



MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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In U.S.A., call: 1-800-IBM-4333

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NAME: IBM Infoprint 1130, 1140 Toner Cartridge

IBM Part Number: 28P2007, 28P2008, 28P2009, 28P2010, 53P7983

IBM Material Reference Number: 940086100

TRADE NAMES/SYNONYMS: Toner Cartridge, EP Cartridge, Toner

CHEMICAL FAMILY: Toner

PRODUCT USE: Replacement toner print cartridge for the IBM Infoprint 1130 and 1140 printer

CREATION DATE: 26 June 2001

REVISION DATE:

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

TONER

COMPONENT: Iron oxide

CAS NUMBER: 1317-61-9, 12227-89-3

PERCENTAGE: (5-15%)

COMPONENT: Polyester Resin

CAS NUMBER: (1)

PERCENTAGE: (50-90%)

COMPONENT: Pigment

CAS NUMBER: 12227-89-3

PERCENTAGE: not specified

COMPONENT: Carbon Black

CAS NUMBER: 1333-86-4

PERCENTAGE: 1-10%

COMPONENT: Polymer Wax

CAS NUMBER: (2)

PERCENTAGE: 0.5-5%

COMPONENT: Amorphous Silica

CAS NUMBER: 68909-20-6

PERCENTAGE: 0.5-5%

COMPONENT: Polyethylene Wax

CAS NUMBER: 9002-88-4

PERCENTAGE: 0.5-5%

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

(2) Trade secret or patented molecule.

SECTION 3 - HAZARDS IDENTIFICATION



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EC CLASSIFICATION (CALCULATED): not determined

EMERGENCY OVERVIEW:

Signs and Symptoms of Exposure: Toner on skin or mucus membranes (mouth, eyes and respiratory system) may cause discomfort. Minimal respiratory tract irritation may occur as with exposure to large amounts of any non-toxic dust.

Medical Conditions Aggravated by Exposure: None known at indicated levels of use. Exposures to high airborne dust concentrations, including toner, may aggravate existing respiratory conditions.

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

CARBON BLACK:

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

ROUTES OF ENTRY: Dust inhalation, skin contact

IRRITANCY OF PRODUCT: see Emergency Overview

POTENTIAL HEALTH EFFECTS:

INHALATION:

SHORT TERM EFFECTS: 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 amount of toner dust are inhaled. Exposure not probable with intended use.

LONG TERM EFFECTS: No adverse chronic effects known at expected 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.

CARBON BLACK : Potential risk of irreversible pulmonary effects.*

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

SKIN CONTACT:

SHORT TERM EFFECTS: 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. Exposure not probable with intended use.

LONG TERM EFFECTS: Rare individuals may note skin rash with repeated contact. Exposure not probable with intended use.

EYE CONTACT:

SHORT TERM EFFECTS: Toner may act as mechanical irritant. Exposure not probable with intended use.

LONG TERM EFFECTS: No adverse chronic effects known. Exposure not probable with intended use.

INGESTION:

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

LONG TERM EFFECTS: No adverse chronic effects known. Exposure not probable with intended use.

CARCINOGEN STATUS:

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



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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: Remove from area of exposure. Seek medical attention if difficulty in breathing is experienced.

SKIN CONTACT: Wash affected area with soap and water. Seek medical attention if symptoms occur.

EYE CONTACT: Flush immediately with large amounts of running water for 15 minutes. Seek medical attention if irritation persists.

INGESTION: If conscious wash out mouth with water. Dilute stomach contents with 1-2 glasses of water. Seek medical attention.

SECTION 5 - FIRE FIGHTING MEASURES

CONDITIONS OF FLAMMABILITY: see section 10

EXTINGUISHING MEDIA: Water, dry chemical or foam.

FIRE FIGHTING: Fire may produce hazardous decomposition products such as carbon dioxide, carbon monoxide, and unidentified organics. NIOSH approved self-contained breathing apparatus may be required.

FLASH POINT (METHOD): Not applicable.

LOWER FLAMMABLE LIMIT: Not available.

UPPER FLAMMABLE LIMIT: Not available.

AUTOIGNITION TEMPERATURE: Not available.

