



---

Products Name: PHOTOCONDUCTOR

Prepared Date:16-Jul-2002

Revised Date: 26-Aug-2002

---

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: PHOTOCONDUCTOR  
used for: Magicolor 2300DL

### Supplier Identification:

Minolta Co., Ltd.  
3-13, 2-Chome, Azuchi-Machi, Chuo-Ku, Osaka 541-8556 JAPAN  
Telephone: +81-6-6271-2251 Facsimile: +81-6-6266-1010

### Contact Point:

Minolta Co., Ltd. (Quality & Ecology Division)  
2-30, Toyotsu-Cho, Suita-Shi, Osaka 564-0051 Japan  
Facsimile: +81-6-6386-6254

---

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### Major Ingredients:

[Generic Name]	[CAS No.]	[%]
Substrate		>97
Aluminum drum	7429-90-5	
Coating layer		< 3
Binder resin	+++	
Photosensitive material	+++	
Pigment	+++	

+++ : Supplier's confidential information

### Hazardous Ingredients:

None present

---



---

Products Name: PHOTOCONDUCTOR

Prepared Date: 16-Jul-2002

Revised Date: 26-Aug-2002

---

### 3. HAZARDS IDENTIFICATION

Classification : Not classified as dangerous. (1999/45/EC)

Most Important Hazards and Effects of the Products

For Human Health: No symptoms expected with intended use.

For the Environment: No data are available on the adverse effects of this product on the environment.

For Others: None

Specific Hazards: None

---

### 4. FIRST-AID MEASURES

Symptoms of Overexposure: No symptoms expected with intended use.

Routes of Entry: None

Information

Inhalation: No treatment is required.

Skin Contact: No treatment is required.

Eye Contact: No treatment is required.

Ingestion: No treatment is required.

Note to Physician: None

---

### 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: CO2, water, foam and dry chemical

Extinguishing Media to Avoid: None

Special Firefighting Procedures: None

Fire and Explosion Hazards: This material has no unusual fire or explosive hazards.

Protection of Firefighters: No special equipment is required.

---

### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Not applicable with intended use.

Environmental Precautions: Not applicable with intended use.

Methods for Cleaning Up: Not applicable with intended use.

---

### 7. HANDLING AND STORAGE

Handling

Technical Measures: None

Precautions: This product will be scorched in the case of fire.

Safe Handling Advice: None.

Storage

Technical Measures: None

Storage Conditions: Keep and Store in a cool and dry place.

Incompatible Products: None

Packing Materials: Cardboard box designated by Minolta.

---



Products Name: PHOTOCONDUCTOR

Prepared Date: 16-Jul-2002

Revised Date: 26-Aug-2002

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures

Ventilation: None required with intended use.

Control Parameters

OSHA-PEL(USA): Not Applicable ACGIH-TLV(USA): Not Applicable

DFG-MAK(EC): Not Applicable Worksafe-TWA(Austl): Not Applicable

Personal Protective Equipment

None required when used as intended in Minolta equipment.

Hygiene Measures: Wash hands after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State: Solid Form: Cylinder Color: Green

Odor: Odorless

<<Results of the coated compounds on the aluminum substrate.>>

Boiling Point: Not applicable

Melting/Softening Point: No data available

Flash Point: Not applicable

pH: Not applicable

Explosion Properties: Not applicable

Density(g/cm³): 2.7

Solubility in water: insoluble

Flammability: Not applicable

Oxidizing Properties: No data available

Ignition Temperature(°C): No data available

Vapor Pressure: Not applicable

Partition Coefficient, n-Octanol/Water: Not applicable

(\* = Based on data for other Minolta Products with similar ingredients)

10. STABILITY AND REACTIVITY

Stability: Stable [ X ] Unstable [ ]

Hazardous Reactions: None

Conditions to avoid: None

Materials to Avoid: None

Hazardous Decomposition Products: CO, CO2



---

Products Name: PHOTOCONDUCTOR

Prepared Date: 16-Jul-2002

Revised Date: 26-Aug-2002

---

#### 11. TOXICOLOGICAL INFORMATION

Health Effects from Exposure: No symptoms expected with intended use.

##### Toxicological Data

<<Result of the coated compounds on the aluminum substrate.>>

##### Acute Toxicity:

Inhalation, LC50(mg/l): Not applicable  
Ingestion(oral), LD50(mg/kg): >2000 (Rat)  
Dermal, LD50(mg/kg): Not applicable  
Eye irritation: Very slight irritation (Rabbit)  
Skin irritation: Non irritant (Rabbit)  
Skin sensitizer: No data available  
Mutagenicity: Negative (AMES test)

Local Effects: No data available

Chronic Toxicity or Long Term Toxicity: None

##### Carcinogenicity

IARC Monographs: Not listed  
NTP(USA): Not listed  
OSHA Regulated(USA): Not listed

---

#### 12. ECOLOGICAL INFORMATION

No data available

---

#### 13. DISPOSAL CONSIDERATION

##### Appropriate Methods of Disposal

Waste may be disposed or incinerated under conditions which meet all federal, state and local environmental regulations.

---

#### 14. TRANSPORT INFORMATION

Special Precautions: None

Information on Code and Classifications According to International Regulations

UN Classification: None

---



---

Products Name: PHOTOCONDUCTOR

Prepared Date: 16-Jul-2002

Revised Date: 26-Aug-2002

---

## 15. REGULATORY INFORMATION

### US Information

Information on the label: Not required

SARA(Superfund Amendments and Reauthorization Act) Title III

302 Extreme Hazardous Substance: None

311/312 Hazard Categories: None

313 Reportable Ingredients: None

California Proposition 65:

This product contains no chemical substances subject to California Proposition 65.

