

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 as amended

Product Name : Print Cartridge Black IM C3500

SDS Number : 842255

Release Date 2018-07-23

Revision Date 2018-09-01

# RICOH

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## 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

### 1.1. Product identifier

Product Name Print Cartridge Black IM C3500 (Black toner)

SDS number 842255

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Print the image in printers and multi-purpose devices.

### 1.3 Information on the supplier of the safety data sheet

Importer

Ricoh Europe SCM B.V.

Blankenweg 24, 4612 RC Bergen op Zoom, The Netherlands

TEL: +31 164 280808 / FAX: +31 164 280820

<https://www.ricoh-europe.com>, [RESCM.ISI-global@ricoh-europe.com](mailto:RESCM.ISI-global@ricoh-europe.com)

Manufacture

Ricoh Co., Ltd.

Chome-3-6 Nakamagome, Ōta, Tokyo 143-8555, Japan

### 1.4 Urgent call phone number

Austria	+43 1 31 00472	Belgium	+32 (0)70 245 245
Czech Republic	+420 (0)267 125 32	Denmark	112
Finland	+358 (0)9 471 977	France	+33 (0)145 42 59 59
Germany	+49 511 67420	Hungary	+36 80 20 11 99
Ireland	111	Italy	+39 0266101029
Luxembourg	+352 8002 5500	Netherlands	+31 302748888
Poland	+48 (42) 253 84 00	Portugal	112
Slovakia	+421 2 4854 4511	Spain	+34 91 562 04 20
Sweden	+46 10 456 67 00	United Kingdom	111 (UK only)
Norway	113	Switzerland	+41 044 832 3411

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## **2. IDENTIFICATION OF DANGERS**

### **2.1 Classification of the substance or mixture**

According to the following data, no classification and labeling are necessary according to Regulation (EC) no. 1272/2008.

### **2.2 Elements of the label**

Not applicable

### **2.3 Other hazards**

No hazards are foreseen under normal conditions of use.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

**3.1 Mixtures**

Name chemistry	% by weight	CAS NO	EC number	Classification (67/548)	Indications of danger	Registration number REACH
Polyester resin	60-90	Confidential	Confidential	None	None	Confidential
Wax	1-20	Confidential	Confidential	None	None	Confidential
Carbon black	1-20	1333-86-4	215-609-9	None	None	01-2119384822- 32-xxxx
Titanium dioxide	0.1-1	13463-67-7	236-675-5	None	None	01-2119489379- 17- xxxx
Silica	<10	7631-86-9	231-545-4	None	None	01-2119379499- 16-- xxxx

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.

Full text of H indications: see Section 16

Note: components marked as "Not certified" are exempt from registration

**4. FIRST AID MEASURES**

**4.1 Description of first aid measures**

**Inhalation**                      Move away from the exposure area, get fresh air and rinse your mouth with water. Consult a doctor.

**Contact with the skin**      Wash thoroughly with soap and water.

**Eye contact**                      Wash with plenty of water until the particles are removed. Consult a doctor.

**Ingestion**                              Rinse the mouth with water and then drink plenty of water or milk.

**4.2 Most important symptoms and effects, both acute and delayed**

**Toxicity**

**Eyes**                              No known effect

**Skin**                                      No known effect

**Inhalation**                      No known effect

**Chronic effects**

**Main symptoms**                      Over-exposure may give rise to mild respiratory irritation

#### **4.3 Indication for immediate medical consultation and adequate medical treatment**

Immediate medical intervention is not required.

### **5. FIRE-FIGHTING MEASURES**

#### **5.1 Extinguishing media**

**Fire fighting** CO2, dry chemicals, foam or water

#### **Unsuitable extinguishing media**

Do not use direct water jet to prevent fire spread.

#### **5.2 Special hazards arising from the substance or mixture**

**Specific risks** When dispersed finely in the air, it can form explosive air-dust mixtures.

#### **5.3 Special protective actions for firefighters**

**Specific method** No special fire fighting equipment is required. You can use fire extinguishers or sprinklers.

#### **Fire Brigade Protection**

Wear gloves, glasses and a mask if necessary.

### **6. MEASURES IN CASE OF ACCIDENTAL RELEASE**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

Do not inhale dust.

#### **6.2 Environmental precautions**

Do not discharge into drains or watercourses.

#### **6.3 Methods and materials for containment and cleaning up**

Fine dust may form explosive dust-air mixtures. Make sure that there is no flame and remove them if necessary. Slowly sweep the spilled dust and clean the residues with a damp cloth. If you want to use a vacuum cleaner, choose a dust-proof type.

### **7. HANDLING AND STORAGE**

#### **7.1 Precautions for safe handling**

#### **Handling**

**Technical measurements** Not applicable

#### **Advice for safe handling**

Do not handle in areas with wind or air currents as dust may penetrate the eyes. Avoid inhaling dust.

## **7.2 Conditions for safe storage, including any incompatibilities**

Keep out of reach of children.

To preserve the quality, store in a dry and well-ventilated place where the temperature does not exceed along 35 degrees centigrade and without direct exposure to sunlight.

**Packaging material**                      Not applicable

## **7.3 Specific end use**

Print the image in printers and multi-purpose devices.

## **8. EXPOSURE CONTROL / INDIVIDUAL PROTECTION**

### **8.1 Control parameters**

#### **Exposure limit values**

**Prepared**                                      USA OSHA PEL (TWA): 15mg / m3 (total powder) 5.0mg / m3 (respirable fraction).  
ACGIH TLV (TWA): 10mg / m3 (Inhalable fraction) 3.0mg / m3 (respirable fraction).  
DFG MAK: 4.0mg / m3 (Total powder) 1.5mg / m3 (Breathable fraction)

**Substance**                                      Not applicable

### **8.2 Exposure controls**

#### **Occupational exposure control**

Use in adequately ventilated areas. No precautions required in case of appropriate use.

#### **Control of exposure in the environment**

No precautions are necessary under normal use conditions.

### **8.3 Recommended measures for risk management, such as personal protective equipment (PPE)**

**Respiratory protections**      Normal use does not require any precaution. If the exposure concentration limit is exceeded, use an approved respirator.

**Hand protection**                      Use vinyl or rubber gloves if necessary.

**Eye protection**                      Wear protective goggles if necessary.

#### **Protection of skin and body**

Wear chemically resistant aprons or other impenetrable clothing if necessary.

