Product Name : PrintCartridge GC41Y MSDS Number : 405764
Date Prepared : 08/09/2006 Date Modified : 09/04/2015 Date : 21/04/2016

Safety Data Sheet (ISO form)

1.Product and Company Identification

Product Name	:PrintCartridge GC41Y
General Use	:The Image Formation of Printing Machine
MSDS Number	:405764
Company Name	:Ricoh Company,Ltd.
Department	:Safety Engineering Department, Quality Management Division
Address	:146-1 Nishisawada, Numazu-shi, Shizuoka-ken, 410-0007 Japan
Telephone Number	:055-920-1470, Japan
Telefax Number	:055-920-1479, Japan
E-mail	:msdsinfo@nts.ricoh.co.jp

2.Composition/Information on Ingredients

Substance or Preparation
Preparation
Chemical Nature

Ingredients	Chemical Formula	CAS.No.	Contents(%)
Organic Pigment	Confidential	Confidential	<10
Glycol	Confidential	Confidential	20-30
Glycerin	C3H8O3	56-81-5	10-20
Water	H2O	7732-18-5	40-60

This product does not contain any of the following substances as ingredients.
Cadmium, Hexavalent Chromium, Mercury, Lead, Polybrominated biphenyls (PBB), Polybrominated diphenyl ethers (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.

3.Hazards Identification

The Most Important Hazards
Adverse Human Health Effects
There are no significant hazards expected with intended use.
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.
The Classification of The Chemical Product
This preparation is not claassified as dangerous according to Directive 1999/45/EC

4.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.

Notes to a physician

Not applicable

5.Fire-Fighting Measures

Extinguishing Media

CO2, dry chemicals, foam or water.

Extinguishing Media to Avoid

Not applicable.

Specific Hazards

Not applicable

Specific Method

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

Protection of Fire-fighters

Wear gloves, glasses, a mask if necessary.

6.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.

7.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)

The Image Formation of Printing Machine or Copier.

8.Exposure Controls/Personal Protection

Technical Measures

Use adequate ventilation. None required with intended use.

Control Parameters

USA OSHA PEL (TWA) : Not applicable
ACGIH TLV (TWA) : Not applicable
DFG MAK : Not applicable

Personal Protection

Respiratory Protections

None required in normal use.

Hand Protection

Use vinyl or rubber gloves if necessary.

Eye Protection

Put on goggles if necessary.

Skin and Body Protection

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

Hygiene Measures

Wash hands after handling.

9.Physical and Chemical Properties

Appearance
Physical State : Liquid
Form : Liquid
Colour : yellow
Odour : No odour

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

Specific Temperatures/Temperature Ranges at Which Changes in Physical State Occur
Boiling Point (degrees centigrade) : Not available
Melting Point (degrees centigrade) : Not applicable

Decomposition Temperature (degrees centigrade) : Not applicable
Flash Point (degrees centigrade) : Not applicable
Explosion Properties (degrees centigrade) : This product is considered a nonexplosive material under normal use.

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

Solubility

Water Solubility (g/L) : Soluble
Octanol/Water Partition Coefficient

Not available

Other Information

Flammability : Not flammable
Viscosity (Pa･s) : Approx.0.008 Measuring Temp (degrees centigrade) :25
Volatile (%) : 40-60

10.Stability and Reactivity

Stability
Stable
Hazardous Reaction
There is no significant hazardous reaction expected with intended use.

Conditions to Avoid
Not applicable in normal use.
Materials to Avoid
Not applicable in normal use.
Hazardous Decomposition Products
Decomposition products will not occur.

11.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.

12.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

13.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

14.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
The UN Classification 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.

15.Regulatory Information

Regulations

EU Information
Information on the label (1999/45/EC and 67/548/EEC)
Symbols & Indications : 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
304/2003/EC
Not regulated
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 Title III
313 Reportable Ingredients : Not regulated
California Proposition 65 : Not regulated
Canada Information
WHMIS Controlled product : Not a controlled product

16.Other Information

NFPA Hazard Rating: National Fire Protection Agency (USA)

Health ; 1, Flammability ; 1, Reactivity ; 0
HMIS Rating : The National Paint and Coating Association (USA)

Health ; 1, Flammability ; 1, Reactivity ; 0

Literature References :

ANSI Z400.1-1993
ISO 11014-1
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, pp 280-299

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 DFG List of MAK and BAT Value
Symbol (EC) : Regulation (EC)No.1272/2008
91/155/ EEC : EU Directive 91/155/ EEC
1999/45/EC : EU Directive 1999/45/EC

CLP (EC)No.1272/2008	: Regulation (EC)No.1272/2008 of the European Parliamant and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures,amending and repealing Directive 67/548/EEC and 1999/45/EC, and amending Regulation (EC)No. 1907/2006
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	nternational 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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