### EU Information

Information on the label(1999/45/EC and 67/548/EEC):

Symbol & Indication: Not required

R-Phrase: Not required

S-Phrase: Not required

Article 14 (2.1) of Directive 1999/45/EC is not applicable to this product.

---

## 16. OTHER INFORMATION

NFPA Hazard Rating: The National Fire Protection Agency(USA):

Health: 0 Flammability: 1 Reactivity: 0

HMIS RATING: The National Paint and Coating Association(USA):

Health: 0 Flammability: 1 Reactivity: 0

### Recommended Uses:

Photoconductor for Electrophotographic Equipment

### Restrictions:

Information on this data sheet represents our current data and the best opinion as to the proper use in handling of this product under normal conditions specified in our User's Manual. However, neither Minolta Co., Ltd. nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we do not guarantee that these are the only hazards which exist.

### Literature References:

ANSI Z400.1-1993

ISO 11014-1

Commission Directive 91/155/EEC

---



---

Product Name: TONER CARTRIDGE (BLACK)

Prepared Date: 20-Nov-2001

Revised Date: 26-Aug-2002

---

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: TONER CARTRIDGE (BLACK)

used for: Magicolor 2300DL

Supplier Identification:

Minolta Co., Ltd.

3-13, 2-Chome, Azuchi-Machi, Chuo-Ku, Osaka 541-8556 JAPAN

Telephone: +81-6-6271-2251 Facsimile: +81-6-6266-1010

Contact Point:

Minolta Co., Ltd. (Quality &amp; Ecology Division)

Facsimile: +81-6-6386-6254

---

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance [ ] Preparation [ X ]

Major Ingredients:

[Generic Name]	[CAS No.]	[%]
Styrene-acrylic resin	+++	80-90
Wax	+++	10-20
Carbon black	1333-86-4	1-10
Amorphous silica	7631-86-9	1-10
Titanium compound	+++	1-10

+++ : Supplier's confidential information

Hazardous Ingredients:

Chemical Name: Carbon black ( 7-12%)

CAS No.: 1333-86-4

EEC-No.: 215-609-9

OSHA Z-Tables(USA): 3.5mg/m3

ACGIH-TLV(USA): 3.5mg/m3

NTP(USA): Not listed

IARC Monographs: Group 2B

Symbol(EC): Not listed

R-Phrase(EC): Not listed

DFG-MAK(GER): III 3B

Worksafe-TWA(Austl): 3mg/m3

---



---

Product Name: TONER CARTRIDGE (BLACK)

Prepared Date: 20-Nov-2001

Revised Date: 26-Aug-2002

---

### 3. HAZARDS IDENTIFICATION

Classification : Not classified as dangerous. (1999/45/EC)

Most Important Hazards and Effects of the Products

For Human Health: This toner is not classified as a human carcinogen.  
No symptoms expected with intended use.

For the Environment: No data are available on the adverse effects of  
this product on the environment.

For Others: None

Specific Hazards: Dust explosion (like most finely divided organic powders)

---

### 4. FIRST-AID MEASURES

Symptoms of Overexposure: No symptoms expected with intended use.

Routes of Entry: Eye contact, inhalation, ingestion

Information

Inhalation: If symptoms are experienced, remove source of  
contamination or move victim to fresh air and obtain medical advice.

Skin Contact: Flush with gently flowing water (preferably lukewarm) and  
soap for 15 minutes or until particle is removed. If irritation  
does occur, obtain medical advice.

Eye Contact: Do not allow victim to rub eye(s). Flush with gently flowing  
water (preferably lukewarm) for 15 minutes or until particle is  
removed. Have victim look right and left, and, then up and down.  
If irritation does occur, obtain medical attention. DO NOT attempt  
to manually remove anything stuck to the eye(s).

Ingestion: If irritation or discomfort occurs, obtain medical  
attention immediately.

Note to Physician: None

---

### 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: CO<sub>2</sub>, water spray, foam and dry chemical  
Extinguishing Media to Avoid: Full water jet

Special Firefighting Procedures: None

Fire and Explosion Hazards: If dispersed in air, like most finely  
divided organic powders, may form an explosive mixture.

Protection of Firefighters: Use self-contained breathing apparatus (SCBA).

---

### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: None

Environmental Precautions: None

Methods for Cleaning Up: Wipe off with paper or cloth.

DO NOT use vacuum cleaner when a large amount is released. It, like  
most finely divided organic powders, may create a dust explosion.

---



---

Product Name: TONER CARTRIDGE (BLACK)

Prepared Date: 20-Nov-2001

Revised Date: 26-Aug-2002

---

## 7. HANDLING AND STORAGE

### Handling

Technical Measures/Precautions: None

Safe Handling Advice: Try not to disperse the particles.

### Storage

Technical Measures: None

Storage Conditions: Keep container closed.

Store in a cool and dry place.

Keep out of reach of children.

Incompatible Products: None

Packing Materials: Bottles or Cartridge designated by Minolta.

---

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Measures

Ventilation: None required with intended use.

### Control Parameters(As total dust)

OSHA-PEL(USA): 15mg/m<sup>3</sup>

ACGIH-TLV(USA): 10mg/m<sup>3</sup>

DFG-MAK(GER): 4mg/m<sup>3</sup>

Worksafe-TWA(Austl.): 10mg/m<sup>3</sup>

### Personal Protective Equipment

None required when used as intended in Minolta equipment.