HAZARDOUS COMBUSTION PRODUCTS: CO, CO₂, and low molecular weight organics.

EXPLOSION DATA: Like many finely divided materials, toner dust, in high concentrations can form an explosion mixture in air which, if ignited, could result in dust explosion.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE: 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 dust. Minimize dust generation during clean up. Sweep up spill with non-metallic broom and dustpan. Contain for disposal.

SECTION 7 - HANDLING AND STORAGE

Store away from oxidizing materials. When handling, minimize generation of dust. Supply adequate ventilation. Store in a cool dry place.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:



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IRON OXIDE :

5 mg/MF

ACGIH TWA TLV - ACGIH (TOTAL DUST MEASURED AS IRON)

AMORPHOUS SILICA

15 mg/MF

OSHA PEL

5 mg/MF

OSHA PEL (RESPIRABLE FRACTION)

10 mg/MF

ACGIH TLV

CARBON BLACK:

3.5 mg/MF

OSHA TWA PEL

3.5 mg/MF

ACGIH TWA TLV - ACGIH A4 - Not classifiable as a human carcinogen
1995-1996)

(Proposed addition

3.5 mg/MF

NIOSHrecommended 10 hour TWA

0.1 mg/MF

NIOSHrecommended 10 hour TWA (in the presence of polycyclic aromatic

hydrocarbons)

Measurement method: Particulate filter; gravimetric; (NIOSHIII # 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 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: Black powdery material, with slight odor.

BOILING POINT: Not applicable

FREEZING POINT: Not available

VAPOR PRESSURE: Not applicable

VAPOR DENSITY: Not applicable

SPECIFIC GRAVITY: Not available

WATER SOLUBILITY: Negligible

VOLATILITY: Not applicable

PH: Not applicable

ODOR THRESHOLD: not available

EVAPORATION RATE: Not applicable

COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

PRESSURIZED (Y/N): N

SECTION 10 - STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: none known

INCOMPATIBLE MATERIALS: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO₂ and unidentified organics.

POLYMERIZATION: Will not occur.



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SECTION 11 - TOXICOLOGICAL INFORMATION

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, 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.

PRODUCT DATA

TOXICITY DATA:

LD50 (oral, rat): expected to be > 5000 mg/kg, based on data from similar toners

LD50 (rbt,skin): not available

LC50 (rat,ihl): expected to be > 5000 mg/kg, based on data from similar toners

ACUTE TOXICITY LEVEL: Not expected to be acutely toxic

CHRONIC TOXICITY: Not expected to be chronically 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 the lower toner exposure level,



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which is most relevant in regard to potential human exposures. Long term exposure to excessive concentration of iron oxide-containing dusts has resulted in a condition identified as siderosis, a relatively benign pneumoconiosis, caused by deposition of iron oxide particles in the lung. Pure carbon black, a minor component of this toner, has been listed by IARC as a group 2B (possible carcinogen) based on rat lung particulate overload studies. Toner is not listed by IARC, NTP, or OSHA.

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

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 time of disposal whether a material has been contaminated and should be classified as a hazardous waste. Disposal is subject to local, state and federal regulations.

SECTION 14 - TRANSPORT INFORMATION

This product is not regulated as a hazardous material under current U.S. DOT

SECTION 15 - REGULATORY INFORMATION

UNITED STATES:

TSCA INVENTORY STATUS (Y/N): Yes or under polymer exemption

All ingredients are registered or considered registered (polymers) under EINECS/ELINCS.

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

All ingredients are listed on the PICCS, are registered, or are exempt.

NONE of the ingredients in this product has a final reportable quantity (RQ) under EPCRA- Section 302 Extremely Hazardous Substances, or notification requirements for EHS under Section 304.

Components Present above the minimum quantities of listed chemicals in EPCRA - Section 313

Supplier Notification: The toner product contains <5% of a zinc compound

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

CANADA: This product is a “manufactured article” and is exempt from the new substances provisions of the Canadian Environmental Protection Act.

WHMIS Classification - Manufactured article’ therefore, product is exempt under WHMIS

SECTION 16 - OTHER INFORMATION

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