brother

MATERIAL SAFETY DATA SHEET

Product Name
TN-250/TN-300 Toner

Issue Date: Feb. 07, 2003
MSDS No.: YL4TU002

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name(s) : TN-250 Toner and TN-300 Toner
Chemical Name : Black toner
Product Code : Toner N2 and N3
Description : These products are non-magnetic single component toner in a cartridge for Brother Industries, Ltd. page printers and fax receivers.

Manufacturer:
Brother Industries, Ltd.
Information & Document Company
1-1-1, Kawagishi, Mizuho-ku, Nagoya
467-8562, Japan
Telephone (for information): +81-52-824-2545

Importer in USA:
Brother International Corporation
100 Somerset Corporate Boulevard, P.O. Box 6911
Bridgewater, NJ 08807-0911, USA
Telephone (for information): 800-284-4329

Importer in Canada:
Brother International Corporation (Canada) Ltd.
1 Hotel De Ville, Dollard des Ormeaux, Quebec,
H9B 3H6, Canada
Telephone (for information): 514-685-0600

We do not provide 24 hour cover for information contact. Please telephone to the above office appropriate to you during our business hours.

Section 2 – COMPOSITION / INFORMATION ON INGREDIENTS

CAS #	Components	OSHA PEL	ACGIH TLV	% Wt.
1333-86-4	Carbon Black	3.5 mg/m^3	3.5 mg/m^3	3-4
7631-86-9	Silica (Amorphous)	*	*	1-2

*: OSHA establishes a PEL of 15 mg/m^3 (total dust) and 5 mg/m^3 (respirable dust) for "Particles Not Otherwise Regulated". The ACGIH TLV is 10mg/m^3 for these particles. Risks include reduced visibility and physical irritation.

Section 3 – HAZARDS IDENTIFICATION

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Emergency Overview

Characteristics: Fine odorless powder (black colored), water insoluble

Flash Point: Not applicable

HMIS Ratings: Health: 1 Fire: 1 Reactivity: 0

Personal Protection: (See Section 8) - No personal protective device is required under the normal use. In case that some accident causes considerable spill, the following measures are suggested.

Use protective goggles. Use suitable protective gloves. Use a NIOSH/MSHA approved dust/ mist respirator.

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Potential Health Effects

Eyes

This material presents no serious risk of chemical damage to the eyes.

Skin

This material presents no serious risk of chemical damage to the skin.

Ingestion

This material may be harmful if swallowed.

Inhalation

Respiratory tract may be affected by exposure to large amounts of dust from this material.

Section 4 - FIRST AID MEASURES

Eyes

Flush eyes with plenty of water for a minimum of 15 minutes, and seek medical attention.

Skin

Wash material off of skin with plenty of soap and water.

Ingestion

If the material is swallowed, get immediate medical attention or advice.

Inhalation

Remove person to fresh air and seek medical attention. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician

Not provided.

Section 5 - FIRE FIGHTING MEASURES

Flash Point	: Not applicable
Method Used	:
Upper Flammable Limit (UFL)	: Not known
Lower Flammable Limit (LFL)	: 31.6 g/m^3
Auto Ignition	: Not available
Flammability Classification	: Not available
Rate of Burning	: Not available

General Fire Hazards

Minimal fire hazard. Material is self-extinguishing.

Hazardous Combustion Products

Combustion or decomposition will generate phenol derivatives, carbon monoxide, carbon dioxide over 300°C

Extinguishing Media

Dry chemical or carbon dioxide for small fires.
Alcohol-type or all-purpose-type foams for large fires.

Fire Fighting Equipment/Instruction

Not provided

NFPA Ratings:	Health: 1	Fire: 1	Reactivity: 0	Other: -
HMIS Ratings:	Health: 1	Fire: 1	Reactivity: 0	
	Personal Protection: (See Section 8.)			

Section 6 - ACCIDENTAL RELEASE MEASURES

Containment Procedures

Review FIRE FIGHTING MEASURES (Section 5) and EXPOSURE CONTROLS/PERSONAL (Section 8) before proceeding with cleanup. Use appropriate personal protective equipment during cleanup. Prevent release of material into the natural environment.

Clean-up Procedures

If this material is spilled, sweep up the material and recover it, or mix the spilled material with moist absorbent and shovel into suitable waste container. This material is non-hazardous under RCRA.