For use other than normal customer-operating procedures (such as in bulk toner processing facilities), goggles and respirators may be required.

Hygiene Measures: Wash hands after handling.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Physical State: Solid      Form: Powder      Color: Black

Odor:      Slight mild odor

Particle Size(µm):      6.5

PH/Boiling Point(°C):      Not applicable

Melting Point(°C):      No data available

Softening Point(°C):      125

Flash Point(°C):      Not applicable

Ignition Temperature(°C):      No data available

Explosion Properties:      No data available

Vapor Pressure:      Not applicable

Density(g/cm<sup>3</sup>):      1.2

Solubility in water:      Negligible

Oxidizing Properties:      No data available

Partition Coefficient, n-Octanol/Water: Not applicable

---





---

Product Name: TONER CARTRIDGE (BLACK)

Prepared Date: 20-Nov-2001

Revised Date: 26-Aug-2002

---

#### 10. STABILITY AND REACTIVITY

Stability: Stable [ X ]                      Unstable [   ]

Hazardous Reactions: Dust explosion, like most finely divided organic powders.

Conditions to avoid: Electric discharge, throwing into fire.

Materials to Avoid: Oxidizing materials.

Hazardous Decomposition Products: CO, CO2

---

#### 11. TOXICOLOGICAL INFORMATION

Health Effects from Exposure: No symptoms expected with intended use.

##### Toxicological Data

##### Acute Toxicity:

Inhalation, LC50(mg/l):                      >5.14 (Rat, 4hour)  
(This was the highest attainable concentration.)

Ingestion(oral), LD50(mg/kg): >2000 (Rat)

Dermal, LD50(mg/kg):                      No data available

Eye irritation:                              Minimal irritant (Rabbit)

Skin irritation:                              Non irritant (Rabbit)

Skin sensitizer:                              Non sensitizer (Guinea pig)

Mutagenicity:                              Negative (AMES test)

(\* = Based on data for other Minolta Products with similar ingredients)

Local Effects: see Chronic Toxicity or Long term Toxicity

##### Chronic Toxicity or Long Term Toxicity:

Prolonged inhalation of excessive dust may cause lung damage. It is attributed to "lung overloading", a generic response to excessive amounts of any dust retained in the lungs for a prolonged interval. Use of this product, as intended, does not result in inhalation of excessive dust.

In a study in rats by chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of rats in the high concentration(16mg/m<sup>3</sup>) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle(4mg/m<sup>3</sup>) exposure group. But no pulmonary change was reported in the lowest(1mg/m<sup>3</sup>) exposure group, the most relevant level to potential human exposures.

##### Carcinogenicity

IARC Monographs/NTP(USA)/OSHA Regulated(USA):                      Not listed

In 1996 the IARC reevaluated carbon black as a Group 2B carcinogen (possible human carcinogen). This evaluation is given to Carbon Black for which there is inadequate human evidence, but sufficient animal evidence. The latter is based upon the development of lung tumors in rats receiving chronic inhalation exposures to free carbon black at levels that induce particle overload of the lung.

---



---

Product Name: TONER CARTRIDGE (BLACK)

Prepared Date: 20-Nov-2001

Revised Date: 26-Aug-2002

---

Studies performed in animal models other than rats have not demonstrated an association between carbon black and lung tumors. Moreover, a two-year cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats.

---

#### 12. ECOLOGICAL INFORMATION

No data are available on the adverse effects of this material on the environment.

---

#### 13. DISPOSAL CONSIDERATION

Appropriate Methods of Disposal

Preparation (community provisions):

Waste may be disposed or incinerated under conditions which meet all federal, state and local environmental regulations.

Contaminated Packaging:

Waste may be disposed or incinerated under conditions which meet all federal, state and local environmental regulations.

Precautions:

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

---

#### 14. TRANSPORT INFORMATION

Special Precautions: None

Information on Code and Classifications According to International Regulations

UN Classification: None

---

#### 15. REGULATORY INFORMATION

US Information

Information on the label: Not required

TSCA (Toxic Substances Control Act):

All chemical substances in this product comply with all applicable rules or order under TSCA.

SARA (Superfund Amendments and Reauthorization Act) Title III

302 Extreme Hazardous Substance: None

311/312 Hazard Categories/313 Reportable Ingredients: None

California Proposition 65:

This product contains no chemical substances subject to California Proposition 65.

---



---

Product Name: TONER CARTRIDGE (BLACK)

Prepared Date: 20-Nov-2001

Revised Date: 26-Aug-2002

---

EU Information

Information on the label (1999/45/EC and 67/548/EEC):

Symbol & Indication: Not required

R-Phrase: Not required

S-Phrase: Not required

76/769/EEC:

All chemical substances in this product comply with all applicable rules or order under 76/769/EEC.

Article 14 (2.1) of Directive 1999/45/EC is not applicable to this product.

---

16. OTHER INFORMATION

NFPA Hazard Rating: The 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

Recommended Uses:

Toner for Electrophotographic Equipment

Restrictions:

Information on this data sheet represents our current data and the best opinion as to the proper use in handling of this product under normal conditions specified in our User's Manual. However, neither Minolta Co., Ltd. nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we do not guarantee that these are the only hazards which exist.

Literature References:

ANSI Z400.1-1993

ISO 11014-1

Commission Directive 91/155/EEC

IARC(1996): IARC monographs 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.Bellmann, O.Creutzenberg, C.Dasenbrock, H.Ernst, 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.

