

Material Safety Data Sheet (ANSI form)

Section1 : Chemical Product and Company Identification

Product Name : Print Cartridge GC31KH (RIC)  
General Use : The Image Formation of Printing Machine  
MSDS Number : 405701  
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
1333-86-4 Carbon Black	C	5-15	3.5mg/m3	N.A	N.A	3.5mg/m3	N.A
Confidential Glycol	Confidential	10-20	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	50-70	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).

Hazardous Ingredients Information			
Chemical Name : Carbon Black			
CAS Number	: 1333-86-4	EEC Number	: 215-609-9
OSHA⌈Z-Tables (USA)	: 3.5mg/m3	ACGIH-TLV	: 3.5mg/m3
NTP (USA)	: Not listed	IARC⌈Monographs	: Group 2B
Symbol (EU)	: Not listed	R-Phrase (EU)	: Not listed
DFG-MAK (GER)	: III 3B	OELs-TWA (Australia)	: 3.0mg/m3
California Proposition 65 (USA)	: Listed		

Section3 : Hazards Identification

Emergency Overview				
HMIS	Health : 1	Flammabilit : 1	Reactivity : 0	PPE:See section 8
		y		
NFPA	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

Carbon black contained in this product is classified to Group 2B of IARC as the result of inhalation test in use of rat.  
This is due to the fact that rat alone showed lung tumor in the animal experiment under very high concentration.  
During a normal use of this product, design of the cartridge proves it impossible to have powder carbon black released to the air.  
Intake from the mouth and skin does not show carcinogenicity.

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 : Black

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) (Data of similar product with same ingredients.)  
Acute Dermal Toxicity :  
Not available  
Acute Inhalation Toxicity :  
Not available  
Local effects  
Acute Skin Irritation(PII) :  
1.0 or below (Rabbit) (Data of similar product with same 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 :  
Carbon black contained in this product is classified to Group 2B of IARC as the result of inhalation test in use of rat.  
This is due to the fact that rat alone showed lung tumor in the animal experiment under very high concentration.  
During a normal use of this product, design of the cartridge proves it impossible to have powder carbon black released to the air.  
Intake from the mouth and skin does not show carcinogenicity.  
Mutagenicity : Negative (Data of similar product with same ingredients.)  
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  
Bioaccumulation : Not available  
Ecotoxicity  
Acute Toxicity for Fish (LC50) : Not available  
Acute Toxicity for Daphnia (EC50) : Not available  
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

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