**Hygiene measures**                      Wash hands after use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Powder
Physical state	Solid
Color	Black
Smell	Slight plastic smell
Olfactory threshold	Weak

### Important information on health, safety and the environment

pH Not applicable

Measurement temperatures in degrees centigrade.

Specific temperatures / temperature ranges in which changes in the physical state can occur.

Boiling point Not applicable

Fusion point Softening point: about 90.

### Decomposition temperature (degrees Celsius)

Not determined

Flash point Not applicable

### Properties of the explosion

This product is considered non-explosive material under normal conditions of use.

Oxidizing properties This product is considered non-oxidizing material under normal conditions of use.

Evaporation degree (Butyl acetate = 1)  
Not applicable

Steam pressure (Pa) Not applicable

### Measuring temperature (degrees Celsius)

### Vapor density (air = 1)

Not applicable

Density (g / cm<sup>3</sup>) About 1.2 Measuring temperature (degrees Celsius) 25

Relative density About 1.2

Viscosity (Pa · s) Not applicable

Solubility (g / l) Insoluble

Chloroform Solubility (g / l): slightly soluble

### Octanol / water partition coefficient

Not available

### 9.2 Other information

Volatility (%) 0.2 or less

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Explosion of powders like most organic fine powders.

### 10.2 Chemical stability

Stable

### 10.3 Possibility of hazardous reactions

It does not generate dangerous reactions during normal processing.

### 10.4 Conditions to avoid

Avoid dispersion of dust in the air.

### 10.5 Incompatible materials to avoid

Not applicable to normal use.

### 10.6 Hazardous decomposition products

It does not generate decomposition products.

## 11. TOXICOLOGICAL INFORMATION

*The toxicity data below are based on the results of reprography materials and the like.*

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Acute oral toxicity (LD50)

5000 or more [mg / kg] (Rat) (based on test results from other products with similar ingredients).

##### Acute dermal toxicity

Not available

##### Acute inhalation toxicity

Not available

#### Skin corrosion / irritation (PII)

≤ 1.0 (Rabbit) (based on test results on other products with similar ingredients).

#### Serious damage / irritation of the eyes

The components are not classified as hazardous (according to regulations (EC) 1272/2008).

## **Respiratory / cutaneous lesions**

0% (Marmot) (based on test results on other products with similar ingredients).

## **Carcinogenicity**

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.

## **Germ cell Germ mutagenicity**

Negative (Ames test).

## **Reproductive toxicity**

It does not contain substances that are dangerous for reproductive health.

## **STOT-Single exposure**

Not available

## **STOT-Repeated exposure**

Not available

## **Suction hazard**

It does not contain substances considered to be risky for reproductive health.

## **12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

#### **Acute toxicity to the aquatic environment**

##### **Acute toxicity to fish (LC50)**

Not classified as toxic (Regulation (EC) No. 1272/2008).

##### **Acute toxicity for daphnia (LC50)**

Not classified as toxic (Regulation (EC) No. 1272/2008).

### **12.2 Persistence and degradability**

Not easily biodegradable

### **12.3 Bioaccumulative potential**

Bioaccumulation is unlikely



#### **12.4 Mobility in the soil**

No detection of negative effects on the environment

#### **12.5 Results of the PBT and vPvB assessment**

It is not a PBT according to REACH annex XIII

#### **12.6 Other adverse effects**

It is little or not at all dangerous for the environment

### **13. DISPOSAL CONSIDERATIONS**

#### **13.1 Disposal considerations**

<b>General informations</b>	Dispose of waste and residues in accordance with the requirements in accordance with the local laws in force.
<b>Disposal methods</b>	The disposal methods are based on the material supplied. Disposal must be carried out in compliance with the laws and regulations in force and with the characteristics of the material at the time of disposal. Make sure that the disposal procedures comply with local regulations.
<b>Precautions</b>	Do not dispose of the toner cartridge or toner in open flames. Hot toner may scatter and cause burns or other damage .

### **14. TRANSPORT INFORMATION**

#### **14.1 UN/ID No**

Not applicable.

#### **14.2 Official shipping designation**

Not applicable.

#### **14.3 Danger classes related to transport**

Not applicable.

#### **14.4 Packing group**

Not applicable.

#### **14.5 Environmental hazards**

It is little or not at all dangerous for the environment.

#### **14.6 Special precautions for users**

To preserve the quality, avoid direct sunlight.

#### **14.7 Wholesale transport in accordance with MARPOL 73/78 and the IBC Code**

Not applicable.

## 15. REGULATORY INFORMATION

### 15.1 Safety, health and environmental regulations and legislation specific to the substance or mixture

The substance is not classified as hazardous according to Regulation (EC) No 1272/2008

The substance is not subject to regulation (EC) No 1907/2006 Annex XVII.

### 15.2 Evaluation of chemical safety

Not applicable

## 16. OTHER INFORMATION

### References to the literature

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, pp. 149-261

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 Occupation Exposure to Titanium Dioxide DRAFT "

ACGIH-TLV: Limit threshold values for chemicals and physical agents and biological exposure indexes

OSHA Tables Z: US Department of Labor, 29 CFR 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 values

Symbol (EC): Regulations (EC) No 1272/2008

91/155 / EEC EU Directive 91/155 / EEC

(EC) No 1907/2006 AnnexXVII

: Regulations (EC) No 1907/2006 Annex XVII

(EC) No 689/2008: Regulations (EC) No 689/2008

Abbreviations

OSHA PEL: PEL (Permissible Exposure Limit, Tolerable Exposure Limit), in Occupational Safety and Health Act

ACGIH-TLV: TLV (Threshold Limit Values) in the American Conference of

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Governmental Industrial Hygienists

REACH: (CE) No. 1907/2006: Council regulation concerning registration, evaluation, authorization and restriction of chemicals

SVHC: Substances of Very High Concern (extremely problematic substances)

ECHA: European Chemicals Agency (European Chemicals Agency)

DFG-MAK: MAK (Maximale Arbeitsplatz Konzentrationen) by Deutsche Forschungs Gemeinschaft

RoHS: Restriction of the use of certain hazardous substances in electrical equipment and electronic

TWA: Time Weighted Average (time weighted average)

IARC: International Agency for Research on Cancer (International Agency for Cancer Research)

NTP: National Toxicology Program

Disclaimer

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# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 as amended

Product Name : Print Cartridge Cyan IM C3500

SDS Number : 842258

Release Date 2018-07-23

Revision Date 2018-09-01

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## 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

### 1.1. Product identifier

Product Name Print Cartridge Cyan IM C3500 (Cyan toner)

SDS number 842258

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Print the image in printers and multi-purpose devices.