---



MATERIAL SAFETY DATA SHEET

MSDS No.: ICP-051Q

Product Name: TONER CARTRIDGE (YELLOW)

Prepared date:20-Nov-2001

Revised Date: 26-Aug-2002

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: TONER CARTRIDGE (YELLOW)  
used for: Magicolor 2300DL

Supplier Identification:

Minolta Co., Ltd.  
3-13, 2-Chome, Azuchi-Machi, Chuo-Ku, Osaka 541-8556 JAPAN  
Telephone: +81-6-6271-2251 Facsimile: +81-6-6266-1010

Contact Point:

Minolta Co., Ltd. (Quality & Ecology Division)  
2-30, Toyotsu-Cho, Suita-Shi, Osaka 564-0051 Japan  
Facsimile: +81-6-6386-6254

2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance [ ] Preparation [ X ]

Major Ingredients:

[Generic Name]	[CAS No.]	[%]
Styrene-acrylic resin	+++	80-90
Wax	+++	10-20
Organic pigment	+++	1-10
Amorphous silica	7631-86-9	1-10
Titanium compound	+++	1-10

+++ : Supplier's confidential information

Hazardous Ingredients:

None present



---

Product Name: TONER CARTRIDGE (YELLOW)

Prepared date: 20-Nov-2001

Revised Date: 26-Aug-2002

---

### 3. HAZARDS IDENTIFICATION

Classification : Not classified as dangerous. (1999/45/EC)

Most Important Hazards and Effects of the Products

For Human Health: This toner is not classified as a human carcinogen.  
No symptoms expected with intended use.

For the Environment: No data are available on the adverse effects of  
this product on the environment.

For Others: None

Specific Hazards: Dust explosion (like most finely divided organic powders)

---

### 4. FIRST-AID MEASURES

Symptoms of Overexposure: No symptoms expected with intended use.

Routes of Entry: Eye contact, inhalation, ingestion

Information

Inhalation: If symptoms are experienced, remove source of contamination  
or move victim to fresh air and obtain medical advice.

Skin Contact: Flush with gently flowing water (preferably lukewarm)  
and soap for 15 minutes or until particle is removed. If irritation  
does occur, obtain medical advice.

Eye Contact: Do not allow victim to rub eye(s). Flush with gently flowing  
water (preferably lukewarm) for 15 minutes or until particle is  
removed. Have victim look right and left, and, then up and down.  
If irritation does occur, obtain medical attention. DO NOT attempt  
to manually remove anything stuck to the eye(s).

Ingestion: If irritation or discomfort occurs, obtain medical  
attention immediately.

Note to Physician: None

---

### 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: CO<sub>2</sub>, water spray, foam and dry chemical  
Extinguishing Media to Avoid: Full water jet

Special Firefighting Procedures: None

Fire and Explosion Hazards: If dispersed in air, like most finely divided  
organic powders, may form an explosive mixture.

Protection of Firefighters: Use self-contained breathing  
apparatus (SCBA).

---

### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: None

Environmental Precautions: None

Methods for Cleaning Up: Wipe off with paper or cloth.

DO NOT use vacuum cleaner when a large amount is released. It, like  
most finely divided organic powders, may create a dust explosion.

---



---

Product Name: TONER CARTRIDGE (YELLOW)

Prepared date: 20-Nov-2001

Revised Date: 26-Aug-2002

---

## 7. HANDLING AND STORAGE

### Handling

Technical Measures: None

Precautions: None

Safe Handling Advice: Try not to disperse the particles.

### Storage

Technical Measures: None

Storage Conditions: Keep container closed.

Store in a cool and dry place.

Keep out of reach of children.

Incompatible Products: None

Packing Materials: Bottles or Cartridge designated by Minolta.

---

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Measures

Ventilation: None required with intended use.

### Control Parameters(As total dust)

OSHA-PEL(USA): 15mg/m<sup>3</sup>                      ACGIH-TLV(USA): 10mg/m<sup>3</sup>

DFG-MAK(GER): 4mg/m<sup>3</sup>                      Worksafe-TWA(Austl.): 10mg/m<sup>3</sup>

### Personal Protective Equipment

None required when used as intended in Minolta equipment.

Other: For use other than normal customer-operating procedures (such as in bulk toner processing facilities), goggles and respirators may be required.

Hygiene Measures: Wash hands after handling.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Physical State: Solid                      Form: Powder                      Color: Yellow

Odor:    Slight mild odor

Particle Size(µm):                              6.5

pH:    Not applicable

Boiling Point:                                 Not applicable

Melting Point(°C):                            No data available

Softening Point(°C):                         125

Flash Point:                                  Not applicable

Ignition Temperature(°C):                   No data available

Explosion Properties:                         No data available

Vapor Pressure:                               Not applicable

Density(g/cm<sup>3</sup>):                               1.2

Solubility in water:                          Negligible

Oxidizing Properties:                         No data available

Partition Coefficient, n-Octanol/Water: Not applicable

---



---

Product Name: TONER CARTRIDGE (YELLOW)

Prepared date:20-Nov-2001

Revised Date: 26-Aug-2002

---

**10. STABILITY AND REACTIVITY**

Stability: Stable [ X ] Unstable [ ]

Hazardous Reactions: Dust explosion, like most finely divided organic powders.

Conditions to avoid: Electric discharge, throwing into fire.

Materials to Avoid: Oxidizing materials.

