



MATERIAL SAFETY DATA SHEET

Section 1 – Product and Company Identification

IBM Corporation
New Orchard Road
Armonk, New York 10504
U.S.A.

For Emergency Source Information
International Emergency Number:
1-303-739-1111
U.S.A. Emergency Number: 1-800-426-4333

Product Name:

IBM Infoprint 1312 / 1410 Toner: Toner Cartridge, Return Program Toner Cartridge, High Yield Toner Cartridge, Return Program High Yield Toner Cartridge.

Product Trade Names and Synonyms: None

IBM Part Numbers: 75P4683, 75P4684, 75P4685, 75P4686, 75P5519, 75P5520, 75P5521, 75P5522

IBM Material Reference Number: 940121490

Chemical Family: Printing toner

MSDS Preparation Date: 3/11/03 **MSDS Revision Date:**

Section 2 – Composition / Information on Ingredients

Component	Percentage	CAS #	UN #	NFPA Ratings			
				H	F	R	S
Toner	100	--	N/App	--			
Polyester resin	65-80	(1) (2)	--	Not available			
Carbon black	1-10	1333-86-4	--	1	1	0	--
Iron oxide	6-12	1317-61-9 / 12227-89-3	--	Not available			
Polymer wax	1-5	(1) (3)	--	Not available			
Amorphous silica (modified)	1-3	(1) (4)	--	Not available			

(1) Trade secret or patented molecule.

(2) New Jersey Trade Secret Registration Number 80100286-6001P.

(3) New Jersey Trade Secret Registration Number 80100451-5016.

(4) New Jersey Trade Secret Registration Number 80100451-5015.

See Section 8 for Exposure Guidelines.

Section 3 – Hazards Identification

Emergency Overview:

Black powder with a slight odor. Carbon black has been classified as an IARC 2B (possible human) carcinogen. May cause respiratory tract or skin irritation. May form flammable or explosive dust-air mixtures. Avoid chronic pulmonary exposures to dust.



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Avoid exposure to eyes, skin or clothing (will stain). Keep container closed. Use with adequate ventilation.

Physical Description: Sealed cartridge contains black powdery solid material, with slight odor.

Physical Hazards: As with most finely divided dusts, an explosion is possible when an extremely high concentration of dust and an ignition source are present. Not a hazard under normal conditions of use.

Primary Routes of Exposure: Inhalation of dust, skin contact.

Potential Health Effects:

Skin:

Short Term Exposure: Testing and/or information on this or similar toners, or on the constituents of this toner indicate this toner is not a skin irritant and is of low dermal toxicity. Toner is not a dermal sensitizer.

Long Term Exposure: Rare individuals may note skin rash with repeated contact. Exposure not probable with intended use.

Eye:

Short Term Exposure: Toner may act as a mechanical irritant.

Long Term Exposure: No adverse chronic effects known. Exposure not probably with intended use.

Inhalation:

Short Term Exposure: Testing and/or information on this or similar toners, or on the constituents of this toner indicate low inhalation toxicity. As with exposure to high concentrations of any dust, minimal respiratory tract irritation may occur if excessive amounts of toner dust are inhaled. Exposure not probably with intended use.

Long Term Exposure: No adverse chronic effects known at intended level of use. Respirable size particles may collect in lungs and show up on X-rays (iron oxide). No adverse changes in the lungs result from this accumulation. Exposure not probable with intended use.

Ingestion:

Short Term Exposure: Testing and/or information on this or similar toners, or on the constituents of this toner indicate low oral toxicity. Exposure not probable with intended use.

Long Term Exposure: No adverse chronic effects known. Exposure not probable with intended use.

Conditions Aggravated by Exposure: None known at intended levels of use.

Signs and Symptoms of Exposure: Large amounts of toner on skin or mucous membranes (mouth, eyes, or nose) may cause discomfort.

Carcinogen Status:

OSHA: N

IARC: Y (Carbon black)

NTP: N



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ACGIH: N

Section 4 – First Aid Measures

Inhalation: If symptoms, such as shortness of breath, are experienced, remove source of contamination or move to fresh air. Seek medical advice if symptoms persist.

Skin Contact: Wash affected area with soap and water. Should irritation occur, obtain medical advice.

Eye Contact: Do not rub eyes. Flush immediately with plenty of water. Remove contact lenses and continue flushing for at least 15 minutes. Seek medical attention if irritation develops and persists.

