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MATERIAL SAFETY DATA SHEET

Section 1: Chemical Product and Company Information

Identity: **Toner for 1210, 1240, 1260**
 Product ID: 491-0282
 Synonyms & Common Names: Toner, Black Toner
 Uses: 1210, 1240, 1260 Fax
 Chemical Formula: Mixture

MSDS No. **FX-071**
 Issued: 8/26/97
 Supersedes: none
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Prepared by: Lanier QA/EH&S Department

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Section 2: Composition / Information on Ingredients

	PERCENT	CAS No.	EXPOSURE LIMITS	SOURCE
Polyester resin	> 85	confidential	not listed	n/a
Carbon black	1 ~ 5	1333-86-4	3.5mg/m ³ 3.5mg/m ³	OSHA PEL ACGIH TLV
Polyolefin wax	1 ~ 5	confidential	not listed	n/a
Organic pigment	1 ~ 5	confidential	not listed	n/a
Quaternary ammonium salt	< 1	confidential	not listed	n/a

Section 3: Hazards Identification

Hazard Rating: HMIS / NFPA
 FLAMMABILITY = 1
 HEALTH = 1

REACTIVITY = 0
 SPECIAL = none

Emergency Overview

Product is stable. If used as intended, the product does not present an acute or chronic health hazard.

Physical Hazards
 Routes of Exposure
 Inhalation
 Eye Contact
 Dermal Contact
 Ingestion

Dust explosion (like most finely divided organic powders)
 Inhalation, eye contact, incidental ingestion.
 Excessive inhalation may cause irritation of the nose, throat and respiratory tract.
 Not an irritant
 Not an irritant; not a sensitizer.
 None currently known.

Chronic Effects/ Carcinogenicity :
 Reproductive/Developmental
 Target Organs

See Section 11.
 None identified.
 Prolonged breathing of high concentrations may cause adverse effects on the respiratory system.

Signs & symptoms of exposure
 Medical conditions aggravated by exposure

Prolonged exposure to this product may irritate the respiratory system.
 Respiratory disorders, such as asthma, may be aggravated by prolonged exposure to high concentrations of this product.

Section 4: First Aid Measures

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Inhalation: Remove to fresh air if effects occur or a physician if there is any difficulty in breathing or signs of distress.
Eye Contact: In case of contact, immediately flush eyes with water for 15 minutes. If irritation persists, call a physician.
Skin Contact: Wash with soap and water before reuse. If irritation occurs or is persistent, seek medical attention.
Wash clothing: Wash clothing before reuse. If irritation occurs or is persistent, seek a physician.
Ingestion: Dilute stomach contents with several glasses of water. Call a physician.

Section 5: Fire Fighting Measures

Suitable extinguishing media: CO₂, dry chemical, foam or water spray
Extinguishing media which may not be used for safety reasons: full water jet
Unusual Fire & Explosion Hazard: Combustible powder. Dust of this product at sufficient concentrations can form explosive mixtures with air.
 This material will burn in case of fire. The decomposition products are CO, CO₂, and smoke.
Special protective equipment for fire fighters: Use self-contained breathing apparatus
UEL: n/a **LEL:** n/a

Section 6: Accidental Release Measures

Sweep up or clean up with an approved toner vacuum. Carefully transfer into a sealable waste container. Residue can be removed with soap and cold water

Section 7: Handling and Storage

Special Handling: Avoid dust, keep away from ignition sources
Special Storage: No special storage requirements for safety reasons. Store in a cool dry place.

Section 8: Exposure Control and Personal Protection Information:

Respiratory Protection: none required under normal use. **Hand Protection:** none required under normal use.
Eye Protection: none required under normal use. **Skin Protection:** none required under normal use.
Exposure Limits: OSHA (TWA/PEL as the product) 15mg/m³ (total dust), 5mg/m³ (respirable dust)
 ACGIH (TWA/TLV as the product) 10mg/m³ (total dust)
 DFG-MAK 6mg/m³ (total dust)
 Worksafe-TWA (Australia) 10mg/m³ (total dust)

Section 9: Physical and Chemical Properties

CHARACTERISTICS:

Appearance:	Black	Softening point:	120 - 130 °c
Form:	Fine powder	Vapor pressure:	n/a
Odor:	Faint odor	Vapor density:	n/a
Solubility in Water:	Negligible	Evaporation rate:	n/a
Specific gravity:	1.2	Boiling point:	n/a
Particle size	5 ~ 15 µ m	Ignition temp	450°C

Section 10: Stability and Reactivity

Conditions to avoid: Electronic discharge, throwing into fire **Materials to avoid:** Oxidizing materials
Stability: Stable **Hazardous decomposition products:** CO and CO₂ when burned.

