

## Safety Data Sheet (ISO form)

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### 1. Product and Company Identification

Product Name :PRINT CARTRIDGE BK SP C220E  
General Use :The image formation of printing machine or copier.  
MSDS Number :406052  
Company Name : Ricoh Company,Ltd.  
Department :Environment Safety Center, Corporate Environment Division  
Address :146-1 Nishisawada, Numazu-shi, Shizuoka-ken, 410-0007 Japan  
Telephone Number :055-920-1470, Japan  
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### 2. Composition/Information on Ingredients

Substance or Preparation

Preparation

Chemical Nature

Ingredients	CAS.No.	Contents(%)
Al Substrate	Confidential	>97
photoconductivity Material	Confidential	<1
Binder Resin	Confidential	<1
Organic Pigment	Confidential	<1

This product does not contain any of the following substances as ingredients.

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

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### 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.

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#### Main Symptoms

##### Acute Inhalation Toxicity

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

##### Acute Oral Toxicity

Under normal use conditions, there is no possibility to swallow the particle of photosensitive component.

##### Acute Eye Irritation

Under normal use conditions, there is no possibility to enter into the eye.

##### Acute Skin Irritation

May be non-irritant.

##### Sensitization

May be non-sensitization.

##### Chronic Effect

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

##### Carcinogenicity

This product has no danger of carcinogenicity. Because, as for this product, is a drum form, and is strongly adhered to an aluminum substrate; the particle of photosensitive component needs not to be released.

##### The Classification of The Chemical Product

Not applicable

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#### 4. First-Aid Measures

##### Inhalation

Not applicable

##### Skin Contact

In case of contact with skin, there is no problem.

##### Eye Contact

Not applicable

##### Ingestion

Not applicable

##### Notes to a physician

Not applicable

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#### 5. Fire-Fighting Measures

##### Extinguishing Media

CO<sub>2</sub>, 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.

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#### 6. Accidental Release Measures

##### Personal Precautions

Not applicable

##### Environment Precautions

Not applicable

##### Methods for Cleaning Up

Not applicable

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## 7. Handling and Storage

### Handling

#### Technical Measures/Precautions

Not applicable

#### Safe Handling Advice

For the sake of quality, do not touch surface of photoreceptor.

### 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 or copiers.

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## 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

None required in normal use.

#### Eye Protection

None required in normal use.

#### Skin and Body Protection

None required in normal use.

#### Hygiene Measures

Wash hands after handling.

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## 9. Physical and Chemical Properties

### Appearance

Physical State : Solid

Form : Drum

Colour : dark blue

Odour : No odour

### Information

pH : Not applicable

### Specific Temperatures/Temperature Ranges at Which Changes in Physical State Occur

Boiling Point (degrees centigrade) : Not applicable

Melting Point (degrees centigrade) : Not applicable

Decomposition Temperature (degrees) : Not available

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

Product Name : PRINT CARTRIDGE BK SP C220E MSDS Number : 406052  
Date Prepared : 23/06/2006 Date Modified : 30/09/2008 OutputDate : 28/05/2009

**RICOH**

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Vapor Pressure (Pa) : Not applicable  
Vapor Density(AIR=1) : Not applicable  
Density (g/cm<sup>3</sup>) : 2.5-3.5 (as aluminum) Measuring Temp (degrees centigrade) : -  
Solubility  
Water Solubility (g/L) : Insoluble  
Other solvent Solubility (g/L) : Not available Measuring Temp (degrees centigrade) : -  
Octanol/Water Partition Coefficient : Not available  
Other Information  
Flammability : Not applicable  
Viscosity (Pa·s) : Not applicable  
Volatile (%) : Below 0.1

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## 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.

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## 11. Toxicological Information

Acute Toxicity  
Acute Oral Toxicity (LD50) : 2000 or over (Rat)  
Acute Dermal Toxicity : Not available  
Acute Inhalation Toxicity : Not applicable  
Local effects  
Acute Skin Irritation(PII) : Not available (None of hazardous situation will be caused under normal use condition.)  
Acute Eye Irritation : Not applicable  
Sensitization  
Acute Allergenic Effects : Not available  
Specific Effects  
Carcinogenicity : This product has no danger of carcinogenicity. Because, as for this product, is a drum form, and is strongly adhered to an aluminum substrate; the particle of photosensitive component needs not to be released.

Mutagenicity : Negative (Ames test)

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

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## 12. Ecological Information

Mobility : No data are available on the adverse effect one environment.  
Persistence/Degradability : Not available  
Bioaccumulation : Not known in bioaccumulation.  
Ecotoxicity  
Acute Toxicity for Fish (LC50) : Not available  
Acute Toxicity for Daphnia (EC50) : Not available  
Algae Inhibition Test (IC50) : Not available

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## 13. Disposal Consideration

General information:  
Used drum should be disposed in an environmentally appropriate manner and accordance with governmental regulations.  
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

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## 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  
Specific Precautionary Transport Measures and conditions  
Keep it in cool and dry storage and avoid direct sun for quality.

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## 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  
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) : 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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