Ingestion: Immediately wash mouth out with plenty of water. If irritation occurs, seek medical advice.

Antidotes: Not available.

Note to Physician: Not available.

Section 5 – Fire Fighting Measures

Means of Extinction: CO₂, water spray, dry chemical, or foam. Avoid full water jet.

Protective Equipment for Fire-Fighting: NIOSH approved self-contained breathing apparatus may be required if large numbers of cartridges are involved.

Flash Point (Method): Not applicable.

Lower Flammable (Explosive) Limit: Not available.

Upper Flammable (Explosive) Limit: Not available.

Autoignition Temperature: Not available.

Hazardous Combustion Products: Carbon dioxide, carbon monoxide, and low molecular weight organics.

Fire and Explosion Hazard: Like many finely divided materials, toner dust in high concentrations can form an explosive mixture in air which, if ignited, could result in a dust explosion.

Section 6 – Accidental Release Measures

Procedures to be Followed in Case of Leak or Spill: If a dust cloud is possible due to a spill, remove all sources of ignition such as open sparks, flames or static discharge to prevent the ignition of the dust. Minimize dust generation during clean up. Sweep up spill with non-metallic broom and dustpan. Contain for disposal. To avoid possible dust explosion, do not use vacuum cleaners when large amounts of toner are involved in a spill. Oil permeated sweeping compound may assist in the cleanup of toner spilled on nonporous surfaces.

Personal Precautions: Avoid inhalation of dust.

Section 7 – Handling and Storage



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Precautions for Safe Handling and Use: To avoid damage to cartridge and accidental contact with toner – Keep out of reach of small children.

Conditions for Safe Storage: Store in a cool dry place.

Section 8 – Exposure Controls/Personal Protection

Iron oxide (as iron):

5 mg/m³ ACGIH TLV

Carbon black:

3.5 mg/m³ OSHA TWA PEL

3.5 mg/m³ ACGIH TWA TLV - ACGIH A4 - Not classifiable as a human carcinogen (Proposed addition 1995-1996)

3.5 mg/m³ NIOSH recommended 10 hour TWA

0.1 mg/m³ NIOSH recommended 10 hour TWA (in the presence of polycyclic aromatic hydrocarbons)

Measurement

Method: Particulate filter; gravimetric; (NIOSH III # 5000).

In Canada, consult local authorities for acceptable provincial values.

Ventilation: Provide adequate ventilation (ASHRAE 62).

Personal Protective Equipment:

Respirator: No respirator is required under normal conditions of use. Under conditions of frequent or heavy exposure protection may be needed.

Eye Protection: If significant eye exposure is anticipated, the use of chemical splash goggles is recommended.

Eye Wash: Where there is a potential for eye exposure to this substance, an eye wash fountain should be provided within the immediate work area for emergency use.

Clothing: Protective clothing is not required under normal conditions.

Protective Gloves: If significant skin exposure is anticipated, appropriate gloves should be worn to prevent skin contact with this substance.

Section 9 – Physical and Chemical Properties

Color: Black

Physical State: Solid (powder)

Odor: Slight

pH: Not applicable

Vapor Pressure: Not available

Vapor Density: Not applicable

Boiling Point/Boiling Range: Not available

Freezing Point or Melting Point/Melting Range: Not available

Evaporation Rate: Not applicable

Solubility in Water: Negligible



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Density: Not available

Percent Volatile: Not applicable

Molecular Weight: Not available

Pressurized (Y/N): N

Section 10 – Stability and Reactivity

Stability: Stable.

Conditions to Avoid: Ignition sources in combustible atmospheres of toner dust, throwing toner into an open fire.

Materials to Avoid/Incompatibility: Strong oxidizers.

Hazardous Decomposition Products: Carbon dioxide, carbon monoxide, and unidentified organics.

Hazardous Polymerization: This product will not polymerize.

Section 11 – Toxicological Information

CARBON BLACK

Toxicity Data: >10 gm/kg oral-rat LD₅₀ (EM Science MSDS); 120 mg/kg intravenous-rat LD₅₀ (THIDD6).

Carcinogenicity Status:

In 1996 the International Agency for Research on Cancer (IARC) reevaluated carbon black as a Group 2B carcinogen (possible human carcinogen), based upon the development of lung tumors in rats receiving chronic inhalation exposures of free carbon black. The effects were observed only in rats exposed to high concentrations of carbon black at levels that induce particle overload of the lung. Studies performed in animal models other than rats (i.e., mice, hamsters) 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.