### 1.3 Information on the supplier of the safety data sheet

Importer

Ricoh Europe SCM B.V.

Blankenweg 24, 4612 RC Bergen op Zoom, The Netherlands

TEL: +31 164 280808 / FAX: +31 164 280820

<https://www.ricoh-europe.com>, [RESCM.ISI-global@ricoh-europe.com](mailto:RESCM.ISI-global@ricoh-europe.com)

Manufacture

Ricoh Co., Ltd.

Chome-3-6 Nakamagome, Ōta, Tokyo 143-8555, Japan

### 1.4 Urgent call phone number

Austria	+43 1 31 00472	Belgium	+32 (0)70 245 245
Czech Republic	+420 (0)267 125 32	Denmark	112
Finland	+358 (0)9 471 977	France	+33 (0)145 42 59 59
Germany	+49 511 67420	Hungary	+36 80 20 11 99
Ireland	111	Italy	+39 0266101029
Luxembourg	+352 8002 5500	Netherlands	+31 302748888
Poland	+48 (42) 253 84 00	Portugal	112
Slovakia	+421 2 4854 4511	Spain	+34 91 562 04 20
Sweden	+46 10 456 67 00	United Kingdom	111 (UK only)
Norway	113	Switzerland	+41 044 832 3411

## 2. IDENTIFICATION OF DANGERS

### 2.1 Classification of the substance or mixture

According to the following data, no classification and labeling are necessary according to Regulation (EC) no. 1272/2008.

### 2.2 Elements of the label

Not applicable

### 2.3 Other hazards

No hazards are foreseen under normal conditions of use.

**3. COMPOSITION / INFORMATION ON INGREDIENTS**

**3.1 Mixtures**

Name chemistry	% by weight	CAS NO	EC number	Classification (67/548)	Indications of danger	Registration number REACH
Polyester resin	60-90	Confidential	Confidential	None	None	Confidential
Wax	1-20	Confidential	Confidential	None	None	Confidential
Organic pigment	1-20	147-14-8	205-685-1	None	None	01-2119458771- 32- xxxx
Titanium oxide	0.1-1	13463-67-7	236-675-5	None	None	01-2119489379- 17- xxxx
Silica	<10	7631-86-9	231-545-4	None	None	01-2119379499- 16-- xxxx

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.

Full text of H indications: see Section 16

Note: components marked as "Not certified" are exempt from registration.

**4. FIRST AID MEASURES**

**4.1 Description of first aid measures**

**Inhalation**                      Move away from the exposure area, get fresh air and rinse your mouth with water. Consult a doctor.

**Contact with the skin**      Wash thoroughly with soap and water.

**Eye contact**                      Wash with plenty of water until the particles are removed. Consult a doctor.

**Ingestion**                              Rinse the mouth with water and then drink plenty of water or milk.

**4.2 Most important symptoms and effects, both acute and delayed**

**Toxicity**

**Eyes**                              No known effect

**Skin**                                      No known effect

**Inhalation**                      No known effect

**Chronic effects**

**Main symptoms**                      Over-exposure may give rise to mild respiratory irritation

#### **4.3 Indication for immediate medical consultation and adequate medical treatment**

Immediate medical intervention is not required.**5. FIRE-FIGHTING MEASURES**

#### **5.1 Extinguishing media**

**Fire fighting** CO2, dry chemicals, foam or water

#### **Unsuitable extinguishing media**

Do not use direct water jet to prevent fire spread.

#### **5.2 Special hazards arising from the substance or mixture**

**Specific risks** When dispersed finely in the air, it can form explosive air-dust mixtures.

#### **5.3 Special protective actions for firefighters**

**Specific method** No special fire fighting equipment is required. You can use fire extinguishers or sprinklers.

#### **Fire Brigade Protection**

Wear gloves, glasses and a mask if necessary.

### **6. MEASURES IN CASE OF ACCIDENTAL RELEASE**

#### **6.1 Personal precautions, protective equipment and emergency procedures**

Do not inhale dust.

#### **6.2 Environmental precautions**

Do not discharge into drains or watercourses.

#### **6.3 Methods and materials for containment and cleaning up**

Fine dust may form explosive dust-air mixtures. Make sure that there is no flame and remove them if necessary. Slowly sweep the spilled dust and clean the residues with a damp cloth. If you want to use a vacuum cleaner, choose a dust-proof type.

### **7. HANDLING AND STORAGE**

#### **7.1 Precautions for safe handling**

#### **Handling**

**Technical measurements** Not applicable

#### **Advice for safe handling**

Do not handle in areas with wind or air currents as dust may penetrate the eyes. Avoid inhaling dust.

## **7.2 Conditions for safe storage, including any incompatibilities**

Keep out of reach of children.

To preserve the quality, store in a dry and well-ventilated place where the temperature does not exceed along 35 degrees centigrade and without direct exposure to sunlight.

**Packaging material**                      Not applicable

## **7.3 Specific end use**

Print the image in printers and multi-purpose devices.

## **8. EXPOSURE CONTROL / INDIVIDUAL PROTECTION**

### **8.1 Control parameters**

#### **Exposure limit values**

**Prepared**                                      USA OSHA PEL (TWA): 15mg / m3 (total powder) 5.0mg / m3 (respirable fraction).

ACGIH TLV (TWA): 10mg / m3 (Inhalable fraction) 3.0mg / m3 (respirable fraction).

DFG MAK: 4.0mg / m3 (Total powder) 1.5mg / m3 (Breathable fraction)

**Substance**                                      Not applicable

### **8.2 Exposure controls**

#### **Occupational exposure control**

Use in adequately ventilated areas. No precautions required in case of appropriate use.

#### **Control of exposure in the environment**

No precautions are necessary under normal use conditions.

### **8.3 Recommended measures for risk management, such as personal protective equipment (PPE)**

**Respiratory protections**      Normal use does not require any precaution. If the exposure concentration limit is exceeded, use an approved respirator.

**Hand protection**                      Use vinyl or rubber gloves if necessary.

**Eye protection**                      Wear protective goggles if necessary.

#### **Protection of skin and body**

Wear chemically resistant aprons or other impenetrable clothing if necessary.

