S H A R P

Date Revised:
Date Issued :May. 28, 1999

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. B-1020

Section 1. Product Identification

Product : FO-47ND / FO-47DC / DUNT-455BSCZZ (Toner Cartridge) For use with : FO-4700

Section 2. Supplier's Name and Address

Sharp Corporation
22-22 Nagaike-cho, Abeno-ku, Osaka, Japan
Local suppliers are listed below. Please contact the nearest supplier for additional information.

(Country)	(Name and Telephone Number)
United Kingdom	Sharp Electronics (U. K.) Ltd. Telephone number for information : 01923 474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Polyester resin (NJ TSRN 361615-5042-P)		>90%	Not listed	Not listed	None
Carbon black	1333-86-4	1 - 5%	3.5 mg/m^3	3.5 mg/m^3	TWA(Austl) : 3 mg/m^3
Polyolefin wax	9003-07-0	1 - 5%	Not listed	Not listed	None
Polyolefin wax	25722-45-6	(TOTAL OF BOTH)	Not listed	Not listed	None
Organic pigment (NJ TSRN 361615-5025-P)		1 - 5%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Toner is a fine, black powder possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner. When used as intended according to instructions, studies do not indicate any symptoms of fibrosis will occur.

Section 5. Health Hazard Data

Route(s) of Entry :	Inhalation?	Skin?	Ingestion?
	Yes	Yes(Eye contact)	Yes

Health Hazard :

Inhalation, LC50(g/m^3 /4h) :	>0.74(Rats)* (This was the highest attainable concentration.)
Ingestion (oral), LD50(mg/kg) :	>5000 (Rats) *
Dermal, LD50 (mg/kg) :	>2000 (Rats) *
Eye irritation :	Not an irritant (rabbits) *
Skin irritation :	Not an irritant (rabbits) *
Skin sensitizer :	No data available
Mutagenicity :	Negative * (AMES test)

(* = Based on data for other products with similar ingredients)

Carcinogenicity : In 1996 the IARC reevaluated carbon black as a Group 2B carcinogen (possible human carcinogen). This classification is given to chemicals for which there is inadequate human evidence, but sufficient animal evidence on which to base an opinion of carcinogenicity. The classification 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 did not show any 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.

Chronic Effect: 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 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^3 **)** exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/m^3) exposure group. But no pulmonary change was reported in the lowest (1mg/m^3) exposure group, the most relevant level to potential human exposures.

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MATERIAL SAFETY DATA SHEET (2/2)

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Signs and Symptoms of Exposure : No symptoms expected with intended use.
Medical Conditions Generally Aggravated by Exposure : None
Emergency and First Aid Procedures :

Inhalation --- If symptoms are experienced, remove source of contamination or move victim to fresh air and obtain medical advice.
Ingestion ---- If irritation or discomfort occurs, obtain medical attention immediately.
Skin ------- 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 --------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).

Section 6. Physical Chemical Characteristics

Boiling Point	:	Not applicable	**Odor**	:	Faint odor
Melting Point	:	No data available	**Specific Gravity**	:	1.2
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applcable
Appearance	:	Powder	**Color**	:	Black

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: 450..* (* = Based on data for other products with similar ingredients)
Flammable Limits	: (LEL):No data available (UEL): No data available
Extinguishing Media	: CO2, water spray, foam and dry chemical
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: If dispersed in air, like most finely divided organic powders, may form an explosive mixture.
Sensitivity to Mechanical Impact	: No data available
Sensitivity to Static Charge	: No data available

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: Oxidizing materials
Hazardous Decomposition	: CO, CO2
Hazardous Polymerization	: No data available

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove): None required with intended use.

Engineering Control / Ventilation	: None required with intended use.
Work / Hygienic Practice	: Wash hands after handling. Try not to disperse the particles.
Steps to be taken in case of Spill or Leak	: Wipe off with paper or cloth. DO NOT use vacuum cleaner. If a large amount is released it may create a dust explosion as would most finely divided organic powders.
Waste Disposal Method	: Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health : 1 Flammability : 1 Reactivity : 0
WHMIS Legislation (Canada)	: Not applicable
Transport Information	: None
UN No.	: None

Section 11. Other Information

References : 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