IBM. MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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

In CANADA, call: 1-800-IBM-4YOU

NAME: INFOPRINT 4000 ENHANCED PRINTING DEVELOPER (69G7370) IBM Field Use Number: 69G7370

TRADE NAMES/SYNOMYMS: HS-304S DEVELOPER; IBM P/N: 69G7370

CHEMICAL FAMILY:

PRODUCT USE: Office supply product (developer)

CREATION DATE: October 4, 2000 REVISION DATE: October 17, 2000

SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: Infoprint 4000 Enhanced Printing Toner (69G7371) CAS NUMBER: See Infoprint 4000 Enhanced Printing Toner (69G7371) MSDS EC NUMBER: PERCENTAGE: <10

COMPONENT: Manganese Ferrite CAS NUMBER: 68186-94-7 EC NUMBER: 269-056-3 PERCENTAGE: >90

COMPONENT: Carbon Black CAS NUMBER: 1333-86-4 EC NUMBER: 215-609-9 PERCENTAGE: 0.1-1

COMPONENT: Silicone resin CAS NUMBER: 123127-08-2 EC NUMBER: exempted (polymer) PERCENTAGE: 0.1-1

SECTION 3 - HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=0 REACTIVITY=0

EC CLASSIFICATION (CALCULATED): No classification assigned.

EMERGENCY OVERVIEW: Black fine combustible powder.

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:

INHALATION:

SHORT TERM EFFECTS: No information on significant adverse effects. LONG TERM EFFECTS: Potential risk of irreversible pulmonary effects*. *Chronic exposure is not expected when this product is used as intended.

SKIN CONTACT:

SHORT TERM EFFECTS: No information on significant adverse effects. LONG TERM EFFECTS: No information on significant adverse effects.

EYE CONTACT:

SHORT TERM EFFECTS: No information on significant adverse effects. LONG TERM EFFECTS: No information on significant adverse effects.

INGESTION:

SHORT TERM EFFECTS: Ingestion of harmful amounts is unlikely. LONG TERM EFFECTS: Ingestion of harmful amounts is unlikely.

CARCINOGEN STATUS: OSHA: N

NTP: N

IARC: Y (Carbon Black)

Carbon black has been classified as a group 2B by IARC, however, Inhalation test using a typical toner containing carbon black has not demonstrated an association between toner exposure and animal tumors.

In 1996 the International Agency fo 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 biassay 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 end user if the handling and personal protective measures contained within this MSDS are understood and followed

ACGIH: N

SECTION 4 - FIRST AID MEASURES

INHALATION: Remove to fresh air. Treat any irritation symptomatically. Call a physician.

SKIN CONTACT: Immediately wash thoroughly with soap and plenty of water.

EYE CONTACT: Immediately, flash eyes with plenty of water until irritation subsides. Call an eye doctor.

INGESTION: If swallowed, give water to wash in the mouth. Call a physician.

SECTION 5 - FIRE FIGHTING MEASURES

CONDITIONS OF FLAMMABILITY: None

MEANS OF EXTINCTION: Carbon dioxide, foam and dry chemical powder.

FLASH POINT (**METHOD**): N/AP LOWER FLAMMABLE LIMIT: N/AP UPPER FLAMMABLE LIMIT: N/AP AUTOIGNITION **TEMPERATURE:** N/AP

HAZARDOUS COMBUSTION PRODUCTS: None

EXPLOSION DATA: No data

SENSITIVITY TO MECHANICAL IMPACT: No data SENSITIVITY TO STATIC DISCHARGE: No data

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Small Spill and Leak: Sweep up and discard to it into a waster container. Large Spill and Leak: Dispose of waste in accordance with applicable federal, state/regional, and local regulations.

SECTION 7 - HANDLING AND STORAGE

- Handling: Do not contact it with eyes, skin or clothing. Wash thoroughly after handling. Provide adequate ventilation to avoid dust.
- Storage: Keep container closed. Store in cool and dark place and keep away from heat open flame and sparks

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE GUIDELINE: Not Established

EXPOSURE LIMITS:

Carbon black:

- 3.5 mg/m3 OSHA TWA PEL
- 3.5 mg/m3 ACGIH TWA TLV-ACGIH A4-Not calssifiable as a human carcinogen (proposed addition 1995-1996)
- 3.5 mg/m3 NIOSH recommended TWA 10 hour(s)
- 0.1 mg/m3 NIOSH recommended TWA 10 hour(s) (in the presence of polycyclic aromatic hydrocarbons)

Measurement method: Pariculate filter; gravimetric; (NIOSH III #5000).

In Canada, consult local authorities for acceptable provincial values.

PERSONAL PROTECTION:

VENTILATION: Use of local exhaust ventilation.

RESPIRATOR: In dusty atmospheres, use an approved dust respirator.

EYE PROTECTION: None (under normal use) Large exposure: Protective goggles.

