



Product Name

Issue Date : July 20, 1999

TN-430 Toner / TN-460 Toner

MSDS No. : ZLTU002

Section 1 - Chemical product and company identification

Product name: TN-430 Toner and TN-460 Toner

Material name: ZEOGLOBULE PT401

These products are black toner in a cartridge for Brother Industries, Ltd. laser printers and fax receivers. The cartridge prevents the toner from spilling in normal use.

Manufacturer:

Brother Industries, Ltd.

Printer Products Division

1-1-1, Kawagishi, Mizuho-ku, Nagoya 467-8562, Japan

Telephone No.: +81-52-824-2771

Section 2 - Composition / information on ingredients

Chemical name: Styrene-acrylate Toner (Mixture)

Ingredients:

CAS#	Components	OSHA PEL	ACGIH TLV	%Wt.
25767-47-9	Styrene-acrylate Copolymer	—	—	—
1333-86-4	Carbon Black	3.5	3.5	5-7
8002-74-2	Paraffin Wax	—	2	1-5
7631-86-9	Silicon Dioxides (Amorphous)	—	—	—

Section 3 - Hazards identification

Emergency overview

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

Flash point: No data available

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

- Eye contact: This material presents no serious risk of chemical damage to the eyes.
- Skin contact: 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**Eye contact**

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

Skin contact

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 and explosion hazard data

Flash point (method used):	Not available
Explosion limits (upper):	Unknown
Explosion limits (lower):	40g/m ³
Auto ignition:	Not available
Dust explosion classification:	3
Rate of burning:	Not available

General fire hazards

Thermal decomposition of organic components may result in occurrence of oxides of carbon.
Dust explosion may occur under the limited conditions.

Hazardous combustion products

Oxides of carbon

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Extinguishing media

Water, ABC dry chemical or protein type air foams are recommended.

Fire fighting equipment/instruction

Do not use methods which may create a dust cloud such as high pressure , water , steam , etc.

NFPA ratings: Health: 1 Fire: 1 Reactivity: 0 Other: 0

HMIS ratings : Health: 1 Fire: 1 Reactivity: 0

Personal protection: (See Section 8.)

Section 6 - Accidental release measures**Containment procedures**

Toner spill does not occur in normal use of the printer/fax receiver and in normal handling of the cartridge. In case of accidental spill, avoid dust inhalation, ingestion and contact.

Review "Fire fighting measures and explosion hazard data (Section 5)" and "Exposure controls / personal protection (Section 8)" before proceeding with cleanup.

Ventilate the room and collect toner spill as much as possible for disposal.

Clean-up procedure

Sprinkle water over the spilled and/or leaked materials and then clean up into a container.

In case of a small quantity of spill, a vacuum cleaner with safety features to prevent dust-explosion and with a bag that will contain very small size of particles (8 - 9 μ m) can be used.

Special instructions

None

Section 7 - Handling and storage**Recommended storage methods**

Store in dry cool place. Keep away from sparks and open flame. Use with adequate ventilation.

Section 8 - Exposure controls / personal protection

The toner material is generally non-hazardous when it is NOT a toner dust floating in the air. The cartridge is designed to prevent toner spillage. In case that some accident causes considerable spillage, this section should be applied.

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Exposure guidelines

Control airborne concentrations below the recommended limit. Use only with adequate ventilation.
Mechanical ventilation is recommended.

Component exposure limits

	<u>OSHA PEL (mg/m³)</u>	<u>ACGIH TLV (mg/m³)</u>
Styrene-acrylate Copolymer	10 *	15 *
Carbon Black	3.5	3.5
Paraffin Wax	—	2
Silicon Dioxides (Amorphous)	10 *	15 *

* : for total dust

Engineering ctrl.

Ventilation: Local exhaust recommended.

Personal protective equipment

Eye/face: Safety goggles
Skin: Protective gloves recommended
Respiratory: Nuisance dust respirator
General: Not necessary

Section 9 - Physical and chemical properties

Appearance:	Black, fine granule	Odor:	Odorless
Physical state:	Solid	pH:	Not applicable
Vapor pressure:	Not applicable	Vapor density:	Not applicable
Boiling point:	Not applicable	Freezing point:	Not applicable
Melting point:	110°C	Solubility(H ₂ O):	Negligible
Specific gravity:	1.15g/cm ³	Particle size:	8 - 9 μ
Softening point:	72°C	Evaporation rate:	Not applicable
Viscosity:	Not applicable	Bulk density:	0.39g/cm ³
Percent volatile:	<0.5 wt. %	Molecular weight:	20000-25000

Additional properties

Solubility in chloroform: Swell



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Section 10 - Chemical stability and reactivity information

Chemical stability: Stable
Conditions to avoid: Do not expose to temperature above 200°C.
Incompatibility: Avoid exposure to strong oxidizers.
Hazardous polymerization: Will not occur

Section 11 - Toxicological information

Acute toxicity/target organ information

A. General product information

Acute inhalation toxicity: LD50 \geq 2000mg/kg (rat)
Acute oral toxicity: LC50 \geq 4.85 mg/l (rat)
Acute eye irritation: Minimal irritant (rabbit)
Acute dermal irritation: Non-irritant (rabbit)

B. Component - LD50 /LC50

Paraffin Wax: LD50 5gr/kg

Carcinogenicity

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.

Teratogenicity/reproductive effects

Not available

Neurotoxicity

Not available

Mutagenicity

Negative in Ames test.

Chronic effects

Use of this product, as intended, does not result in inhalation of toner dust. But under potential human exposure level (1 mg/m³), no pulmonary change was observed.

Section 12 - Ecological information

Ecotoxicity: Not available
Environmental Fate: Not available



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Section 13 - Disposal considerations

US EPA waste number & descriptions

A. General product information

Not applicable

B. Component Waste Numbers

Not applicable

Disposal Instructions

Landfill or incinerate in accordance with local, state and federal regulations.

Section 14 - Transportation information

DOT information

Shipping name: Not applicable

Hazards class: Not applicable

UN number: Not applicable

Packing Group: Not applicable

Label(s) required

Not applicable

International transportation regulations

Not applicable

Section 15 - Regulatory information

US federal regulations

Four ingredients are all on the TSCA Inventory.

State regulations

Not applicable

Other regulations

Not available



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Section 16 - Other information

Change of the material safety data sheet

Reason for change: Minor modifications to be easy to read

Date of change: July 20, 1999 (First edition: June 10, 1999)

Others

This document is based on our knowledge at the time of preparation. While Brother Industries, Ltd. believes that the data contained herein are accurate, many of the data have been derived from outside sources and we cannot assume any liability as to the accuracy of the data. They are offered solely for your information.

This document covers only normal conditions of use and handling. When using product under unintended conditions, user is responsible to examine proper precautions for any particular use.

End of MSDS No.: ZLTU002