**Hygiene measures**                      Wash hands after use.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Powder
Physical state	Solid
Color	Cyan
Smell	Slight plastic smell
Olfactory threshold	Weak

### Important information on health, safety and the environment

pH Not applicable

Measurement temperatures in degrees centigrade.

Specific temperatures / temperature ranges in which changes in the physical state can occur.

**Boiling point** Not applicable

**Fusion point** Softening point: about 90.

### Decomposition temperature (degrees Celsius)

Not determined

**Flash point** Not applicable

### Properties of the explosion

This product is considered non-explosive material under normal conditions of use.

**Oxidizing properties** This product is considered non-oxidizing material under normal conditions of use.

**Evaporation degree** (Butyl acetate = 1)  
Not applicable

**Steam pressure (Pa)** Not applicable

### Measuring temperature (degrees Celsius)

### Vapor density (air = 1)

Not applicable

**Density (g / cm<sup>3</sup>)** About 1.2 Measuring temperature (degrees Celsius) 25

**Relative density** About 1.2

**Viscosity (Pa · s)** Not applicable

**Solubility (g / l)** Insoluble

**Chloroform** Solubility (g / l): slightly soluble

### Octanol / water partition coefficient

Not available

### 9.2 Other information

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Volatility (%) 0.2 or less

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Explosion of powders like most organic fine powders.

### 10.2 Chemical stability

Stable

### 10.3 Possibility of hazardous reactions

It does not generate dangerous reactions during normal processing.

### 10.4 Conditions to avoid

Avoid dispersion of dust in the air.

### 10.5 Incompatible materials to avoid

Not applicable to normal use.

### 10.6 Hazardous decomposition products

It does not generate decomposition products.

## 11. TOXICOLOGICAL INFORMATION

*The toxicity data below are based on the results of reprography materials and the like.*

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Acute oral toxicity (LD50)

5000 or more [mg / kg] (Rat) (based on test results from other products with similar ingredients).

##### Acute dermal toxicity

Not available

##### Acute inhalation toxicity

Not available

#### Skin corrosion / irritation (PII)

≤ 1.0 (Rabbit) (based on test results on other products with similar ingredients).

#### Serious damage / irritation of the eyes

The components are not classified as hazardous (according to regulations (EC) 1272/2008).

## **Respiratory / cutaneous lesions**

0% (Marmot) (based on test results on other products with similar ingredients).

## **Carcinogenicity**

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.

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.

## **Germ cell Germ mutagenicity**

Negative (Ames test).

## **Reproductive toxicity**

It does not contain substances that are dangerous for reproductive health.

## **STOT-Single exposure**

Not available

## **STOT-Repeated exposure**

Not available

## **Suction hazard**

It does not contain substances considered to be risky for reproductive health.

## **12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

#### **Acute toxicity to the aquatic environment**

##### **Acute toxicity to fish (LC50)**

Not classified as toxic (Regulation (EC) No. 1272/2008).

##### **Acute toxicity for daphnia (LC50)**

Not classified as toxic (Regulation (EC) No. 1272/2008).

### **12.2 Persistence and degradability**

Not easily biodegradable

### **12.3 Bioaccumulative potential**

Bioaccumulation is unlikely

### **12.4 Mobility in the soil**

No detection of negative effects on the environment

## **12.5 Results of the PBT and vPvB assessment**

It is not a PBT according to REACH annex XIII

## **12.6 Other adverse effects**

It is little or not at all dangerous for the environment

## **13. DISPOSAL CONSIDERATIONS**

### **13.1 Disposal considerations**

<b>General informations</b>	Dispose of waste and residues in accordance with the requirements in accordance with the local laws in force.
<b>Disposal methods</b>	The disposal methods are based on the material supplied. Disposal must be carried out in compliance with the laws and regulations in force and with the characteristics of the material at the time of disposal. Make sure that the disposal procedures comply with local regulations.
<b>Precautions</b>	Do not dispose of the toner cartridge or toner in open flames. Hot toner may scatter and cause burns or other damage .

## **14. TRANSPORT INFORMATION**

### **14.1 UN/ID No**

Not applicable.

### **14.2 Official shipping designation**

Not applicable.

### **14.3 Danger classes related to transport**

Not applicable.

### **14.4 Packing group**

Not applicable.

### **14.5 Environmental hazards**

It is little or not at all dangerous for the environment.

### **14.6 Special precautions for users**

To preserve the quality, avoid direct sunlight.

### **14.7 Wholesale transport in accordance with MARPOL 73/78 and the IBC Code**

Not applicable.

## **15. REGULATORY INFORMATION**

### **15.1 Safety, health and environmental regulations and legislation specific to the substance or mixture**

The substance is not classified as hazardous according to Regulation (EC) No 1272/2008

The substance is not subject to regulation (EC) No 1907/2006 Annex XVII.

### **15.2 Evaluation of chemical safety**

Not applicable

## **16. OTHER INFORMATION**

### **References to the literature**

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, pp. 149-261

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 Occupation Exposure to Titanium Dioxide DRAFT "

ACGIH-TLV: Limit threshold values for chemicals and physical agents and biological exposure indexes

OSHA Tables Z: US Department of Labor, 29 CFR 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 values

Symbol (EC): Regulations (EC) No 1272/2008

91/155 / EEC EU Directive 91/155 / EEC

(EC) No 1907/2006 AnnexXVII

: Regulations (EC) No 1907/2006 Annex XVII

(EC) No 689/2008: Regulations (EC) No 689/2008

Abbreviations

OSHA PEL: PEL (Permissible Exposure Limit, Tolerable Exposure Limit), in Occupational Safety and Health Act

ACGIH-TLV: TLV (Threshold Limit Values) in the American Conference of Governmental Industrial Hygienists

REACH: (CE) No. 1907/2006: Council regulation concerning registration, evaluation, authorization and restriction of chemicals

SVHC: Substances of Very High Concern (extremely problematic substances)

ECHA: European Chemicals Agency (European Chemicals Agency)

DFG-MAK: MAK (Maximale Arbeitsplatz Konzentrationen) by Deutsche Forschungs Gemeinschaft

RoHS: Restriction of the use of certain hazardous substances in electrical equipment and electronic

TWA: Time Weighted Average (time weighted average)

IARC: International Agency for Research on Cancer (International Agency for Cancer Research)

NTP: National Toxicology Program

Disclaimer

This information is provided without warranty either expressed or implied, but has been compiled as accurately as possible by RICOH COMPANY, LTD.