Section 11: Toxicological Information:

Acute oral toxicity (rat) LD₅₀: Over 5.0 g/kg **Acute Inhalation:** LC₅₀ (4H) is in excess of 0.74 g/m³ (rat)
Mutagenicity: Ames Test result: Negative **Dermal:** LD50 Over 2.0 g/kg (rat)
Skin sensitizer: None indicated (Guinea-pig) **Eye Irritation:** Not an irritant (rabbit)
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 rats receiving chronic inhalation exposures to free carbon black at a level that induce particle overload of the lungs. Studies performed in mice 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 and tumor development in rats.
Chronic Effects: In a chronic inhalation study in rats using a special test toner revealed there were no lung changes at all in the lowest exposure level (1mg/m³), the most relevant level to potential human exposures. A very slight degree of fibrosis was noted in 25% of the animals at the middle

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exposure level (4mg/m³), while a slight degree of fibrosis was observed at the highest exposure level (16mg/m³) in all animals. These findings are attributed to "Lung Overloading", a generic response to excessive amount of any dust retained in the lungs for a prolonged interval. The special test toner was ten times more respirable than commercially available toner to comply with EPA testing protocol and would not function properly in xerographic equipment.

Section 12: Environmental / Ecological Information

Mobility: No data is available on the adverse effects of this material on the environment.
Persistence/Degradability: No data is available on the adverse effects of this material on the environment.
Bioaccumulation: No data is available on the adverse effects of this material on the environment.
Ecotoxicity. Behavior in Sewage works: No data is available on the adverse effects of this material on the environment.
Aquatic Toxicity: No data is available on the adverse effects of this material on the environment.
Ecological Data (EC) Csb Value (EC): No data is available on the adverse effects of this material on the environment.
AOX-Remark (EC): No data is available on the adverse effects of this material on the environment.
BsB5 Value (EC): No data is available on the adverse effects of this material on the environment.
Significant Components(EC): Not applicable

Section 13: Disposal Consideration

Waste material may be disposed or incinerated under conditions which meet all federal, state and local environmental regulations.
 Empty plastic container may be recycled.

Section 14: Transportation Information

Special Precautions: None

International Transport Information: UN Classification number: None DOT Identification number: None
 Domestic Transportation: n/a Land RID(EC): None ADR(EC): None Inland Waterways ADNR (Rhine R): None Sea: IMDG: None
 Air: ICAO-TI: None IATA-DGR: None

Section 15: Regulatory Information

OSHA Hazard Communication Standard, 29 CFR 1910.1200: Not regulated
TSCA: All chemical substances in this product comply with all applicable rules or orders under TSCA
RCRA, 40 CFR 261: Not regulated
NTP Annual Report on Carcinogens: Not listed as a NTP carcinogen
IARC: See Section 11
California Proposition 65: Neither toner, nor any of its components, are listed as chemicals known to the state of California to cause cancer.
Controlled Products Regulations (Canada): This product has been classified in accordance with the hazard criteria of the CPR.
Other State Regulations: Carbon Black is listed in the New Jersey Right To Know List, Pennsylvania Hazardous Substance List and Massachusetts Substance List.
U.S. / Canada Label Standards: LOW HAZARD FOR RECOMMENDED HANDLING. Minimize dust generation and accumulation. Use with adequate ventilation.
EU Information
Label Information according to Directives 67/548 EEC & 88/379 EEC:
 Symbol & Indication: Not required Risk Phase: Not required Safety Advice Phase: Not required
EEC Directive (76/548 EEC, 79/831, 92/32 EEC): All chemical substances in this product comply with all applicable rules or order under EEC Directive.

Section 16: Miscellaneous Information

Notice: Judgments as to the suitability of information contained herein for purchaser's purposes are the purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of such information, Lanier Worldwide, Inc. extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to purchaser's intended purposes or for consequences of its use. All materials may present unknown hazards and should be used with caution. Although certain hazards are described within, we do not guarantee that these are the only hazards which exist.

References: IARC (1996) IARC Monographs on the Evaluation of the Carcinogenic Risks of Chemical to Humans, Vol. 65, Printing Processes and Printing Inks, Carbon Black and Some Nitro Compounds. Lyon, pp. 149-261.
 H. Muhle, B. Bellmann, O. Creutzenberg, C. Dasenbrack, H. Ernst, R. Klipper, 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.

Abbreviations:

- (1) OSHA PEL; Permissible Exposure Limit under Occupational Safety and Health Administration. (USA)
- (2) ACGIH TLV; Threshold Limit Value under American Conference of Governmental Industrial Hygienists. (USA)

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- (3) DFG-MAK; Maximale Arbeitsplatzkonzentrationen unter Deutsche Forschungsgemeinschaft.
- (4) TWA; Time Weighted Average.
- (5) IARC; International Agency for Research on Cancer.
- (6) NTP; National Toxicology Program. (USA)
- (7) NIOSH; National Institute for Occupational Safety and Health. (USA)
- (8) DOT; Department of Transportation. (USA)

On the basis of the data available to us, this toner is not a dangerous substance. One should, however, observe the usual precautionary measures for dealing with chemicals.