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**Material Safety Data Sheet**

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**SECTION 1 PRODUCT IDENTIFICATION**

Product Name : Developer for DP-8032, DP-8025, DP-3030, DP-2330, DP-3010 & DP-2310

Product No. : DQ-Z120E

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**SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS**

INGREDIENTS	CAS #	PROPORTION (% by wt.)	OSHA PEL	ACGIH TLV	OTHER LIMITS
♦ Manganese ferrite		85 - 95	Manganese compounds 5 mg/m <sup>3</sup> (as Mn)	Manganese compounds 0.2 mg/m <sup>3</sup> (as Mn) Iron oxide 5 mg/m <sup>3</sup> (as Fe)	None
♦ Polyester		5 - 10	None established	None established	None
♦ Silicone resin		< 5	None established	None established	None
♦ Carbon black	1333-86-4	< 1	3.5 mg/m <sup>3</sup>	3.5 mg/m <sup>3</sup>	None

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**SECTION 3 HAZARDOUS IDENTIFICATION**

EMERGENCY OVERVIEW : Fine black powder.

POTENTIAL HEALTH EFFECTS :

EYE EFFECTS : Mild irritant.

SKIN EFFECTS : None currently known.

INGESTION EFFECTS : May be harmful if swallowed.

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)

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**SECTION 4 FIRST AID MEASURES**

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

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

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**SECTION 5 FIRE FIGHTING MEASURES**

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FLASH POINT : Not applicable.

FLAMMABLE LIMITS : Not applicable.

EXTINGUISHING MEDIA : Water fog, dry chemical, foam or CO<sub>2</sub>.

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.

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**SECTION 6 ACCIDENTIAL RELEASE MEASURES**

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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.

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**SECTION 7 HANDLING AND STORAGE**

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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.

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**SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**

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EXPOSURE GUIDELINES : ACGIH TLV= 10mg/m<sup>3</sup>(Total dust), 3mg/m<sup>3</sup>(Respirable dust)  
OSHA PEL= 15mg/m<sup>3</sup>(Total dust), 5mg/m<sup>3</sup>(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.

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**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

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APPEARANCE : 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) : Not applicable  
SOLUBILITY IN WATER : Insoluble in water  
SPECIFIC GRAVITY (H<sub>2</sub>O = 1): 1.8

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**SECTION 10 STABILITY AND REACTIVITY**

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STABILITY : Stable  
INCOMPATIBILITY : Strong oxidizers.  
HAZARDOUS DECOMPOSITION PRODUCTS : Carbon monoxide, Carbon dioxide and Smoke.  
HAZARDOUS POLYMERIZATION : Will not occur.

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**SECTION 11 TOXICOLOGICAL INFORMATION**

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INHALATION : Finely divided solid. Avoid exposure to dust.  
EYE : No specific hazard known. May cause temporary irritation.  
SKIN : Low hazard for recommended handling.  
INGESTION : Expected to be a low ingestion hazard.  
MUTAGENICITY : Negative in the Ames test (main ingredients)

**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 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/m<sup>3</sup>) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/m<sup>3</sup>) exposure group.

But no pulmonary change was reported in the lowest (1mg/m<sup>3</sup>) exposure group, the most relevant level to potential human exposure.

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## **SECTION 12 ECOLOGICAL INFORMATION**

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No data available.

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## **SECTION 13 DISPOSAL CONSIDERATION**

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

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## **SECTION 14 TRANSPORT INFORMATION**

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UN CLASS : None allocated.

DOT CLASS : None allocated.

TDG CLASS : None allocated.

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## **SECTION 15 REGULATORY INFORMATION**

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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.

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## **SECTION 16 OTHER INFORMATION**

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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.

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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.