The information concerns only the specified specific material and is not related to use in combination with other materials or processes.

RICOH COMPANY, LTD assumes no legal responsibility for the use or reliability of this information.

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 as amended  
Product Name : Print Cartridge Magenta IM C3500  
SDS Number : 842257  
Release Date 2018-07-23 Revision Date 2018-09-01

# RICOH

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Version 2.00

## 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

### 1.1. Product identifier

Product Name Print Cartridge Magenta IM C3500 (Magenta toner)  
SDS number 842257

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Print the image in printers and multi-purpose devices.

### 1.3 Information on the supplier of the safety data sheet

Importer

Ricoh Europe SCM B.V.

Blankenweg 24, 4612 RC Bergen op Zoom, The Netherlands

TEL: +31 164 280808 / FAX: +31 164 280820

<https://www.ricoh-europe.com>, [RESCM.ISI-global@ricoh-europe.com](mailto:RESCM.ISI-global@ricoh-europe.com)

Manufacture

Ricoh Co., Ltd.

Chome-3-6 Nakamagome, Ōta, Tokyo 143-8555, Japan

### 1.4 Urgent call phone number

Austria	+43 1 31 00472	Belgium	+32 (0)70 245 245
Czech Republic	+420 (0)267 125 32	Denmark	112
Finland	+358 (0)9 471 977	France	+33 (0)145 42 59 59
Germany	+49 511 67420	Hungary	+36 80 20 11 99
Ireland	111	Italy	+39 0266101029
Luxembourg	+352 8002 5500	Netherlands	+31 302748888
Poland	+48 (42) 253 84 00	Portugal	112
Slovakia	+421 2 4854 4511	Spain	+34 91 562 04 20
Sweden	+46 10 456 67 00	United Kingdom	111 (UK only)
Norway	113	Switzerland	+41 044 832 3411

Product Name : Print Cartridge Magenta IM C3500  
SDS Number : 842257  
Release Date 2018-07-23      Revision Date 2018-09-01

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## 2. IDENTIFICATION OF DANGERS

### 2.1 Classification of the substance or mixture

According to the following data, no classification and labeling are necessary according to Regulation (EC) no. 1272/2008.

### 2.2 Elements of the label

Not applicable

### 2.3 Other hazards

No hazards are foreseen under normal conditions of use.



### 3. COMPOSITION / INFORMATION ON INGREDIENTS

#### 3.1 Mixtures

Name chemistry	% by weight	CAS NO	EC number	Classification (67/548)	Indications of danger	Registration number REACH
Polyester resin	60-90	Confidential	Confidential	None	None	Confidential
Wax	1-20	Confidential	Confidential	None	None	Confidential
Organic pigment	1-20	Confidential	Confidential	None	None	Confidential
Titanium oxide	0.1-1	13463-67-7	236-675-5	None	None	01-2119489379- 17- xxxx
Silica	<10	7631-86-9	231-545-4	None	None	01-2119379499- 16-- xxxx

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.

Full text of H indications: see Section 16

Note: components marked as "Not certified" are exempt from registration

### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

**Inhalation**                      Move away from the exposure area, get fresh air and rinse your mouth with water. Consult a doctor.

**Contact with the skin**      Wash thoroughly with soap and water.

**Eye contact**                      Wash with plenty of water until the particles are removed. Consult a doctor.

**Ingestion**                              Rinse the mouth with water and then drink plenty of water or milk.

#### 4.2 Most important symptoms and effects, both acute and delayed

##### **Toxicity**

**Eyes**                                      No known effect

**Skin**                                        No known effect

**Inhalation**                              No known effect

##### **Chronic effects**

**Main symptoms**                      Over-exposure may give rise to mild respiratory irritation

#### 4.3 Indication for immediate medical consultation and adequate medical treatment

Immediate medical intervention is not required.

## 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

**Fire fighting** CO2, dry chemicals, foam or water

### **Unsuitable extinguishing media**

Do not use direct water jet to prevent fire spread.

### 5.2 Special hazards arising from the substance or mixture

**Specific risks** When dispersed finely in the air, it can form explosive air-dust mixtures.

### 5.3 Special protective actions for firefighters

**Specific method** No special fire fighting equipment is required. You can use fire extinguishers or sprinklers.

### **Fire Brigade Protection**

Wear gloves, glasses and a mask if necessary.

## 6. MEASURES IN CASE OF ACCIDENTAL RELEASE

### 6.1 Personal precautions, protective equipment and emergency procedures

Do not inhale dust.

### 6.2 Environmental precautions

Do not discharge into drains or watercourses.

### 6.3 Methods and materials for containment and cleaning up

Fine dust may form explosive dust-air mixtures. Make sure that there is no flame and remove them if necessary. Slowly sweep the spilled dust and clean the residues with a damp cloth. If you want to use a vacuum cleaner, choose a dust-proof type.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

#### **Handling**

**Technical measurements** Not applicable

#### **Advice for safe handling**

Do not handle in areas with wind or air currents as dust may penetrate the eyes. Avoid inhaling dust.

## **7.2 Conditions for safe storage, including any incompatibilities**

Keep out of reach of children.

To preserve the quality, store in a dry and well-ventilated place where the temperature does not exceed along 35 degrees centigrade and without direct exposure to sunlight.

**Packaging material** Not applicable

## **7.3 Specific end use**

Print the image in printers and multi-purpose devices.

## **8. EXPOSURE CONTROL / INDIVIDUAL PROTECTION**

### **8.1 Control parameters**

#### **Exposure limit values**

**Prepared** USA OSHA PEL (TWA): 15mg / m3 (total powder) 5.0mg / m3 (respirable fraction).  
ACGIH TLV (TWA): 10mg / m3 (Inhalable fraction) 3.0mg / m3 (respirable fraction).  
DFG MAK: 4.0mg / m3 (Total powder) 1.5mg / m3 (Breathable fraction)

**Substance** Not applicable

### **8.2 Exposure controls**

#### **Occupational exposure control**

Use in adequately ventilated areas. No precautions required in case of appropriate use.

#### **Control of exposure in the environment**

No precautions are necessary under normal use conditions.

### **8.3 Recommended measures for risk management, such as personal protective equipment (PPE)**

**Respiratory protections** Normal use does not require any precaution. If the exposure concentration limit is exceeded, use an approved respirator.

