

Attn: Kelly Smith

RICOH MATERIAL SAFETY DATA SHEET

Toner Type 11D

Date Prepared : 12/21/00
 MSDS Number : 885144
 Product Number: 885144

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identification
 Product Name : Toner Type 11D
 Product Number :
 Chemical Name : Mixture
 CAS Number : 0-00-0

Company Identification
 Company Name : Ricoh Corporation
 Address : 5 Dedrick Place, West Caldwell NJ USA

Emergency telephone Number : (800)336-6737
 Telephone Number for Information : (973)882-5218

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

Ingredients	CAS #	Confidential	Contents %	ACGIH (TLV)			OSHA (PEL)	
				TWA	STEL	C	TWA	C
Polyster Resin			70	N/A	N/A	N/A	N/A	N/A
Styrene Acrylic Polymer	26655-10-7		15	N/A	N/A	N/A	N/A	N/A
Carbon Black	1333-86-4		9	3.5mg/m ³	N/A	N/A	3.5mg/m ³	N/A
Wax	8015-86-9		4	N/A	N/A	N/A	N/A	N/A
Dye	31714-55-3		2	N/A	N/A	N/A	N/A	N/A

SECTION 3 HAZARDS IDENTIFICATION

Emergency Overview

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HMIS Health = 1 Flammability = 1 Reactivity = 0 PPE : See Section 8

Potential Health Effects

Primary Entry Routes

Inhalation : Yes
Skin : No
Ingestion : Yes

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 that results on dermal or oral studies. Also 2-years inhalation study using a typical toner containing carbon black showed no association between toner exposure and animal tumors.

Medical Conditions Aggravated by Exposure : Not applicable

Chronic Effects :

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 lung for a prolonged interval. Use of this product, as intended, does not result in inhalation of excessive dust.

SECTION 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.

SECTION 5 FIRE-FIGHTING MEASURES

Flash Point Not applicable
Burning Rate (mm/sec) Not available
Autoignition Temperature (C) Not available
Flammable Limits (%) LEL Not applicable
UEL Not applicable



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Extinguishing Media : Foam, water spray (mist), dry chemical or carbon dioxide may be suitable.
Fire-Fighting Instructions : No special fire protecting method is required.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions : Minimize inhalation of dust.
Environment Precautions : Keep product out of sewers and watercourses.
Method for Cleaning up : If spilled, sweep up or pick up by vacuum cleaner(rated for developer extraction).
Remove residue with soap and water.

SECTION 7 HANDLING AND STORAGE

Handling (technical measures, precautions, safe handling material)
Do not handle in areas where wind blows.
Flying powder may enter eyes.
Minimize breathing dust.
Storage (technical measures, storage condition, packaging material)
Avoid direct sunlight.
Do not keep this over 35C (95F)
Keep out of reach children.

SECTION 8 EXPOSURE CONTROL/PERSONAL PROTECTION

Ventilation Local exhaust equipment is needed.
Respiratory Protections (Specify type) None required under normal conditions of use.
Eye Protection : None required under normal conditions of use.
Protective Gloves None required under normal conditions of use.
Protective Clothing or Equipment None required under normal conditions of use.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Form Powder
Color Black

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Odor Slightly plastic odor

pH Not applicable
 Boiling Point (C) Not applicable
 Vapor Pressure(Pa) Not applicable
 Vapor density(Air=1) Not applicable
 Density (g/cm3) 1.2 approximately
 Formula Weight Not applicable
 Melting Point (C) Not applicable
 Viscosity (Pa) Not applicable
 Volatile (%) -
 Evaporation Rate(n-BuAc=1) Not applicable
 Water Solubility (g/L) Insoluble
 Other Solvent name -
 Other Solvent Solubility(g/L) -

SECTION 10 STABILITY AND REACTIVITY

Stability Stable
 Condition to Avoid Not applicable in normal use.
 Material to Avoid Not applicable in normal use.
 Hazardous Polymerization None
 Hazardous Decomposition or Byproducts Styrene

SECTION 11 TOXICOLOGICAL INFORMATION

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

Sensitization
 Acute Skin Irritation : Non-irritant

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Acute Eye Irritation : Not applied
Acute Allergenic Effects : Not-skinsensitive

Special Effects

Carcinogenicity

In 1986 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
Effects on the reproductive system No data is available on this product.
Teratogenic No data

SECTION 12 ECOLOGICAL INFORMATION

Persistence/Degradability Not known
Bioaccumulation Not known in bioaccumulation
Ecotoxicity Acute toxicity for Fish >500 mg/kg/96hr
Acute toxicity for daphnia Not available
Algae inhibition test Not available

SECTION 13 DISPOSAL CONSIDERATION

Recommended Methods for safe Environmentally Preferred Disposal
Used toner should be disposed of in an environmentally appropriate manner and in accordance with governmental regulations. Do not incinerate.

SECTION 14 TRANSPORT INFORMATION

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International regulations

RID/ADR Not applicable
DOT 49 CFR Not applicable
ADNR Not applicable
IMDG Code Not applicable
ICAO-TI/ATA-DGR Not applicable
The UN Classification Number Not applicable

Specific Precautionary Transport Measures Avoid direct sunlight. Do not keep this over 35C (95F)
Specific Materials to Avoid None in normal use.

SECTION 15 REGULATION INFORMATION

Regulation : Not known

SECTION 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) (ARC(1996) "ARC 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.Dassenbrock, H.Emsl, R.Klippner, J.C.Mackenzie, P.Morrow, U.Mohr, S.Takenaka and R.Mermelstein(1991) "Pulmonary Response to Toner upon Chronic Inhalation

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Exposure in Rats" Fundamental and Applied Toxicology 17, pp280-299

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