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Material Safety Data Sheet

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MSDS No.: 021-000506

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SECTION 1 PRODUCT IDENTIFICATION

Product Name : Toner for DP-1820E, DP-1820P & DP-1520P

Product No. : DQ-TU10J

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

<u>INGREDIENTS</u>	<u>CAS #</u>	<u>PROPORTION (% by wt.)</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	<u>OTHER LIMITS</u>
Styrene-acrylate copolymer		> 78	None established	None established	None
Carbon black	1333-86-4	< 8	3.5 mg/m ³	3.5 mg/m ³	None
Paraffin wax *	8002-74-2	< 6	None established	None established	None
Polypropylene		< 4	None established	None established	None
Organic pigment		< 2	None established	None established	None
Amorphous silica	68909-20-6	< 2	80 mg/m ³	10 mg/m ³	None

*: See [Section 16]

SECTION 3 HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW : Odorless black fine powder.
Not a highly flammable, but when suspended in air, is combustible as with most organic powders.

POTENTIAL HEALTH EFFECTS:

EYE EFFECTS : Solid or dusts may cause irritation or corneal injury.

SKIN EFFECTS : Essentially nonirritating to skin.

INGESTION EFFECTS : Oral toxicity is believed to be low.

INHALATION EFFECTS : Minimal respiratory tract irritation may occur as with exposure to large amounts of any non-toxic dust.
May cause cough and raise phlegm.

CHRONIC EFFECTS : Not aware of any health effects associated with toner under its intended use.

CARCINOGENICITY : Carbon black is reclassified as a group 2B by IARC, but inhalation test using a typical toner showed no association between toner exposure and animal tumors.

SPECIFIC HAZARDS : Dust explosion (like most finely divided organic powders)

SECTION 4 FIRST AID MEASURES

EYE CONTACT : Any material that contacts the eye should be washed out immediately with water.
Get medical attention if symptoms is occur.

SKIN CONTACT : Wash after each contact.
Get medical attention if symptoms is occur.

INHALATION : If symptomatic, remove to fresh air.
Get medical attention if symptoms persist.

INGESTION : If swallowed, drink 1-2 glasses of water and immediately induce vomiting. Get medical attention.

SECTION 5 FIRE FIGHTING MEASURES

FLASH POINT : Not applicable.

FLAMMABLE LIMITS : No data available.

EXTINGUISHING MEDIA : Foam, CO₂ or dry chemical.

HAZARDOUS COMBUSTION PRODUCTS : Carbon monoxide, Carbon dioxide and Smoke

FIRE AND EXPLOSION HAZARDS : If dispersed in air, like most finely divided organic powders, may form an explosive mixture.

SECTION 6 ACCIDENTIAL RELEASE MEASURES

Minimize the release of particulates. Wear personal protective equipment. Sweep up or vacuum spilled toner and carefully transfer into sealed waste container. Sweep slowly to minimize generation of dust during cleanup. If a vacuum is used, the motor must be rated as dust tight. Residue can be removed with soap and water. Garments may be washed or dry cleaned, after removal of loose toner.

SECTION 7 HANDLING AND STORAGE

HANDLING : Avoid creating dust. Clean up all spills promptly.
Inhalation and contact with skin or eyes should be avoided.
Provide general ventilation. Good general ventilation should be sufficient of most conditions.

STORAGE : Store in a cool, well ventilated place away from flames and spark-producing equipment.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES : ACGIH TLV= 10mg/m³(Total dust) , 3mg/m³(Respirable dust)
OSHA PEL= 15mg/m³(Total dust), 5mg/m³(Respirable dust)

ENGINEERING CONTROLS : Good general ventilation is recommended.

RESPIRATORY PROTECTION : 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.

SKIN PROTECTION : Not required under normal conditions.

EYE PROTECTION : Not required under normal conditions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : Odorless black fine powder
ODOR : None
pH : Not applicable
VAPOR PRESSURE (mg Hg.) : Not applicable
VAPOR DENSITY (AIR = 1) : Not applicable
EVAPORATION RATE : Not applicable
BOILING POINT (°C) : Not applicable
MELTING POINT (°C) : No data
SOLUBILITY IN WATER : Insoluble
SPECIFIC GRAVITY : 1.10

SECTION 10 STABILITY AND REACTIVITY

STABILITY : Stable
INCOMPATIBILITY : Oxidizing materials.
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon oxides, hydrocarbons (by high heat and fire).
HAZARDOUS POLYMERIZATION : Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE INHALATION TOXICITY : No data
IRRITANT EFFECT ON EYES : No data
IRRITANT EFFECT ON SKIN : No data
MUTAGENICITY : Negative in the Ames test (Estimated from the data of constituent components)

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 rat receiving chronic inhalation exposures to free unbound carbon black at level 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.

CHRONIC EFFECTS:

In study in rats (H. Muhle) by chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of the rats in the high concentration (16mg/m³) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/m³) exposure group. But no pulmonary change was reported in the lowest (1mg/m³) exposure group, the most relevant level to potential human exposure.

SECTION 12 ECOLOGICAL INFORMATION

No data available.

SECTION 13 DISPOSAL CONSIDERATION

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

SECTION 14 TRANSPORT INFORMATION

UN CLASS : None allocated.
DOT CLASS : None allocated.
TDG CLASS : None allocated.

SECTION 15 REGULATORY INFORMATION

USA Information:

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

Australia Information:

Not classified as hazardous according to criteria of NOHSC.

SECTION 16 OTHER INFORMATION

Paraffine is not hazardous except for its flammable properties, but "Paraffine wax fume" is one of hazardous chemicals. Its ACGIH TLVs(TWA) and NIOSH PELs(TWA) is the same value (2mg/m3).

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 Componds. 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.

Information on this data sheet represents our current data and best opinion as to the proper use in handling of this product under normal conditions.