**Hand protection** Use vinyl or rubber gloves if necessary.

**Eye protection** Wear protective goggles if necessary.

#### **Protection of skin and body**

Wear chemically resistant aprons or other impenetrable clothing if necessary.

**Hygiene measures** Wash hands after use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Powder
Physical state	Solid
Color	Magenta
Smell	Slight plastic smell
Olfactory threshold	Weak

### Important information on health, safety and the environment

pH Not applicable

Measurement temperatures in degrees centigrade.

Specific temperatures / temperature ranges in which changes in the physical state can occur.

Boiling point Not applicable

Fusion point Softening point: about 90.

### Decomposition temperature (degrees Celsius)

Not determined

Flash point Not applicable

### Properties of the explosion

This product is considered non-explosive material under normal conditions of use.

Oxidizing properties This product is considered non-oxidizing material under normal conditions of use.

Evaporation degree (Butyl acetate = 1)  
Not applicable

Steam pressure (Pa) Not applicable

### Measuring temperature (degrees Celsius)

### Vapor density (air = 1)

Not applicable

Density (g / cm<sup>3</sup>) About 1.2 Measuring temperature (degrees Celsius) 25

Relative density About 1.2

Viscosity (Pa · s) Not applicable

Solubility (g / l) Insoluble

Chloroform Solubility (g / l): slightly soluble

### Octanol / water partition coefficient

Not available

### 9.2 Other information

Product Name : Print Cartridge Magenta IM C3500  
SDS Number : 842257  
Release Date 2018-07-23 Revision Date 2018-09-01

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Volatility (%) 0.2 or less

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Explosion of powders like most organic fine powders.

### 10.2 Chemical stability

Stable

### 10.3 Possibility of hazardous reactions

It does not generate dangerous reactions during normal processing.

### 10.4 Conditions to avoid

Avoid dispersion of dust in the air.

### 10.5 Incompatible materials to avoid

Not applicable to normal use.

### 10.6 Hazardous decomposition products

It does not generate decomposition products.

## 11. TOXICOLOGICAL INFORMATION

*The toxicity data below are based on the results of reprography materials and the like.*

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Acute oral toxicity (LD50)

5000 or more [mg / kg] (Rat) (based on test results from other products with similar ingredients).

##### Acute dermal toxicity

Not available

##### Acute inhalation toxicity

Not available

#### Skin corrosion / irritation (PII)

≤ 1.0 (Rabbit) (based on test results on other products with similar ingredients).

#### Serious damage / irritation of the eyes

The components are not classified as hazardous (according to regulations (EC) 1272/2008).

## **Respiratory / cutaneous lesions**

0% (Marmot) (based on test results on other products with similar ingredients).

## **Carcinogenicity**

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.

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.

## **Germ cell Germ mutagenicity**

Negative (Ames test).

## **Reproductive toxicity**

It does not contain substances that are dangerous for reproductive health.

## **STOT-Single exposure**

Not available

## **STOT-Repeated exposure**

Not available

## **Suction hazard**

It does not contain substances considered to be risky for reproductive health.

## **12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

#### **Acute toxicity to the aquatic environment**

##### **Acute toxicity to fish (LC50)**

Not classified as toxic (Regulation (EC) No. 1272/2008).

##### **Acute toxicity for daphnia (LC50)**

Not classified as toxic (Regulation (EC) No. 1272/2008).

### **12.2 Persistence and degradability**

Not easily biodegradable

### **12.3 Bioaccumulative potential**

Bioaccumulation is unlikely

### **12.4 Mobility in the soil**

No detection of negative effects on the environment

## **12.5 Results of the PBT and vPvB assessment**

It is not a PBT according to REACH annex XIII

## **12.6 Other adverse effects**

It is little or not at all dangerous for the environment

## **13. DISPOSAL CONSIDERATIONS**

### **13.1 Disposal considerations**

- General informations**      Dispose of waste and residues in accordance with the requirements in accordance with the local laws in force.
- Disposal methods**      The disposal methods are based on the material supplied. Disposal must be carried out in compliance with the laws and regulations in force and with the characteristics of the material at the time of disposal. Make sure that the disposal procedures comply with local regulations.
- Precautions**      Do not dispose of the toner cartridge or toner in open flames. Hot toner may scatter and cause burns or other damage .

## **14. TRANSPORT INFORMATION**

### **14.1 UN/ID No**

Not applicable.

### **14.2 Official shipping designation**

Not applicable.

### **14.3 Danger classes related to transport**

Not applicable.

### **14.4 Packing group**

Not applicable.

### **14.5 Environmental hazards**

It is little or not at all dangerous for the environment.

### **14.6 Special precautions for users**

To preserve the quality, avoid direct sunlight.

### **14.7 Wholesale transport in accordance with MARPOL 73/78 and the IBC Code**

Not applicable.

## **15. REGULATORY INFORMATION**

### **15.1 Safety, health and environmental regulations and legislation specific to the substance or mixture**

The substance is not classified as hazardous according to Regulation (EC) No 1272/2008

The substance is not subject to regulation (EC) No 1907/2006 Annex XVII.

### **15.2 Evaluation of chemical safety**

Not applicable

## **16. OTHER INFORMATION**

### **References to the literature**

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, pp. 149-261

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 Occupation Exposure to Titanium Dioxide DRAFT "

ACGIH-TLV: Limit threshold values for chemicals and physical agents and biological exposure indexes

OSHA Tables Z: US Department of Labor, 29 CFR 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 values

Symbol (EC): Regulations (EC) No 1272/2008

91/155 / EEC EU Directive 91/155 / EEC

(EC) No 1907/2006 Annex XVII

: Regulations (EC) No 1907/2006 Annex XVII

(EC) No 689/2008: Regulations (EC) No 689/2008

Abbreviations

OSHA PEL: PEL (Permissible Exposure Limit, Tolerable Exposure Limit), in Occupational Safety and Health Act

ACGIH-TLV: TLV (Threshold Limit Values) in the American Conference of Governmental Industrial Hygienists

REACH: (CE) No. 1907/2006: Council regulation concerning registration, evaluation, authorization and restriction of chemicals



SVHC: Substances of Very High Concern (extremely problematic substances)

ECHA: European Chemicals Agency (European Chemicals Agency)

DFG-MAK: MAK (Maximale Arbeitsplatz Konzentrationen) by Deutsche Forschungs Gemeinschaft

RoHS: Restriction of the use of certain hazardous substances in electrical equipment and electronic

TWA: Time Weighted Average (time weighted average)

IARC: International Agency for Research on Cancer (International Agency for Cancer Research)

NTP: National Toxicology Program

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# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 as amended

Product Name : Print Cartridge Yellow IM C3500

SDS Number : 842256

Release Date 2018-08-24

Revision Date 2018-09-01

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Version 2.00

## 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

### 1.1. Product identifier

Product Name Print Cartridge Yellow IM C3500 (Yellow toner)

SDS number 842256

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended use Print the image in printers and multi-purpose devices.