Hazardous Decomposition Products: CO, CO2

---

**11. TOXICOLOGICAL INFORMATION**

Health Effects from Exposure: No symptoms expected with intended use.

## Toxicological Data

## Acute Toxicity:

Inhalation, LC50(mg/l): &gt;4.80 (Rat,4hour)

(This was the highest attainable concentration.)

Ingestion(oral), LD50(mg/kg): &gt;2000 (Rat)

Dermal, LD50(mg/kg): No data available

Eye irritation: Minimal irritant (Rabbit)

Skin irritation: Mild irritant (Rabbit)

Skin sensitizer: Non sensitizer (Guinea pig)

Mutagenicity: Negative (AMES test)

(\*= Based on data for other Minolta Products with similar ingredients)

Local Effects: see Chronic Toxicity or Long term Toxicity

## Chronic Toxicity or Long Term Toxicity:

Prolonged inhalation of excessive dust may cause lung damage. It is attributed to "lung overloading", a generic response to excessive amounts of any dust retained in the lungs for a prolonged interval. Use of this product, as intended, does not result in inhalation of excessive dust.

In a study in rats by chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of rats in the high concentration(16mg/m<sup>3</sup>) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle(4mg/m<sup>3</sup>) exposure group. But no pulmonary change was reported in the lowest(1mg/m<sup>3</sup>) exposure group, the most relevant level to potential human exposures.

## Carcinogenicity

IARC Monographs: Not listed

NTP(USA): Not listed

OSHA Regulated(USA): Not listed

---



---

Product Name: TONER CARTRIDGE (YELLOW)

Prepared date:20-Nov-2001

Revised Date: 26-Aug-2002

---

#### 12. ECOLOGICAL INFORMATION

No data are available on the adverse effects of this material on the environment.

---

#### 13. DISPOSAL CONSIDERATION

Appropriate Methods of Disposal

Preparation(community provisions):

Waste may be disposed or incinerated under conditions which meet all federal, state and local environmental regulations.

Contaminated Packaging:

Waste may be disposed or incinerated under conditions which meet all federal, state and local environmental regulations.

Precautions:

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

---

#### 14. TRANSPORT INFORMATION

Special Precautions: None

Information on Code and Classifications According to International Regulations

UN Classification: None

---

#### 15. REGULATORY INFORMATION

US Information

Information on the label: Not required

TSCA(Toxic Substances Control Act):

All chemical substances in this product comply with all applicable rules or order under TSCA.

SARA(Superfund Amendments and Reauthorization Act) Title III

302 Extreme Hazardous Substance: None

311/312 Hazard Categories: None

313 Reportable Ingredients: None

California Proposition 65:

This product contains no chemical substances subject to California Proposition 65.

EU Information

Information on the label (1999/45/EC and 67/548/EEC):

Symbol & Indication: Not required

R-Phrase: Not required

S-Phrase: Not required

76/769/EEC:

All chemical substances in this product comply with all applicable rules or order under 76/769/EEC.

Article 14(2.1) of Directive 1999/45/EC is not applicable to this product.

---





---

Product Name: TONER CARTRIDGE (YELLOW)

Prepared date:20-Nov-2001

Revised Date: 26-Aug-2002

---

#### 16. OTHER INFORMATION

NFPA Hazard Rating: The 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

Recommended Uses:

Toner for Printer Magicolor 2300DL

Restrictions:

Information on this data sheet represents our current data and the best opinion as to the proper use in handling of this product under normal conditions specified in our User's Manual. However, neither Minolta Co.,Ltd. nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we do not guarantee that these are the only hazards which exist.

Literature References:

ANSI Z400.1-1993

ISO 11014-1

Commission Directive 91/155/EEC

H.Muhle, B.Bellmann, O.Creutzenberg, C.Dasenbrock, H.Ernst, 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.

---



---

Product Name: TONER CARTRIDGE (MAGENTA)

Prepared date:20-Nov-2001

Revised Date: 26-Aug-2002

---

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: TONER CARTRIDGE (MAGENTA)

used for: Magicolor 2300DL

Supplier Identification:

Minolta Co., Ltd.

3-13, 2-Chome, Azuchi-Machi, Chuo-Ku, Osaka 541-8556 JAPAN

Telephone: +81-6-6271-2251 Facsimile: +81-6-6266-1010

Contact Point:

Minolta Co., Ltd. (Quality & Ecology Division)

2-30, Toyotsu-Cho, Suita-Shi, Osaka 564-0051 Japan

Facsimile: +81-6-6386-6254

---

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance [ ] Preparation [ X ]

Major Ingredients:

[Generic Name]	[CAS No.]	[%]
Styrene-acrylic resin	+++	80-90
Wax	+++	10-20
Organic pigment 1	+++	1-10
Organic pigment 2	+++	1-10
Amorphous silica	7631-86-9	1-10
Titanium compound	+++	1-10

+++ : Supplier's confidential information

Hazardous Ingredients:

None present

---



---

Product Name: TONER CARTRIDGE (MAGENTA)

Prepared date: 20-Nov-2001

Revised Date: 26-Aug-2002

---

### 3. HAZARDS IDENTIFICATION

Classification : Not classified as dangerous. (1999/45/EC)

Most Important Hazards and Effects of the Products

For Human Health: This toner is not classified as a human carcinogen.  
No symptoms expected with intended use.

For the Environment: No data are available on the adverse effects of  
this product on the environment.

For Others: None

Specific Hazards: Dust explosion (like most finely divided organic powders)

---

### 4. FIRST-AID MEASURES

Symptoms of Overexposure: No symptoms expected with intended use.

