RICOH

Material Safety Data Sheet (ANSI form)

Section1 : Chemical Product and Company Identification

Product Name : Print Cartridge GC 41C (405762)
General Use : The Image Formation of Printing Machine
MSDS Number : 405762
Company Name : Ricoh Americas Corporation
Department : GI Development Center GJ Design & Development Division
Address : 5 Dedrick Place, West Caldwell, NJ 07006
Telephone Number : 1-973-882-2000 or 1-973-882-5218 (For product information) or 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	40-60	N.A	N.A	N.A	N.A	N.A

This product does not contain any of the following substances as ingredients.
Cadmium, Hexavalent Chromium, Mercury, Lead, Polybrominated biphenyls (PBB), Polybrominated diphenyleters (PBDE), SVHC (substances of very high concern: published by ECHA).
And if it contains any impurities, it does not exceed any of the thresholds of RoHS.

Section3 : Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

HMIS	Health : 1	Flammability : 1	Reactivity : 0	PPE:See section 8
NFPA	Health : 1	Flammability : 1	Reactivity : 0	

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: Not applicable
(TWA)
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/cm3) : 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 (%) : 40-60
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)
Acute Dermal Toxicity :
Not available
Acute Inhalation Toxicity :
Not available
Local effects
Acute Skin Irritation(PII) :
1.0 or below (Rabbit) (Slight irritation)
Acute Eye Irritation :
Not available (Ingredients are not classified as dangerous according to Directive 67/548/EEC.)
Sensitization
Acute Allergenic Effects :
Non-skinsensitive (Mouse) (None skin 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
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 reqired [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
REACH	EC)No.1907/2006:Council Regulation concerning the Registration, Evaluation, Authorization and Restriction of Chemicals
SVHC	Substances of Very High Concern
ECHA	The European Chemicals Agency
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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