Evacuation Procedures

Not applicable

Special Instructions

Not applicable

Section 7 - HANDLING AND STORAGE

Procedure for Handling

Avoid dust inhalation and contact.

Recommended Storage Methods

Keep containers tightly closed and store in a cool, well ventilated area. Storage below 35°C is recommended to prevent this material from caking.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

The substance is generally non-hazardous but keep exposure to a minimum.

Component Exposure Limits

Not available

General Product Information

The product is non-magnetic single component toner in a cartridge for use in page printers and fax receivers. This cartridge prevents the toner from spilling from itself. The toner material is generally non-hazardous when NOT a dust or powder. It is generally in fine granule form. In case that some accident causes considerable spill, the following measures are suggested.

Engineering Ctrl.: Use local exhaust ventilation. (Use local ventilation in dusty areas.)

Personal Protective Equipment

Eye/Face	: Use protective goggles.
Skin	: Use suitable protective gloves.
Respiratory	: Use a NIOSH/MSHA approved dust/mist respirator.
General	: Not applicable

Section 9 - PHYSICAL & CHEMICAL PROPERTIES

Appearance	: Black powder	Odor	: Odorless
Physical State	: Solid	pH	: Not available
Vapor Pressure	: Not applicable	Vapor Density	: Not available
Boiling Point	: Not applicable	Freezing Point	: Not available
Melting Point	: Not applicable	Solubility (H20)	: Insoluble
Specific Gravity	: 1.16 @ 20°C (68 F)	Particle Size	: ~0.3 mm
Softening Point	: 129 – 135°C	Evaporation Rate	: Not available
Viscosity	: Not available	Bulk Density	: Not available
Percent Volatile	: Not available	Molecular Weight	: Not available

Additional Properties

Solubility in Chloroform: Not available

Section 10 - CHEMICAL STABILITY & REACTIVITY INFORMATION

Chemical Stability	: Stable
Conditions to Avoid	: Not available

Incompatibility

Strong oxidizing agents

Hazardous Decomposition Products

Combustion or decomposition will generate phenol derivatives, carbon dioxide, and carbon monoxide over 300°C.

Hazardous Polymerization

Will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

Acute Toxicity/Target Organ Information

A. General Product/Component Information

LD50 > 2000mg/kg (Data on similar product)

B. Component LD50 /LC50

Not available

Epidemiology

Not available

Carcinogenicity

A. General Product/Component Information

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 rat receiving chronic inhalation exposures to free carbon black at level 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.

B. Component Carcinogenicity Listings

Not available

Teratogenicity/Reproductive Effects

Not available

Neurotoxicity

Not available

Mutagenicity

Negative (AMES Test; Salmonella typhimurium, Escherichia coli; Data on similar product)

Other Information

Chronic Effects

In a study in rats by chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92 % of the rats in the high concentration (16 mg/m^3) exposure group, and a minimal to mild degree of fibrosis was noted in 22 % of the animals in the middle (4 mg/m^3) exposure group.

But no pulmonary change was reported in the lowest (1 mg/m^3) exposure group, which the most relevant level to potential human exposures.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity

Not available

Environmental Fate

Not available

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

A. General Product Information

Not applicable

B. Component Waste Numbers

Not applicable

Disposal Instructions

Dispose of material waste in accordance with governmental regulations. Prevent release of material into natural environment.

Section 14 - TRANSPORTATION INFORMATION

DOT Information

Shipping Name : Not applicable (Non-hazardous material)
Hazard Class : Not applicable
UN/NA # : Not applicable
Packing Group : Not applicable

Label(s) Required

Not applicable

Additional Shipping Information

Not provided

International Transportation Regulations

Not provided

Section 15 - REGULATORY INFORMATION

US Federal Regulations

A. General Product Information
   × On TSCA Inventory
   Not on TSCA Inventory - Provided under R&D Exemption
B. Component Information
   Not available

State Regulations

A. General Product Information
   Not regulated
B. Component Information
   Not available

Other Regulations

A. General Product Information
   Not available
B. Component Information
   Not available

Section 16 - OTHER INFORMATION

Change of the Material Safety Data Sheet

The same toner is used for both TN-250 and TN-300 cartridges, and so TN-300 was added to this MSDS. Additional product code N3 is included in it, however, there is no difference from the current code N2 from a technical point of view.

Date of Change

February 7, 2003

Other Information

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End of MSDS No.: YL4TU002