



MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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

24 Hour Emergency Source Information
1-800-426-4333
International Emergency Number
1-303-739-1111

In U.S.A. Call: 1-800-426-4333

In Canada Call: 1-800-426-4968

Product Name: Infoprint 2085 / 2105 / 2060ES / 2075ES / 2090ES / 2105ES Toner

IBM Part Number: 53P6724, 57P1416, 10R2774, 10R2274

IBM Material Reference Number: 940104670

Trade Names/Synonyms: None

Product Use: Printing toner

MSDS Creation Date: 4/12/02

MSDS Revision Date: 9/12/03

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

Component	Percentage	CAS Registry Number
Polyester resin	<60	117581-13-2
Polyester resin	<60	116736-81-3
Polyester resin	<30	149367-99-7
Carbon black	<15	1333-86-4
Carnauba wax	<10	8015-86-9

See Section 8 for exposure limits.

SECTION 3 - HAZARDS IDENTIFICATION

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

Emergency Overview:

Low hazard for recommended use and handling: 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. Avoid exposure to eyes, skin or clothing (will stain). Keep container closed. Use with adequate ventilation.

Potential Health Effects

Primary Routes of Entry:

Inhalation: Yes

Long Term Effects: Potential risk of irreversible pulmonary effects.*

*Chronic exposure is not expected when this product is used as intended.

Skin Contact: No

Ingestion: No



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Carcinogen Status:

OSHA: N

NTP: N

ACGIH: N

IARC: Y (Carbon Black)

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 to free carbon black. The effects were observed only in animals exposed to high concentrations of 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, a two-year cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats.

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. 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.

SECTION 4 - FIRST AID MEASURES

Inhalation: Gargle with water, move to place in fresh air. If symptoms persist, get medical attention.

Skin Contact: Wash thoroughly with soap and water.

Eye Contact: Try to remove with eye drops or flush with water. If symptoms persist, get medical attention.

Ingestion: Dilute stomach contents with several glasses of water. If symptoms persist, get medical attention.

SECTION 5 - FIRE FIGHTING MEASURES

Fire-Fighting Instructions: Generally by sprinkling or extinguisher.

Means of Extinction: Carbon dioxide, dry chemicals, foam, or water.

Flash Point (Method): Not applicable.

Lower Flammable Limit: Not available.

Upper Flammable Limit: Not available.

Autoignition Temperature: Not applicable.



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SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions: Minimize inhalation of dust.

Environment Precautions: Keep product out of sewers and watercourses.

Methods for Cleaning Up: If spilled, sweep up or pick up by vacuum cleaner (rated for Toner 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 conditions, packaging material): Avoid direct sunlight. Do not keep this over 35 °C. Keep out of reach of children.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

Exposure Limits:

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).

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

Physical State: Solid (powder)

Odor and Appearance: Slightly plastic odor, black



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Boiling Point: Not applicable
Melting Point: Approximately 110 °C
Vapor Pressure: Not applicable
Vapor Density (air=1): Not applicable
Specific Gravity: 1.2
Water Solubility: Insoluble
pH: Not applicable
Evaporation Rate: Not applicable
Pressurized (Y/N): N

SECTION 10 - STABILITY AND REACTIVITY

Conditions to Avoid: Not applicable in normal use.
Incompatible Materials: Not applicable in normal use.
Hazardous Decomposition Products: Will not occur.
Polymerization: None.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute Toxicity:

Acute Oral Toxicity: ≥ 5000 mg/kg
Acute Dermal Toxicity: Not available
Acute Inhalation Toxicity: Not available

IBM Toner (IBM has reported the following*):

Mutagenic Data: Negative in Ames test*.
Carcinogen Status: IARC Group 2B (carbon black).
Acute Toxicity Level: No data available.
Target Effects: No data available.

Carbon black:

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

Carcinogen Status:

Human Data: Epidemiological studies of workers in carbon black producing industries of North America and Western Europe show no evidence of clinically significant adverse health effects due to occupational exposure to carbon black. Early studies performed in the former USSR and Eastern Europe report respiratory disease among workers exposed to carbon black, including: bronchitis, pneumoconiosis, emphysema, and rhinitis. These studies are of questionable validity due to inadequate study design and methodology, lack of appropriate controls for smoking tobacco, and other confounding variables such as exposures to carbon monoxide, coal oil, and petroleum vapors. Furthermore, review of these studies indicates that work environment concentrations of carbon black were considerably greater than current occupational exposure standards. In its Monograph Volume 65,



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issued April 1996, IARC reevaluated carbon black and concluded that "there is *inadequate evidence* in humans for the carcinogenicity of carbon black".

Animal Data: Chronic inflammation, lung fibrosis, and lung tumors have been observed in some rats exposed experimentally, for long periods of time, to excessive concentrations of carbon black and several other fine dust particles. Tumors have not been observed in other animal species (i.e. mice, hamsters) under similar circumstances and study conditions. Many researchers conducting rat inhalation toxicity studies believe that these effects most likely result from the massive accumulation of fine dust particles in the lung, which overwhelm the lung clearance mechanisms, resulting in "lung overload" phenomenon, rather than from a specific chemical effect associated with the dust particles in the lung.

Many inhalation toxicologists believe that the tumor response observed in the referenced rat studies is species-specific and does not correlate to human exposure. However, the IARC reevaluation in Volume 65 concluded that "there is *sufficient evidence* in experimental animals for the carcinogenicity of carbon black". Based upon this reevaluation, IARC's overall evaluation is that "carbon black is *possibly carcinogenic to humans (IARC Group-2B)*".

Carbon black has not been listed as a carcinogen by the National Toxicology Program (NTP), nor the Occupational Safety and Health Administration (OSHA).

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.

Sensitization:

Acute Skin Irritation: Non-irritant.

Acute Eye Irritation: Not applied.

Acute Allergenic Effects: No applicable information was found.

Reproductive Toxicity: No data is available on this product.

Teratogenicity: Not available.

Mutagenicity: Negative (Ames test).

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:

Acute Toxicity for Fish: Not available.

Acute Toxicity for Daphnia: Not applicable.

Acute Inhibition Test: Not applicable.

Persistence/Degradability: Not known.

Bioaccumulation: Not known in bioaccumulation.



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SECTION 13 - DISPOSAL CONSIDERATIONS

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.

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

SECTION 14 - TRANSPORT INFORMATION

International Regulations:

- RID/ADR:** Not applicable.
- DOT 49 CFR:** Not applicable.
- ADNR:** Not applicable.
- IMDG Code:** Not applicable.
- ICAO-TI / IATA-DGR:** Not applicable.
- UN Classification Number:** Not applicable.

Specific Precautionary Transport Measures: Avoid direct sunlight. Do not keep over 35 °C.

Specific Materials to Avoid: None in normal use.

SECTION 15 - REGULATORY INFORMATION

United States:

TSCA Inventory Status (Y/N): Y

Canada:

WHMIS Classification: None – Manufactured article.

European Union:

All ingredients are listed on EINECS, ELINCS, or are exempt.

SECTION 16 - OTHER INFORMATION

Explanation of Hazardous Materials Identification System [HMIS] Hazard Rating System: The HMIS system uses numbers 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 the system: Blue = Health Hazard, Red = Fire Hazard, Yellow = Reactivity Hazard, White = Indicates a Special Hazard
HMIS will specify any Personal Protective Equipment required [PPE].

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