PROTECTIVE GLOVES: None (under normal use) Large exposure: Protective gloves.

OTHER PROTECTIVE EQUIPMENT: None (under normal use) Large exposure: Protective clothing and dust mask.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Solid ODOR AND APPEARANCE: Faint odor and black fine powder BOILING POINT: N/AP MELTING POINT: >1400°C FREEZING POINT: N/AP VAPOR PRESSURE: N/AP VAPOR DENSITY: N/AP SPECIFIC GRAVITY: 5.0 (H20=1) WATER SOLUBILITY: Insoluble (Negligible) VOLATILITY: N/AP PH: Not relevant ODOR THRESHOLD: N/AP EVAPORATION RATE: N/AP COEFFICIENT OF WATER/OIL DISTRIBUTION: N/AP PRESSURIZED (Y/N): N

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS OF REACTIVITY: Stable at normal temperatures and pressure. CONDITIONS TO AVOID: N/AP INCOMPATIBLE MATERIALS: None

HAZARDOUS DECOMPOSITION PRODUCTS: None

POLYMERIZATION: Will not occur

SECTION 11 - TOXICOLOGICAL INFORMATION

IBM Infoprint 4000 Enhanced Printing Toner (69G7371) (IBM has reported the following*)

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 not 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 Bolume 65, issued April 1996, IARC reevaluated carbon black and concluded that "there is *inadequate evidence* in humans for the carcinogenicity of carbon black".

<u>Animal Data:</u> 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 int 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 balck is *possibly carcinogenic to humans* (IARC Group-2B)".

Carbon black has not been listed as a carcinogen by the National Toxicolgy 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 repiratory system, the heart, skin and mucous membranes. AT INCREASED RISK FROM EXPOSURE: Persons with certain preexisting upper respiratory disorders, such as bronchitis or asthma. SENSITIZATION TO PRODUCT: No data TOXICOLOGICALLY SYNERGISTIC PRODUCTS: No data REPRODUCTIVE TOXICITY: No data TERATOGENICITY: No data

MUTAGENICITY:

Animal Data: INFOPRINT 4000 ENHANCED PRINTING TONER (69G7371) Ames test: Negative (OECD471) Irritant effect on skin; Non-irritant (OECD404; rabbit) Irritant effect on eyes; Minimal irritant, No symbol or risk phrase required (OECD405; rabbit eyes) Acute inhalation toxicity >4.9g/l(dust) (OECD403)

SECTION 12 - ECOLOGICAL INFORMATION

ENVIRONMENTAL IMPACT RATING (0-4): No data

ACUTE AQUATIC TOXICITY: No data

DEGRADABILITY: No data

LOG BIOCONCENTRATION FACTOR (BCF): No data

LOG OCTANOL/WATER PARTITION COEFFICIENT: No data

SECTION 13 - DISPOSAL CONSIDERATIONS

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

SECTION 14 - TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

SHIPPING NAME: Not Regulated PRODUCT IDENTIFICATION NUMBER (PIN): None SHIPPING CLASS/DIVISION: None PACKING GROUP: None

PACKAGING AUTHORIZATIONS: Not Regulated

EXCEPTIONS: None NON-BULK PACKAGING: None BULK PACKAGING: None

QUANTITY LIMITATIONS: Not Regulated PASSENGER AIRCRAFT OR RAILCAR: None CARGO AIRCRAFT ONLY: None

CANADA TRANSPORTATION OF DANGEROUS GOODS (TDG) REGULATIONS: Not Regulated

SECTION 15 - REGULATORY INFORMATION

UNITED STATES:

TSCA INVENTORY STATUS (Y/N): Y

TSCA SECTION 12(b) EXPORT NOTIFICATION.

CERCLA SECTION 103 (40CF302.4): None SARA SECTION 302 (40CFR355.30): None SARA SECTION 304 (40CFR355.40): None SARA SECTION 313 (40CFR372.65): None

OSHA PROCESS SAFETY (29CFR1910.119): This product is not hazardous under the criteria of the Federal OSHA hazard Communication Standard 29CFR 1910.1200. CALIFORNIA PROPOSITION 65: Not Regulated

SARA HAZARD CATEGORIES, SARA SECTIONS 311/312 (40 CFR370.21): Non-hazardous Under SARA Section 311/312

ACUTE HAZARD: None CHRONIC HAZARD: None FIRE HAZARD: None REACTIVITY HAZARD: None SUDDEN RELEASE HAZARD: None

CANADA:

WHMIS CLASSIFICATION: D2A

100% ingredients are listed on the Domestic Substance List.

This product has been classified in accordance with the hazard criteria of the CPR and MSDS contains all the information required by the CPR.

SECTION 16 - OTHER INFORMATION

To best of our knowledge, the information contained herin is accurate. However, we cannot assume any liability whatsoever for the accuracy of completeness of the information contained herein. Final determination of suitability of any material is sole responsibility of the user. All material may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are only hazards that exist.

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