### 1.3 Information on the supplier of the safety data sheet

Importer

Ricoh Europe SCM B.V.

Blankenweg 24, 4612 RC Bergen op Zoom, The Netherlands

TEL: +31 164 280808 / FAX: +31 164 280820

<https://www.ricoh-europe.com>, [RESCM.ISI-global@ricoh-europe.com](mailto:RESCM.ISI-global@ricoh-europe.com)

Manufacture

Ricoh Co., Ltd.

Chome-3-6 Nakamagome, Ōta, Tokyo 143-8555, Japan

### 1.4 Urgent call phone number

Austria	+43 1 31 00472	Belgium	+32 (0)70 245 245
Czech Republic	+420 (0)267 125 32	Denmark	112
Finland	+358 (0)9 471 977	France	+33 (0)145 42 59 59
Germany	+49 511 67420	Hungary	+36 80 20 11 99
Ireland	111	Italy	+39 0266101029
Luxembourg	+352 8002 5500	Netherlands	+31 302748888
Poland	+48 (42) 253 84 00	Portugal	112
Slovakia	+421 2 4854 4511	Spain	+34 91 562 04 20
Sweden	+46 10 456 67 00	United Kingdom	111 (UK only)
Norway	113	Switzerland	+41 044 832 3411

Product Name : Print Cartridge Yellow IM C3500  
SDS Number : 842256  
Release Date 2018-08-24      Revision Date 2018-09-01

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Version 2.00

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## **2. IDENTIFICATION OF DANGERS**

### **2.1 Classification of the substance or mixture**

According to the following data, no classification and labeling are necessary according to Regulation (EC) no. 1272/2008.

### **2.2 Elements of the label**

Not applicable

### **2.3 Other hazards**

No hazards are foreseen under normal conditions of use.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

#### 3.1 Mixtures

Name chemistry	% by weight	CAS NO	EC number	Classification (67/548)	Indications of danger	Registration number REACH
Polyester resin	60-90	Confidential	Confidential	None	None	Confidential
Wax	1-20	Confidential	Confidential	None	None	Confidential
Organic pigment	1-20	Confidential	Confidential	None	None	Confidential
Titanium dioxide	0.1-1	13463-67-7	236-675-5	None	None	01-2119489379- 17- xxxx
Silica	<10	7631-86-9	231-545-4	None	None	01-2119379499- 16-- xxxx

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.

Full text of H indications: see Section 16

Note: components marked as "Not certified" are exempt from registration.

### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

**Inhalation**                      Move away from the exposure area, get fresh air and rinse your mouth with water. Consult a doctor.

**Contact with the skin**      Wash thoroughly with soap and water.

**Eye contact**                      Wash with plenty of water until the particles are removed. Consult a doctor.

**Ingestion**                              Rinse the mouth with water and then drink plenty of water or milk.

#### 4.2 Most important symptoms and effects, both acute and delayed

##### **Toxicity**

**Eyes**                                      No known effect

**Skin**                                        No known effect

**Inhalation**                              No known effect

##### **Chronic effects**

**Main symptoms**                      Over-exposure may give rise to mild respiratory irritation

#### 4.3 Indication for immediate medical consultation and adequate medical treatment

Immediate medical intervention is not required.

## 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

**Fire fighting** CO2, dry chemicals, foam or water

### **Unsuitable extinguishing media**

Do not use direct water jet to prevent fire spread.

### 5.2 Special hazards arising from the substance or mixture

**Specific risks** When dispersed finely in the air, it can form explosive air-dust mixtures.

### 5.3 Special protective actions for firefighters

**Specific method** No special fire fighting equipment is required. You can use fire extinguishers or sprinklers.

### **Fire Brigade Protection**

Wear gloves, glasses and a mask if necessary.

## 6. MEASURES IN CASE OF ACCIDENTAL RELEASE

### 6.1 Personal precautions, protective equipment and emergency procedures

Do not inhale dust.

### 6.2 Environmental precautions

Do not discharge into drains or watercourses.

### 6.3 Methods and materials for containment and cleaning up

Fine dust may form explosive dust-air mixtures. Make sure that there is no flame and remove them if necessary. Slowly sweep the spilled dust and clean the residues with a damp cloth. If you want to use a vacuum cleaner, choose a dust-proof type.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

#### **Handling**

**Technical measurements** Not applicable

#### **Advice for safe handling**

Do not handle in areas with wind or air currents as dust may penetrate the eyes. Avoid inhaling dust.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep out of reach of children.

To preserve the quality, store in a dry and well-ventilated place where the temperature does not exceed along 35 degrees centigrade and without direct exposure to sunlight.

**Packaging material** Not applicable

### **7.3 Specific end use**

Print the image in printers and multi-purpose devices.

## **8. EXPOSURE CONTROL / INDIVIDUAL PROTECTION**

### **8.1 Control parameters**

#### **Exposure limit values**

**Prepared** USA OSHA PEL (TWA): 15mg / m3 (total powder) 5.0mg / m3 (respirable fraction).

ACGIH TLV (TWA): 10mg / m3 (Inhalable fraction) 3.0mg / m3 (respirable fraction).

DFG MAK: 4.0mg / m3 (Total powder) 1.5mg / m3 (Breathable fraction)

**Substance** Not applicable

### **8.2 Exposure controls**

#### **Occupational exposure control**

Use in adequately ventilated areas. No precautions required in case of appropriate use.

#### **Control of exposure in the environment**

No precautions are necessary under normal use conditions.

### **8.3 Recommended measures for risk management, such as personal protective equipment (PPE)**

**Respiratory protections** Normal use does not require any precaution. If the exposure concentration limit is exceeded, use an approved respirator.

**Hand protection** Use vinyl or rubber gloves if necessary.

**Eye protection** Wear protective goggles if necessary.

#### **Protection of skin and body**

Wear chemically resistant aprons or other impenetrable clothing if necessary.

