

Product Name : [Print Cartridge Black Type MP C4500/C4540/LD445c \(Black toner\)](#) SDSNumber : [841342](#)Date Prepared : [10/21/2005](#) Date Modified : [07/10/2017](#) Date Printed: [12/14/2017](#)**RICOH**

## Safety Data Sheet

### Section1 : Chemical Product and Company Identification

## (a) Product identifier used on the label

Product Name : [Print Cartridge Black Type MP C4500/C4540/LD445c \(Black toner\)](#)

## (b) Other means of identification

SDS Number : [841342](#)

## (c) Recommended use of the chemical and restrictions on use

General Use : [The Image Formation of Printing Machine or Copier](#)

## (d) Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Company Name : [Ricoh USA, Inc.](#)Department : [Environmental Sustainability and Product Compliance](#)Address : [5 Dedrick Place West Caldwell, NJ 07006 USA](#)

## (e) Emergency phone number.

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](mailto:environmentinfo@ricoh-usa.com)

### Section2 : Hazards Identification

## Classification

PHYSICAL HAZARD(S)	EXPLOSIVES	Classification not possible
	FLAMMABLE GASES	Not Applicable
	FLAMMABLE AEROSOLS	Not Applicable
	OXIDIZING GASES	Not Applicable
	GASES UNDER PRESSURE	Not Applicable
	FLAMMABLE LIQUIDS	Not Applicable
	FLAMMABLE SOLIDS	Classification not possible
	SELF-REACTIVE SUBSTANCES AND MIXTURES	Not Applicable
	PYROPHORIC LIQUIDS	Not Applicable
	PYROPHORIC SOLIDS	Classification not possible
	SELF-HEATING SUBSTANCES AND MIXTURES	Classification not possible
	SUBSTANCES AND MIXTURES, WHICH ON CONTACT WITH WATER, EMIT FLAMMABLE GASES	Classification not possible
	OXIDIZING LIQUIDS	Not Applicable
	OXIDIZING SOLIDS	Classification not possible
	ORGANIC PEROXIDES	Classification not possible
CORROSIVE TO METALS	Classification not possible	
HEALTH HAZARD(S)	ACUTE TOXICITY(ORAL)	Not Classified
	ACUTE TOXICITY(DERMAL)	Classification not possible
	ACUTE TOXICITY (INHALATION - GAS)	Not Applicable

	ACUTE TOXICITY (INHALATION - VAPOUR)	Not Applicable
	ACUTE TOXICITY (INHALATION - DUST AND MIST)	Classification not possible
	SKIN CORROSION/IRRITATION	Not Classified
	SERIOUS EYE DAMAGE/EYE IRRITATION	Classification not possible
	RESPIRATORY SENSITIZER	Classification not possible
	SKIN SENSITIZER	Not Classified
	GERM CELL MUTAGENICITY	Classification not possible
	CARCINOGENICITY	Classification not possible
	TOXIC TO REPRODUCTION	Classification not possible
	TARGET ORGAN SYSTEMIC TOXICITY FOLLOWING SINGLE EXPOSURE	Classification not possible
	TARGET ORGAN SYSTEMIC TOXICITY FOLLOWING REPEAT EXPOSURE	Classification not possible
	ASPIRATION HAZARD	Classification not possible
ENVIRONMENTSL HAZARD(S)	ACUTE HAZARDS TO THE AQUATIC ENVIRONMENT	Classification not possible
	CHRONIC HAZARDS TO THE AQUATIC ENVIRONMENT	Classification not possible
	HAZARDOUS TO THE OZONE LAYER	Classification not possible

## Label element

Pictogram:	
Signal word(s):	Not applicable
Hazard statement(s):	Not applicable
Precautionary statement(s)	Not applicable
<b>【Prevention】</b>	
<b>【Response】</b>	Not applicable
<b>【Storage】</b>	Not applicable
<b>【Disposal】</b>	Not applicable

## Specific Hazards

Dust explosion (like most finely grained organic powders)

## Section3 : Composition, Information on Ingredients

Ingredients CAS No./Chemical name	Contents (%)
Confidential Polyester Resin	>70
1333-86-4 Carbon Black	<10
7631-86-9 Silica	<10
13463-67-7 Titan Oxide	0.1-1

## Section4 : First Aid Measures

### (a) Necessary measures

#### Inhalation :

Remove from exposure into fresh air and rinse mouth with water. 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 :

Drink several glasses of water to dilute ingested toner. Seek medical advice.

### (b) Most important symptoms/effects, acute and delayed.

Not available

### (c) Indication of immediate medical attention and special treatment needed.

#### Immediate medical Attention :

Immediate medical attention is not required.

## Section5 : Fire Fighting Measures

### (a) Suitable (and unsuitable) extinguishing media.

#### Extinguishing Media to Avoid :

Not applicable.

### (b) Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products).

#### Specific Hazards :

Can form explosive dust-air mixtures when finely dispersed in air.

### (c) Special protective equipment and precautions for fire-fighters.

#### 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

### (a) Personal precautions, protective equipment, and emergency procedures.

#### Personal Precautions :

Do not breathe in dust.

#### Environment Precautions :

Do not flush into sewers or watercourses.

### (b) Methods and materials for containment and cleaning up.

#### Methods for Cleaning Up :

Fine powder may form explosive dust-air mixture. Confirm there is no source of fire and if there is a source, remove it. Sweep up spilled powder slowly and clean remainder with wet cloth. If a vacuum cleaner is used, a dust explosion-proof type must be chosen.

