Commission Directive 91/155/EEC

IARC (1996) "IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol.65, Printing Process and Printing Inks, Carbon Black and Some Nitro Compounds", Lyon, pp149-261

H.Muhle, B.Bellman, O.Creutzenberg, C.Dasenbrock, H.Emst, R.Kilpper, J.C.MacKenzie, P.Morrow, U.Mohr, S.Takenaka and R.Mermelstein(1991) "Pulmonary Response to Toner upon Chronic Inhalation Exposure in Rats" Fundamental and Applied Toxicology 17,pp280-299

IARC (2008) "IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol.93"

NIOSH CURRENT INTELLIGENCE BULLETIN "Evaluation of Health Hazard and Recommendation for Occupational Exposure to Titanium Dioxide DRAFT"

ACGIH-TLV : Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices

OSHA Z-Tables : US Department of Labor, 29CFR Part 1910 , Tables Z-1, Z-2, and Z-3

NTP (USA) : US Department of Health and Human Services National Toxicology Program Annual Report on Carcinogens  
DFG-MAK/GER: DFG List of MAK and BAT Value

Symbol (EC) : EU Directive 67/548/EEC

91/155/EEC : EU Directive 91/155/EEC

1999/45/EC Annex V : EU Directive 1999/45/EC

76/769/EEC : EU Directive 76/769/EEC

EC 304/2003 : Regulation (EC) No 304/2003 of the European Parliament and of the Council of 28 January 2003 concerning the export and import of dangerous chemicals

WHMIS Controlled product : Canada Workplace Hazardous Information System

OELs-TWA (Australia) : Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC: 3008 (1995)]

Abbreviations :

OSHA PEL PEL (Permissible Exposure Limit) under Occupational Safety and Health Act

ACGIH-TLV TLV (Threshold Limit Values) under American Conference of Governmental Industrial Hygienists

DFG-MAK MAK (Maximale Arbeitsplatz Konzentrationen) by Deutsche Forschungs Gemeinschaft

RoHS Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment

TWA Time Weighted Average

IARC International Agency for Research on Cancer

NTP National Toxicology Program

WHMIS Workplace Hazardous Information System

NOHSC National Occupational Health and Safety Commission Act 1985

Disclaimer(S) :

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Ricoh Americas Corporation.

It relates only to the specific material designated herein, and does not relate to use in combination with any other material or process.

Ricoh Americas Corporation assumes no legal responsibility for use or reliance upon this information.