Routes of Entry: Eye contact, inhalation, ingestion

Information

Inhalation: If symptoms are experienced, remove source of contamination  
or move victim to fresh air and obtain medical advice.

Skin Contact: Flush with gently flowing water (preferably lukewarm)  
and soap for 15 minutes or until particle is removed. If irritation  
does occur, obtain medical advice.

Eye Contact: Do not allow victim to rub eye(s). Flush with gently flowing  
water (preferably lukewarm) for 15 minutes or until particle is  
removed. Have victim look right and left, and, then up and down.  
If irritation does occur, obtain medical attention. DO NOT attempt  
to manually remove anything stuck to the eye(s).

Ingestion: If irritation or discomfort occurs, obtain medical  
attention immediately.

Note to Physician: None

---

### 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: CO<sub>2</sub>, water spray, foam and dry chemical  
Extinguishing Media to Avoid: Full water jet

Special Firefighting Procedures: None

Fire and Explosion Hazards: If dispersed in air, like most finely divided  
organic powders, may form an explosive mixture.

Protection of Firefighters: Use self-contained breathing  
apparatus (SCBA).

---

### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: None

Environmental Precautions: None

Methods for Cleaning Up: Wipe off with paper or cloth.

DO NOT use vacuum cleaner when a large amount is released. It, like  
most finely divided organic powders, may create a dust explosion.

---



---

Product Name: TONER CARTRIDGE (MAGENTA)

Prepared date: 20-Nov-2001

Revised Date: 26-Aug-2002

---

## 7. HANDLING AND STORAGE

### Handling

Technical Measures: None

Precautions: None

Safe Handling Advice: Try not to disperse the particles.

### Storage

Technical Measures: None

Storage Conditions: Keep container closed.

Store in a cool and dry place.

Keep out of reach of children.

Incompatible Products: None

Packing Materials: Bottles or Cartridge designated by Minolta.

---

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Measures

Ventilation: None required with intended use.

### Control Parameters(As total dust)

OSHA-PEL(USA): 15mg/m<sup>3</sup>

ACGIH-TLV(USA): 10mg/m<sup>3</sup>

DFG-MAK(GER): 4mg/m<sup>3</sup>

Worksafe-TWA(Austl.): 10mg/m<sup>3</sup>

### Personal Protective Equipment

None required when used as intended in Minolta equipment.

Other: For use other than normal customer-operating procedures (such as in bulk toner processing facilities), goggles and respirators may be required.

Hygiene Measures: Wash hands after handling.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Physical State: Solid

Form: Powder

Color: Red

Odor:

Slight mild odor

Particle Size(μm):

6.5

pH:

Not applicable

Boiling Point:

Not applicable

Melting Point(°C):

No data available

Softening Point(°C):

125

Flash Point:

Not applicable

Ignition Temperature(°C):

No data available

Explosion Properties:

No data available

Vapor Pressure:

Not applicable

Density(g/cm<sup>3</sup>):

1.2

Solubility in water:

Negligible

Oxidizing Properties:

No data available

Partition Coefficient, n-Octanol/Water: Not applicable

---



---

Product Name: TONER CARTRIDGE (MAGENTA)

Prepared date:20-Nov-2001

Revised Date: 26-Aug-2002

---

#### 10. STABILITY AND REACTIVITY

Stability: Stable [ X ]                      Unstable [   ]

Hazardous Reactions:            Dust explosion, like most finely divided organic powders.

Conditions to avoid: Electric discharge, throwing into fire.

Materials to Avoid: Oxidizing materials.

Hazardous Decomposition Products: CO, CO2

---

#### 11. TOXICOLOGICAL INFORMATION

Health Effects from Exposure: No symptoms expected with intended use.

##### Toxicological Data

##### Acute Toxicity:

Inhalation, LC50(mg/l):                      >4.99 (Rat,4hour)  
(This was the highest attainable concentration.)

Ingestion(oral), LD50(mg/kg): >2000 (Rat)

Dermal, LD50(mg/kg):                      No data available

Eye irritation:            Minimal irritant (Rabbit)

Skin irritation:            Non irritant (Rabbit)

Skin sensitizer:            Non sensitizer (Guinea pig)

Mutagenicity:                                      Negative (AMES test)

(\* = Based on data for other Minolta Products with similar ingredients)

Local Effects: see Chronic Toxicity or Long term Toxicity

##### Chronic Toxicity or Long Term Toxicity:

Prolonged inhalation of excessive dust may cause lung damage. It is attributed to "lung overloading", a generic response to excessive amounts of any dust retained in the lungs for a prolonged interval. Use of this product, as intended, does not result in inhalation of excessive dust.

In a study in rats by chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of rats in the high concentration(16mg/m<sup>3</sup>) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle(4mg/m<sup>3</sup>) exposure group. But no pulmonary change was reported in the lowest(1mg/m<sup>3</sup>) exposure group, the most relevant level to potential human exposures.

##### Carcinogenicity

IARC Monographs:            Not listed

NTP(USA):                      Not listed

OSHA Regulated(USA): Not listed

---



---

Product Name: TONER CARTRIDGE (MAGENTA)

Prepared date:20-Nov-2001

Revised Date: 26-Aug-2002

---

## 12. ECOLOGICAL INFORMATION

No data are available on the adverse effects of this material on the environment.

---

## 13. DISPOSAL CONSIDERATION

Appropriate Methods of Disposal

Preparation(community provisions):

Waste may be disposed or incinerated under conditions which meet all federal, state and local environmental regulations.