In contrast to the IARC assessment, neither the Occupational Safety and Health Administration (OSHA) nor the American Conference of Governmental Industrial Hygienists (ACGIH) have listed carbon black as a carcinogen.

Epidemiology studies of workers in the carbon black producing industries of North America and Western Europe do not demonstrate an association between carbon black and cancer, even in high exposure occupational settings. In addition, in its reevaluation of carbon black, IARC concluded that "there is *inadequate evidence* in humans for the carcinogenicity of carbon black". Chronic overexposure to many dusts, including carbon black dust, may result in respiratory tract irritation and slight changes in pulmonary function.



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Collectively, the available animal data and human epidemiology studies suggest that carbon black, as contained in this product, does not present a cancer risk to the end user if the handling and personal protective measures contained within this MSDS are understood and followed.

Local Effects: Irritant - inhalation, skin.

Acute Toxicity Level: Slightly toxic by ingestion.

Target Effects: Toxic overexposure may affect the respiratory system, the heart, skin and mucous membranes.

At Increased Risk From Exposure: Persons with certain pre-existing upper respiratory disorders, such as bronchitis or asthma.

PRODUCT DATA – Toner

Toxicity Data:

LD50 (rat,oral): expected to be > 5000mg/kg

LD50 (rabbit,skin): not available

LD50 (rat, inhal): not available

Acute Toxicity Level: not acutely toxic

Chronic Toxicity: Contents of cartridge are not expected to be toxic. Industry tests on similar generic toner showed no signs of overt toxicity. Rats exposed to high levels of toner showed a chronic inflammatory response and a mild to moderate degree of lung fibrosis. There were no pulmonary changes of any type at lower toner exposure levels, which are the most relevant to potential human exposures. See information in Section 3 and earlier in this section for carbon black carcinogenicity status.

Carcinogenicity: Toner is not listed by IARC, NTP, or OSHA.

Teratogenicity: Not available.

Mutagenicity: Not available.

Section 12 – Ecological Information

Environmental Impact Rating (0-4): Not available.

Acute Aquatic Toxicity: Not available.

Degradability: Not available.

Log Bioconcentration Factor (BCF): Not available.

Log/Octanol/Water Partition Coefficient: Not available.

Section 13 – Disposal Considerations

Disposal Methods/Waste Disposal: This product is not a listed or hazardous waste in accordance with Federal Regulation 40 CFR Part 261. If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the



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time of disposal whether a material has been contaminated and should be classified as a hazardous waste.

Observe all federal, regional, and local regulations when disposing of this product.
Contact local waste vendors for proper disposal.

Section 14 – Transport Information

	Proper Shipping Name	Hazard Class	UN/ID Number	Packing Group	Special Provisions	Exceptions
DOT (United States)	Not applicable – this product is not regulated as a hazardous material.	--	--	--	--	--

Mexico/Latin America

Regulations for Land Transportation of Hazardous Materials and Wastes: Not available.

United Nations Recommendations on the Transport of Dangerous Goods: Not regulated.

NOM-004-SCT2-1994: Not available.

North American Emergency Response Guide: Not regulated.

Section 15 – Regulatory Information

Australia

All ingredients are listed in **Australian Inventory of Commercial Substances (AICS)**, have been registered, or are exempt.

Canada

All ingredients are listed on the **Canadian Domestic Substances List (DSL)**, have been registered on the **Non-Domestic Substances List (NDSL)**, or are exempt.

WHMIS Classification: This product is considered a manufactured article and therefore is not WHMIS controlled.

Europe

All ingredients are exempt, registered or considered registered (polymers) under **European Inventory of Existing Commercial Substances (EINECS)**.

Japan

All ingredients are listed on the Japanese **Existing and New Chemical Substances (ENCS)** list, have been registered, or are exempt.



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United States

TSCA Inventory Status: All ingredients are registered under the Toxic Substances Control Act or under polymer exemption.

None of the ingredients in this product has a final reportable quantity (RQ) under **Emergency Planning and Community Right to Know Act (EPCRA) – Section 302: Extremely Hazardous Substances (EHS)** or notification requirements for **EHS** under **Section 304**.

California Proposition 65: This product contains no known materials that the State of California has found to cause cancer, birth defects or other reproductive harm.

Section 16 – Other Information

MSDS Prepared By: IBM Printing Systems Division, Boulder, Colorado, USA

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