

Material Safety Data Sheet (ISO form)

Date prepared 01/03/2002

1. Product and Company Identification

Product Name: TonerCartridgeIF2100
Company Name: Ricoh Asia Industry (Shenzhen) Ltd
Department: Quality Assurance Division
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2. Composition/Information on Ingredients

Substance or Preparation
Preparation

Chemical Nature

Ingredients	CAS.No.	Contents (%)
Polyester Resin	confidential	50-80%
Styrene-Acrylic-Polymer	25767-47-9	10-40%
Carbon Black	1333-86-4	<15
Wax	8015-86-9	<5
Dye	31714-55-3	<5

Components contributing to the Hazard
Applicable for it mentioned below

Their Chemical or Generic Name/Their Concentration or Concentration Range
Not relevant %

3. Hazards Identification (Most Important Hazard)

Adverse Human Health Effects
Not applicable in normal use.

Carcinogenicity
Carbon Black was reclassified as a Group 2B by IARC in 1996 based on the result of only the inhalation study in rats. However, there was not observed the incidence of tumors on the test results on dermal or oral studies. In addition, 2-years inhalation study using a typical toner containing carbon black showed no association between toner exposure and animal tumors.

Environmental Effects
Not applicable in normal use.

Physical and Chemical Hazards
Not applicable in normal use.

The Classification of the Chemical Product
Not applicable

4. **First-Aid Measures**

Inhalation
Gargle with water; move to place in fresh air. If unsuccessful, get medical attention.

Skin Contact
Wash thoroughly with soap and water.

Eye Contact
Try to remove with eye drops or flush with water. If unsuccessful, get medical attention.

Ingestion
Dilute stomach contents with several glasses of water. If unsuccessful, get medical attention.

5. **Fire-Fighting Measures**

Extinguishing Media
CO₂, dry chemicals, foam or water

Specific Method
Generally by sprinkling or extinguisher

6. **Accidental Release Measures**

Personal Precautions
Minimize inhalation of dust.

Environment Precautions
Keep product out of sewers and watercourses

Methods for Cleaning Up
If spilled, sweep up or pick up by vacuum cleaner (rated for toner extraction).

7. **Handling and Storage**

Handling (technical measures, precautions, safe handling material)
Do not handle 'windy' areas, since flying powder may enter eyes.
Minimize breathing dust.

Storage (technical measures, storage conditions, packaging material)
Avoid direct sunlight.
Do not expose to temperature over 35 °C
Keep out of reach of children.

8. **Exposure Controls/Personal Protection**

Respiratory Protections

None required under normal conditions of use.

Hand Protection

None required under normal conditions of use.

Eye Protection

None required under normal conditions of use.

Skin and Body Protection

None required under normal conditions of use.

9. **Physical and Chemical Properties**

Physical State

Form: Powder

Color: Black

Odor: Slight plastic odor

Information

pH : not applicable Measuring Temp.(°C) :-

Boiling Point(°C) : not applicable

Flash Point(°C) : not applicable

Explosion Properties (°C) : This product is considered a non-explosive material under normal use condition.

Vapor Pressure(Pa) :not applicable Measuring Temp.(°C) :-

Vapor Density(AIR=1) :not applicable

Density (g/cm³) :approx. 1.2 Measuring Temp. (°C) : 25

Solubility

Water Solubility(g/L) : Insoluble

Water Solubility Measuring Temp. (°C) :-

Other Solvent name :-

Other Solvent Solubility(g/L) :-

Other Solvent Solubility Measuring Temp. (°C):-

Octanol/Water Partition Coefficient

Not known

10. **Stability and Reactivity**

Conditions to Avoid

Not applicable in normal use.

Materials to Avoid

Not applicable in normal use.

Hazardous Decomposition Products

Styrene

11. **Toxicological Information**

Acute Toxicity

Acute Oral Toxicity : Rat: >5000mg/kg
 Acute Dermal Toxicity : not available
 Acute Inhalation Toxicity : not available

Sensitization

Acute Skin Irritation : None irritant
 Acute Eye Irritation : not applied
 Acute Allergenic Effects: : non-skingsensitive

Specific Effects

Carcinogenicity

In 1996, 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, 2-years cancer bioassay using a typical toner preparation containing carbon black did not demonstrate an association between toner exposure and tumor development in rats.

Mutagenicity:

Negative (Ames test)

Effects on the Reproductive System:

No data is available on this product.

Teratogenic

Not available

12. Ecological Information

Persistence/Degradability: not known

Bio-accumulation not known in bio-accumulation

Ecotoxicity

Acute Toxicity for Fish	>500	(mg/kg/96hr)
Acute Toxicity for Daphnia :	not available	(mg/kg/48hr)
Algae Inhibition Test:	not available	(mg/kg/72hr)

13. Disposal Consideration

Recommended Methods for Safe Environmentally Preferred Disposal

Used toner should be disposed of in an environmentally safe and appropriate manner and in accordance with governmental regulations. Do not incinerate.

14. Transport Information

International Regulations

RID/ADR: not applicable

DOT 49 CFR: not applicable

ADNR not applicable

IMDG Code not applicable

ICAO-TI/IATA-DGR not applicable

The UN Classification Number not applicable

Specific Precautionary Transport Measures
Avoid direct sunlight. Do not keep this over 35°C

Specific Materials to Avoid
None in normal use.

15. Regulation Information

Regulations
Not known

16. Other Information

Explanation of Hazardous Materials Identification System [HMIS]& National Fire Protection Association [NFPA] Hazard Rating Systems:

Both the HMIS and NFPA systems use number from "0" to "4" to show the degree of hazard in an uncontrolled situation:

0=Minimum Hazard 1=Slight Hazard 2=Moderate Hazard 3=Serious Hazard 4=Severe Hazard

Colors may also be used in both systems:

Blue=Health Hazard **Red**=Fire Hazard **Yellow**=Reactivity Hazard **White**=Indicate a special hazard

HMIS will specify any Personal Protective Equipment required [PPE],

NFPA will specify OX(oxidizer), Acid(acid), ALK(Alkali), COR(Corrosive), W(use no water), xx(Radioactive).

References:

- 1) IARC(1996) "IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol.65, Printing Process and Printing Inks, Carbon Black and Some Nitro Compounds", Lyon, pp149-261
- 2) H.Muhle, B.Bellman, O.Creutzenberg, C.Dasenbrock, H.Emst, R.Kilpper, J.C.MacKenzie, P.Morrow, U.Mohr, S.Takenaka and R.Mermelstein(1991) "Pulmonary Response to Toner upon Chronic Inhalation Exposure in Rats" Fundamental and Applied Toxicology 17,pp280-299