9-6-05

brother

MATERIAL SAFETY DATA SHEET



Product Name
TN-430 Toner / TN-460 Toner

Issue Date : July 20, 1999
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

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*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 results in occurrence of oxides of carbon.

Dust explosion may occur under the limited conditions.

Hazardous combustion products

Oxides of carbon

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 $\mu$ 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.

Exposure guidelines

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

Component exposure limits

| | OSHA PEL (mg/m³) | ACGIH TLV (mg/m³) |
|---|---|---|
| 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℃ | Solubility(H2O): | Negligible |
| Specific gravity: | 1.15g/cm³ | Particle size: | 8 - 9 μ |
| Softening point: | 72℃ | Evaporation rate: | Not applicable |
| Viscosity: | Not applicable | Bulk density: | 0.39g/cm³ |
| Percent volatile: | <0.5 wt.% | Molecular weight: | 20000-25000 |

Additional properties

Solubility in chloroform: Swell

## Section 10 - Chemical stability and reactivity information

| | |
|---|---|
| Chemical stability: | Stable |
| Conditions to avoid: | Do not expose to temperature above 200℃. |
| 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 ≧ 2000mg/kg (rat) |
| Acute oral toxicity: | LC50 ≧ 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／$m^3$), no pulmonary change was observed.

## 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

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

## 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