

MATERIAL SAFETY DATA SHEET

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MSDS No. DV006E-002

Issue Date: 2006.10.25 ;

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: DEVELOPER

used for: MFX-2350/2850

ReorderNo, DV2350US

Supplier Identification:

Company Name : Murata Machinery, Ltd.

Adress : 136, Takeda-Mukaishiro-cho, Fushimi-ku, Kyoto, Japan 612-8686

Telephone : +81-75-662-7735 Facsimile +81-75-672-5046

Contact Point:

Murata Machinery, Ltd. (Customer Satisfaction Center Communication  
Equipment Division)

Telephone +81-75-662-7735 Facsimile +81-75-672-5046

2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance [ ] Preparation [ X ]

Major Ingredients:

[Generic Name]	[CAS No.]	[%]
Ferrite Iron oxide	1309-37-1	65-75
. Magnesium oxide	1309-48-4	10-20
. Manganese oxide	1344-43-0	1-10
Styrene-acrylic resin	+++	1-10
Acryl resin	+++	1-10
Carbon black	1333-86-4	< 1

+++ : Supplier's confidential information

Hazardous Ingredients:

Chemical Name: Carbon black (< 1%)

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

California Proposition 65 (USA): Listed

Symbol (EC): Not listed

R-Phrase (EC): Not listed

DFG-MAK (GER): III 3B

Worksafe-TWA (Austl): 3mg/m3

Chemical Name: Manganese oxide

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### 3. HAZARDS IDENTIFICATION

Emergency Overview: Black powder (mean dia. is about 30um by volume ).  
Almost odorless.

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

Most Important Hazards and Effects of the Products

Ingestion Effect: None currently known.

Inhalation Effect: None currently known. Minimal respiratory tract irritation may occur as with exposure to large amount of any non-toxic dust.

Eye Effect: None currently known.

Skin Effect: None currently known.

Chronic Effects: Prolonged inhalation of excessive dusts may cause lung damage. Use of this product, as intended, does not result in inhalation of excessive dust.

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

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

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### 4. FIRST-AID MEASURES

Ingestion: Wash out mouth with water. Drink one or two glasses of water.  
If symptoms occur, get medical attention.

Inhalation: Move victim to fresh air immediately. If symptoms occur, get medical attention.

Eye Contact: Immediately flush eyes with plenty of water for 15 minutes.  
If symptoms occur, get medical attention.

Skin Contact: Wash with water and mild soap.

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### 5. FIRE-FIGHTING MEASURES

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

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).

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### 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: None

Environmental Precautions: None

Methods for Cleaning Up: Wear personal protective equipment

(See Section 8). Vacuum or sweep material and place in a bag and hold for waste disposal. Use vacuum equipped with High Efficiency Particulate Air (HEPA) filter. Vacuum should be electrically bonded and grounded to dispel static electricity. To avoid dust generation, do not sweep dry.

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**7. HANDLING AND STORAGE****Handling**

Technical Measures: None

Precautions: Do not breathe dust. Avoid contact with eyes.

Safe Handling Advice: Try not to disperse the particulates.

**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

Packaging Materials: Bottles or Cartridge designated by Konica Minolta.

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**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**

Not required under normal conditions. For use other than in normal operating procedures (such as in the event of large spill), goggles and respirators may be required.

Hygiene Measures: Wash hands after handling.

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**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Physical State: Solid

Color: Black

Form: Powder (mean dia. is about 30um by volume)

Odor:

Almost odorless

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Not applicable

Boiling Point (°C):

Not applicable

Melting Point (°C) / [F]:

Around No data available / [] (Softening Point)

Flash Point (°C):

Not applicable

Ignition Temperature (°C):

No data available

Explosion Properties:

No data available

Vapor Pressure:

Not applicable

Specific Gravity:

5.0

Solubility:

Insoluble in water.

Partition Coefficient, n-Octanol/Water: Not applicable

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**10. STABILITY AND REACTIVITY**

Stability: Stable except above 200C(392F).

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, CO<sub>2</sub>, and smoke.

Hazardous Polymerization: Will not occur.

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**11. TOXICOLOGICAL INFORMATION**

Acute Toxicity:

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

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

Inhalation, LC50(mg/l): No data available

Eye irritation: No data available

Skin irritation: Mild irritant(Rabbit) \*

Skin sensitizer: Non sensitizer (Guinea pig) \*

Local Effects: see Chronic Toxicity or Long term Toxicity

Chronic Toxicity or Long Term Toxicity:

In a two-year inhalation study of chronic toxicity and carcinogenicity using a typical toner in rats, there were no lung changes at all in the lowest exposure level (1mg/m<sup>3</sup>), the most relevant level to potential human exposures. A minimal to mild degree of fibrosis was noted in 22% of the animals at the middle exposure level (4mg/m<sup>3</sup>), and a mild to moderate degree of fibrosis was observed in 92% of the rats at the highest exposure level (16mg/m<sup>3</sup>). The lung changes observed in the higher exposure groups are interpreted in terms of "lung overloading", a series of generic responses to the presence of large quantities of respirable, insoluble and relatively benign dusts retained for extended time periods in the lungs. Lung tumor frequency was unchanged among rats exposed to toner at the three exposure levels, and for air-only control rats.

Carcinogenicity

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.

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.

Mutagenicity: Negative \*(AMES test)

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

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#### 12. ECOLOGICAL INFORMATION

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

Ecotoxicity: No data available

Mobility: No data available

Persistence and degradability: No data available

Bioaccumulative potential: No data available

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#### 13. DISPOSAL CONSIDERATION

When disposing of the waste or recovered material, consult federal, state and/or local regulations for the proper disposal method.

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#### 14. TRANSPORT INFORMATION

Information on Code and Classifications According to International Regulations

UN Classification: None

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#### 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.

California Proposition 65:

Ingredient carbon black subject to California Proposition 65 is bound in polymer-matrices so that warnings are not required.

EU Information

Information on the label (1999/45/EC and 67/548/EEC): Not required

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

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#### 16. OTHER INFORMATION

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

Health: 1 Flammability: 1 Reactivity: 0

Recommended Uses: Starter for Electrophotographic Equipment

Explanation of term: IARC 2B means "possible human carcinogen".

Revision Information: Regular revision on revised date.

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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.

Restrictions:

The above information is believed to be accurate and represents the best information currently available to Our Corporation. However, Our Corporation makes no warranty with respect to such information, and Our Corporation assumes no liability resulting from its use. Users should make their own investigation to determine the suitability of the information for their particular purposes.

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