Contaminated Packaging:

Waste may be disposed or incinerated under conditions which meet all federal, state and local environmental regulations.

Precautions:

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

---

## 14. TRANSPORT INFORMATION

Special Precautions: None

Information on Code and Classifications According to International Regulations

UN Classification: None

---

## 15. REGULATORY INFORMATION

US Information

Information on the label: Not required

TSCA(Toxic Substances Control Act):

All chemical substances in this product comply with all applicable rules or order under TSCA.

SARA(Superfund Amendments and Reauthorization Act) Title III

302 Extreme Hazardous Substance: None

311/312 Hazard Categories: None

313 Reportable Ingredients: None

California Proposition 65:

This product contains no chemical substances subject to California Proposition 65.

EU Information

Information on the label (1999/45/EC and 67/548/EEC):

Symbol & Indication: Not required

R-Phrase: Not required

S-Phrase: Not required

76/769/EEC:

All chemical substances in this product comply with all applicable rules or order under 76/769/EEC.

Article 14(2.1) of Directive 1999/45/EC is not applicable to this product.

---



---

Product Name: TONER CARTRIDGE (MAGENTA)

Prepared date:20-Nov-2001

Revised Date: 26-Aug-2002

---

#### 16. OTHER INFORMATION

NFPA Hazard Rating: The 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

Recommended Uses:

Toner for Printer Magicolor 2300DL

Restrictions:

Information on this data sheet represents our current data and the best opinion as to the proper use in handling of this product under normal conditions specified in our User's Manual. However, neither Minolta Co.,Ltd. nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we do not guarantee that these are the only hazards which exist.

Literature References:

ANSI Z400.1-1993

ISO 11014-1

Commission Directive 91/155/EEC

H.Muhle, B.Bellmann, O.Creutzenberg, C.Dasenbrock, H.Ernst, 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.

---



MATERIAL SAFETY DATA SHEET

Page:1/6

MSDS No.: ICP-053Q

Product Name: TONER CARTRIDGE (CYAN)

Prepared date:20-Nov-2001

Revised Date: 26-Aug-2002

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: TONER CARTRIDGE (CYAN)

used for: Magicolor 2300DL

Supplier Identification:

Minolta Co., Ltd.

3-13, 2-Chome, Azuchi-Machi, Chuo-Ku, Osaka 541-8556 JAPAN

Telephone: +81-6-6271-2251 Facsimile: +81-6-6266-1010

Contact Point:

Minolta Co., Ltd. (Quality & Ecology Division)

2-30, Toyotsu-Cho, Suita-Shi, Osaka 564-0051 Japan

Facsimile: +81-6-6386-6254

2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance [ ] Preparation [ X ]

Major Ingredients:

[Generic Name]	[CAS No.]	[%]
Styrene-acrylic resin	+++	80-90
Wax	+++	10-20
Organic pigment	147-14-8	1-10
Amorphous silica	7631-86-9	1-10
Titanium compound	+++	1-10

+++ : Supplier's confidential information

Hazardous Ingredients:

None present





---

Product Name: TONER CARTRIDGE (CYAN)

Prepared date: 20-Nov-2001

Revised Date: 26-Aug-2002

---

### 3. HAZARDS IDENTIFICATION

Classification : Not classified as dangerous. (1999/45/EC)

Most Important Hazards and Effects of the Products

For Human Health: This toner is not classified as a human carcinogen.  
No symptoms expected with intended use.

For the Environment: No data are available on the adverse effects of  
this product on the environment.

For Others: None

Specific Hazards: Dust explosion (like most finely divided organic powders)

---

### 4. FIRST-AID MEASURES

Symptoms of Overexposure: No symptoms expected with intended use.

Routes of Entry: Eye contact, inhalation, ingestion

Information

Inhalation: If symptoms are experienced, remove source of contamination  
or move victim to fresh air and obtain medical advice.

Skin Contact: Flush with gently flowing water (preferably lukewarm)  
and soap for 15 minutes or until particle is removed. If irritation  
does occur, obtain medical advice.

Eye Contact: Do not allow victim to rub eye(s). Flush with gently flowing  
water (preferably lukewarm) for 15 minutes or until particle is  
removed. Have victim look right and left, and, then up and down.  
If irritation does occur, obtain medical attention. DO NOT attempt  
to manually remove anything stuck to the eye(s).

Ingestion: If irritation or discomfort occurs, obtain medical  
attention immediately.

Note to Physician: None

---

### 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: CO<sub>2</sub>, water spray, foam and dry chemical  
Extinguishing Media to Avoid: Full water jet

Special Firefighting Procedures: None

Fire and Explosion Hazards: If dispersed in air, like most finely divided  
organic powders, may form an explosive mixture.

Protection of Firefighters: Use self-contained breathing  
apparatus (SCBA).

---

### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: None

Environmental Precautions: None

Methods for Cleaning Up: Wipe off with paper or cloth.

DO NOT use vacuum cleaner when a large amount is released. It, like  
most finely divided organic powders, may create a dust explosion.

---



---

Product Name: TONER CARTRIDGE (CYAN)

Prepared date: 20-Nov-2001

Revised Date: 26-Aug-2002

---

## 7. HANDLING AND STORAGE

### Handling

Technical Measures: None

Precautions: None

Safe Handling Advice: Try not to disperse the particles.

### Storage

Technical Measures: None

Storage Conditions: Keep container closed.

Store in a cool and dry place.

Keep out of reach of children.