## Section7 : Handling and Storage

## (a) Precautions for safe handling.

## Handling :

Technical Measures/Precautions

Not applicable

## Safe Handling Advice

Do not handle in areas where there is wind or draught, this may cause dust to get into eyes.

Avoid breathing in dust.

## (b) Conditions for safe storage, including any incompatibilities.

## Storage :

Technical Measures

Not applicable

## Storage Conditions

Keep out of reach of children.

Store in dry, well-ventilated area, to maintain quality the temperature should not exceed 35degrees centigrade for a long time. Avoid direct sunlight.

## Packaging material

Not applicable

## Specific Use(s) :

Image formation in printing machines or copiers.

Section8 : Exposure Controls/Personal Protection
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## (a) OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit

## Control Parameters

## Exposure Limit Value ( I )

USA OSHA PEL (TWA)	: 15mg/m3 (Total dust)	5.0mg/m3 (Respirable fraction)
ACGIH TLV (TWA)	: 10mg/m3 (Inhalable fraction)	3.0mg/m3 (Respirable fraction)
DFG MAK	: 4.0mg/m3 (Total dust)	1.5mg/m3 (Respirable fraction)

## Personal Protection

## (b) Appropriate engineering controls.

## Technical measures :

Use adequate ventilation. None required with intended use.

## (c) Individual protection measures, such as personal protective equipment.

## Respiratory Protections (Specify Type)

None required in normal use. If the limit of exposure concentration is exceeded, use authorised respirator.

## 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
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(a) Appearance (physical state, color, etc.)

Physical state : Solid

Form : Powder

Colour : Black

(b) Odor : Slightly plastic odor

(c) Odor threshold : Not available

(d) pH : Not applicable

(e) Melting point/freezing point : (Softening point) Approx. 110  
(degrees centigrade)

(f) Initial boiling point and boiling range : Not applicable

(g) Flash point : Not applicable

(h) Evaporation Rate (Butyl Acetate = 1) : Not applicable

(i) Flammability (solid, gas) : Not flammable

(j) Upper/lower flammability or explosive limits : Upper Not available Lower Not available

(k) Vapor Pressure (Pa) : Not applicable

(l) Vapor Density (AIR=1) : Not applicable

(m) Relative density : Approx. 1.2

(n) Solubility(ies)

Water Solubility (g/L) : Insoluble

Chloroform Solubility (g/L) : Slightly soluble

(o) Partition coefficient: n-octanol/water : Not available

(p) Auto-ignition temperature : Not available

(q) Decomposition temperature : Not available  
(degrees centigrade)

(r) Viscosity (Pa · s) : Not applicable

Section10 : Stability and Reactivity
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(a) Reactivity

Hazardous Reaction :

Dust explosion, like most finely grained organic powders.

(b) Chemical stability :

Stable

(c) Possibility of hazardous reactions :

Not available

(d) Condition to Avoid :

Not applicable in normal use.

(e) Incompatible materials :

Not applicable in normal use.

(f) Hazardous decomposition products :

Decomposition products will not occur.

## Section 11 : Toxicological Information

(a) Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact)

ingestion, skin, inhalation, eye contact

(b) Symptoms related to the physical, chemical and toxicological characteristics

Not available

(c) Delayed and immediate effects and also chronic effects from short- and long-term exposure

Not available

### 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) :

Non-irritant (Rabbit) (None of hazardous situation will be caused under normal use condition.)

Acute Eye Irritation :

Slightly irritant (Based on other product test results of similar ingredients.)

### Sensitization

Acute Allergenic Effects :

0 % (Marmot) (None skin sensitization.)

Mutagenicity : Negative (Ames test)

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

Teratogenic : Not available

(d) Numerical measures of toxicity (such as acute toxicity estimates)

Not available

(e) Whether the hazardous chemical is listed in the National Toxicology Program (NTP)

Report on Carcinogens (latest edition) or has been found to be a potential carcinogen

in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA.

Carbon black and titanium dioxide contained in this product are classified to Group 2B of IARC as the result of inhalation test in use of rat.

But oral/skin test does not show carcinogenicity.

The toner containing carbon black did not show carcinogenicity in chronic inhalation exposure test in use of rat.

In the animal experiment with very high concentration of titanium dioxide (excessive burden of rat's lungs clearance mechanism (overload phenomenon)), the rat alone showed lung tumor. Under a normal use practice, the concentration should be far lower than the above; and it is assumed that there is no such use.

Also, relation between respiratory disease and work exposure of titanium dioxide is not observed with epidemiological survey.

## Section12 : Ecological Information

Mobility : No data are available on any adverse effects on the environment.

Persistence/Degradability : Not available

Bioaccumulation : Not available

### Ecotoxicity

Acute Toxicity for Fish (LC50) : Not classified as toxic (Regulation (EC) No 1272/2008).mg/l/96hr

Acute Toxicity for Daphnia (EC50) : Not classified as toxic (Regulation (EC) No 1272/2008).mg/l/48hr

Algae Inhibition Test (IC50) : Not classified as toxic (Regulation (EC) No 1272/2008).mg/l/72hr

## 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

Do not throw the toner cartridge or toner into an open flame. Hot toner may scatter and cause burns or other damage.

## 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.

## Section15 : Regulatory Information

### Regulations

## US Information

Information on the label :

Not required

TSCA (Toxic Substances Control Act) :

This toner 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 (EU Regulation (EC)No. 1272/2008)

Symbol & Indication : Not required

Hazard Statement : Not required

Precautionary statement : Not required

Special Precautions under EU Regulation 1272/2008 Annex II :

Not required

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

<b>Section 16 : Other Information</b>
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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)	: 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 Parliament 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	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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