**Hygiene measures** Wash hands after use.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Powder
Physical state	Solid
Color	Yellow
Smell	Slight plastic smell
Olfactory threshold	Weak

### Important information on health, safety and the environment

pH Not applicable

Measurement temperatures in degrees centigrade.

Specific temperatures / temperature ranges in which changes in the physical state can occur.

**Boiling point** Not applicable

**Fusion point** Softening point: about 90.

### Decomposition temperature (degrees Celsius)

Not determined

**Flash point** Not applicable

### Properties of the explosion

This product is considered non-explosive material under normal conditions of use.

**Oxidizing properties** This product is considered non-oxidizing material under normal conditions of use.

**Evaporation degree** (Butyl acetate = 1)  
Not applicable

**Steam pressure (Pa)** Not applicable

### Measuring temperature (degrees Celsius)

### Vapor density (air = 1)

Not applicable

**Density (g / cm<sup>3</sup>)** About 1.2 Measuring temperature (degrees Celsius) 25

**Relative density** About 1.2

**Viscosity (Pa · s)** Not applicable

**Solubility (g / l)** Insoluble

**Chloroform** Solubility (g / l): slightly soluble

### Octanol / water partition coefficient

Not available

### 9.2 Other information

Product Name : Print Cartridge Yellow IM C3500  
SDS Number : 842256  
Release Date 2018-08-24 Revision Date 2018-09-01

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Volatility (%) 0.2 or less

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Explosion of powders like most organic fine powders.

### 10.2 Chemical stability

Stable

### 10.3 Possibility of hazardous reactions

It does not generate dangerous reactions during normal processing.

### 10.4 Conditions to avoid

Avoid dispersion of dust in the air.

### 10.5 Incompatible materials to avoid

Not applicable to normal use.

### 10.6 Hazardous decomposition products

It does not generate decomposition products.

## 11. TOXICOLOGICAL INFORMATION

*The toxicity data below are based on the results of reprography materials and the like.*

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Acute oral toxicity (LD50)

5000 or more [mg / kg] (Rat) (based on test results from other products with similar ingredients).

##### Acute dermal toxicity

Not available

##### Acute inhalation toxicity

Not available

#### Skin corrosion / irritation (PII)

≤ 1.0 (Rabbit) (based on test results on other products with similar ingredients).

#### Serious damage / irritation of the eyes

The components are not classified as hazardous (according to regulations (EC) 1272/2008).



## **Respiratory / cutaneous lesions**

0% (Marmot) (based on test results on other products with similar ingredients).

## **Carcinogenicity**

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.

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.

## **Germ cell Germ mutagenicity**

Negative (Ames test).

## **Reproductive toxicity**

It does not contain substances that are dangerous for reproductive health.

## **STOT-Single exposure**

Not available

## **STOT-Repeated exposure**

Not available

## **Suction hazard**

It does not contain substances considered to be risky for reproductive health.

## **12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

#### **Acute toxicity to the aquatic environment**

##### **Acute toxicity to fish (LC50)**

Not classified as toxic (Regulation (EC) No. 1272/2008).

##### **Acute toxicity for daphnia (LC50)**

Not classified as toxic (Regulation (EC) No. 1272/2008).

### **12.2 Persistence and degradability**

Not easily biodegradable

### **12.3 Bioaccumulative potential**

Bioaccumulation is unlikely

### **12.4 Mobility in the soil**

No detection of negative effects on the environment

## 12.5 Results of the PBT and vPvB assessment

It is not a PBT according to REACH annex XIII

## 12.6 Other adverse effects

It is little or not at all dangerous for the environment

## **13. DISPOSAL CONSIDERATIONS**

### 13.1 Disposal considerations

- General informations** Dispose of waste and residues in accordance with the requirements in accordance with the local laws in force.
- Disposal methods** The disposal methods are based on the material supplied. Disposal must be carried out in compliance with the laws and regulations in force and with the characteristics of the material at the time of disposal. Make sure that the disposal procedures comply with local regulations.
- Precautions** Do not dispose of the toner cartridge or toner in open flames. Hot toner may scatter and cause burns or other damage .

## **14. TRANSPORT INFORMATION**

### 14.1 UN/ID No

Not applicable.

### 14.2 Official shipping designation

Not applicable.

### 14.3 Danger classes related to transport

Not applicable.

### 14.4 Packing group

Not applicable.

### 14.5 Environmental hazards

It is little or not at all dangerous for the environment.

### 14.6 Special precautions for users

To preserve the quality, avoid direct sunlight.

### 14.7 Wholesale transport in accordance with MARPOL 73/78 and the IBC Code

Not applicable.

## **15. REGULATORY INFORMATION**

### 15.1 Safety, health and environmental regulations and legislation specific to the substance or mixture

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The substance is not classified as hazardous according to Regulation (EC) No 1272/2008

The substance is not subject to regulation (EC) No 1907/2006 Annex XVII.

### **15.2 Evaluation of chemical safety**

Not applicable

## **16. OTHER INFORMATION**

### **References to the literature**

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, pp. 149-261

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 Occupation Exposure to Titanium Dioxide DRAFT "

ACGIH-TLV: Limit threshold values for chemicals and physical agents and biological exposure indexes

OSHA Tables Z: US Department of Labor, 29 CFR 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 values

Symbol (EC): Regulations (EC) No 1272/2008

91/155 / EEC EU Directive 91/155 / EEC

(EC) No 1907/2006 Annex XVII

: Regulations (EC) No 1907/2006 Annex XVII

(EC) No 689/2008: Regulations (EC) No 689/2008

Abbreviations

OSHA PEL: PEL (Permissible Exposure Limit, Tolerable Exposure Limit), in Occupational Safety and Health Act

ACGIH-TLV: TLV (Threshold Limit Values) in the American Conference of Governmental Industrial Hygienists

REACH: (CE) No. 1907/2006: Council regulation concerning registration, evaluation, authorization and restriction of chemicals

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SVHC: Substances of Very High Concern (extremely problematic substances)

ECHA: European Chemicals Agency (European Chemicals Agency)

DFG-MAK: MAK (Maximale Arbeitsplatz Konzentrationen) by Deutsche Forschungs Gemeinschaft

RoHS: Restriction of the use of certain hazardous substances in electrical equipment and  
electronic

TWA: Time Weighted Average (time weighted average)

IARC: International Agency for Research on Cancer (International Agency for Cancer Research)

NTP: National Toxicology Program

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