Incompatible Products: None

Packing Materials: Bottles or Cartridge designated by Minolta.

---

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Engineering Measures

Ventilation: None required with intended use.

### Control Parameters(As total dust)

OSHA-PEL(USA): 15mg/m<sup>3</sup>

ACGIH-TLV(USA): 10mg/m<sup>3</sup>

DFG-MAK(GER): 4mg/m<sup>3</sup>

Worksafe-TWA(Austl.): 10mg/m<sup>3</sup>

### Personal Protective Equipment

None required when used as intended in Minolta equipment.

Other: For use other than normal customer-operating procedures (such as in bulk toner processing facilities), goggles and respirators may be required.

Hygiene Measures: Wash hands after handling.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Physical State: Solid

Form: Powder

Color: Blue

Odor:

Slight mild odor

Particle Size(μm):

6.5

pH:

Not applicable

Boiling Point:

Not applicable

Melting Point(°C):

No data available

Softening Point(°C):

125

Flash Point:

Not applicable

Ignition Temperature(°C):

No data available

Explosion Properties:

No data available

Vapor Pressure:

Not applicable

Density(g/cm<sup>3</sup>):

1.2

Solubility in water:

Negligible

Oxidizing Properties:

No data available

Partition Coefficient, n-Octanol/Water: Not applicable

---



---

Product Name: TONER CARTRIDGE (CYAN)

Prepared date:20-Nov-2001

Revised Date: 26-Aug-2002

---

**10. STABILITY AND REACTIVITY**

Stability: Stable [ X ] Unstable [ ]

Hazardous Reactions: Dust explosion, like most finely divided organic powders.

Conditions to avoid: Electric discharge, throwing into fire.

Materials to Avoid: Oxidizing materials.

Hazardous Decomposition Products: CO, CO2

---

**11. TOXICOLOGICAL INFORMATION**

Health Effects from Exposure: No symptoms expected with intended use.

**Toxicological Data****Acute Toxicity:**Inhalation, LC50(mg/l): >5.17 (Rat,4hour)  
(This was the highest attainable concentration.)

Ingestion(oral), LD50(mg/kg): &gt;2000 (Rat)

Dermal, LD50(mg/kg): No data available

Eye irritation: Minimal irritant (Rabbit)

Skin irritation: Non irritant (Rabbit)

Skin sensitizer: Non sensitizer (Guinea pig)

Mutagenicity: Negative (AMES test)

(\*= Based on data for other Minolta Products with similar ingredients)

Local Effects: see Chronic Toxicity or Long term Toxicity

**Chronic Toxicity or Long Term Toxicity:**

Prolonged inhalation of excessive dust may cause lung damage. It is attributed to "lung overloading", a generic response to excessive amounts of any dust retained in the lungs for a prolonged interval. Use of this product, as intended, does not result in inhalation of excessive dust.

In a study in rats by chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of rats in the high concentration(16mg/m<sup>3</sup>) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle(4mg/m<sup>3</sup>) exposure group. But no pulmonary change was reported in the lowest(1mg/m<sup>3</sup>) exposure group, the most relevant level to potential human exposures.

**Carcinogenicity**

IARC Monographs: Not listed

NTP(USA): Not listed

OSHA Regulated(USA): Not listed

---



---

Product Name: TONER CARTRIDGE (CYAN)

Prepared date:20-Nov-2001

Revised Date: 26-Aug-2002

---

## 12. ECOLOGICAL INFORMATION

No data are available on the adverse effects of this material on the environment.

---

## 13. DISPOSAL CONSIDERATION

Appropriate Methods of Disposal

Preparation(community provisions):

Waste may be disposed or incinerated under conditions which meet all federal, state and local environmental regulations.

Contaminated Packaging:

Waste may be disposed or incinerated under conditions which meet all federal, state and local environmental regulations.

Precautions:

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

---

## 14. TRANSPORT INFORMATION

Special Precautions: None

Information on Code and Classifications According to International Regulations

UN Classification: None

---

## 15. REGULATORY INFORMATION

US Information

Information on the label: Not required

TSCA(Toxic Substances Control Act):

All chemical substances in this product comply with all applicable rules or order under TSCA.

SARA(Superfund Amendments and Reauthorization Act) Title III

302 Extreme Hazardous Substance: None

311/312 Hazard Categories: None

313 Reportable Ingredients: None

California Proposition 65:

This product contains no chemical substances subject to California Proposition 65.

EU Information

Information on the label (1999/45/EC and 67/548/EEC):

Symbol & Indication: Not required

R-Phrase: Not required

S-Phrase: Not required

76/769/EEC:

All chemical substances in this product comply with all applicable rules or order under 76/769/EEC.

Article 14(2.1) of Directive 1999/45/EC is not applicable to this product.

---



---

Product Name: TONER CARTRIDGE (CYAN)

Prepared date:20-Nov-2001

Revised Date: 26-Aug-2002

---

#### 16. OTHER INFORMATION

NFPA Hazard Rating: The 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

Recommended Uses:

Toner for Printer Magicolor 2300DL

Restrictions:

Information on this data sheet represents our current data and the best opinion as to the proper use in handling of this product under normal conditions specified in our User's Manual. However, neither Minolta Co.,Ltd. nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we do not guarantee that these are the only hazards which exist.

Literature References:

ANSI Z400.1-1993

ISO 11014-1

Commission Directive 91/155/EEC

H.Muhle, B.Bellmann, O.Creutzenberg, C.Dasenbrock, H.Ernst, 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.

---