

SAFETY DATA SHEETS

This SDS packet was issued with item:

070307983

The safety data sheets (SDS) in this packet apply to the individual products listed below. Please refer to invoice for specific item number(s).

70307983

Product Name

Issue Date : Jan. 16, 2008

DR-360/DR-2100 Series Drum

MSDS No. : ALL2D08-001

Section 1 – Chemical product and company identification

Product name: Organic photoconductor drum for Models DR-360, DR-2100, DR-2125 and DR-2150

Manufacturer: Brother Industries, Ltd.
Printing & Solutions Company
1-1-1, Kawagishi, Mizuho-ku, Nagoya 467-8562, Japan
Telephone (for information): +81-52-824-2735

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

Importer in Europe: Brother International Europe Ltd.
Brother House, 1 Tame Street, Guide Bridge, Audenshaw, Manchester M34 5JE, UK
Telephone (for information): +44-161-330-6531

Importer in Australia: Brother International (Aust.) Pty. Ltd. ACN 001 393 835
7 Khartoum Road, North Ryde, N.S.W. 2113, Australia
Telephone (for information): 02-9887-4344

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 – Hazards identification

EC Classification: Not classified as hazardous according to EU Directive 1999/45/EC.

Most important hazards: None

Specific hazards: None

Other information on hazards: None

Section 3- Composition / information on ingredients

Substance or preparation: Mixture

Ingredients:

<u>Chemical name (common name)</u>	<u>CAS No.</u>	<u>Weight %</u>
Aluminum cylinder	7429-90-5	>98
Photosensitive layer	-	<2
Polycarbonate resin	Confidential	
Photosensitive material	Confidential	
Pigment	Confidential	

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DR-360/DR-2100 Series Drum

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Section 4 - First aid measures

No special precaution.

Section 5 - Fire fighting measures

No special precaution.

Section 6 - Accidental release measures

No special precaution.

Section 7 - Handling and storage

Handling: Avoid touching the photoconductor surface directly.

Storage: Store in a cool, dry and dark place.

Section 8 - Exposure controls / personal protection

Exposure guidelines: None

Engineering controls: None

Personal protection equipment(s)

Respiratory protection: None required under normal use.

Eye / face protection: None required under normal use.

Skin protection: None required under normal use.

Section 9 - Physical and chemical properties

Appearance

Physical state: Solid

Form: Cylinder

Color: Green or Black

Odor: Odorless

pH: Not applicable (insoluble in water)

Boiling point: Not applicable

Melting point: >150°C

Specific gravity: 1.1 - 1.2 (H₂O=1) (Coating layer)

Flash point: Not applicable

Ignition temperature: Not applicable

Solubility: Insoluble in water

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Section 10 - Chemical stability and reactivity information

Stability: Stable
Conditions to avoid: None
Materials to avoid: None
Hazardous decomposition products: None

Section 11 - Toxicological information

Acute toxicity: No data available
Skin irritation: No data available
Skin sensitisation: No data available
Mutagenicity: Ames test is negative.
Reproductive toxicity: No reproductive toxicant, according to MAK, California Proposition 65, TRGS905 and EU Directive (67/548/EEC).
Carcinogenicity: No carcinogen or potential carcinogen according to IARC, JAOH, ACGIH, EPA, OSHA, NTP, ILO, MAK, California Proposition 65, TRGS 905 and EU Directive (67/548/EEC).
Other information: None

Section 12 - Ecological information

No data available

Section 13 - Disposal considerations

Do not dispose of the waste drum as domestic, general waste.

Section 14 - Transportation information

UN No.: None
UN shipping name: None
UN classification: None
UN packing group: None
Special precautions: None

Product Name

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Section 15 - Regulatory information

Label information according to the Directives 88/379/EEC and 67/548/EEC(EU)

Symbol and indication: Not required

R-phrase: Not required

S-phrase: Not required

Dangerous component(s): None

Other: None

Section 16 - Other information

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.

<Abbreviation>

ACGIH:	American Conference of Governmental Industrial Hygienists
EPA:	Environmental Protection Agency (USA)
IARC:	International Agency for Research on Cancer
ILO:	International Labour Office
JAOH:	Japan Society for Occupational Health
MAK:	MAK (Maximale Arbeitsplatzkonzentrationen) unter Deutsche Forschungsgemeinschaft
NTP:	National Toxicology Program
OSHA:	Occupational Safety and Health Administration
TRGS:	Technische Regeln für Gefahrstoffe (Deutsche)
UN:	United Nations

Product name: TN-330, TN-360, TN-2110, TN-2120, TN-2130,
TN-2150, TN-2115, TN-2125, TN-2135, TN-2175 Toner

Issuing Date: 14-September-2007
Revision Date: 01-November-2015
Version: 5
SDS No: PT462-08-EUUSOTHER

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name TN-330, TN-360, TN-2110, TN-2120, TN-2130, TN-2150, TN-2115, TN-2125, TN-2135, TN-2175 Toner

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant Identified Use(s) These products are black toner in a cartridge for Brother Industries, Ltd. laser printers, multifunction devices and fax receivers. The cartridge should be used as supplied by Brother and for use in the products stated. Information provided on this SDS is only consistent with the use specified by Brother.

1.3 Details of the supplier of the safety data sheet

Manufacturer Brother Industries, Ltd.
15-1 Naeshiro-cho, Mizuho-ku, Nagoya 467-8561, Japan
Telephone (for information): +81-52-824-2735

Importer (USA) Brother International Corporation
200 Crossing Boulevard, Bridgewater, NJ 08807, USA
Telephone (for information): +1-877-276-8437

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

Importer (Europe) Brother International Europe Ltd.
Brother House, 1 Tame Street, Guide Bridge, Audenshaw, Manchester M34 5JE, UK
Telephone (for information): +44-161-330-6531

Importer (Australia) Brother International (Aust.) Pty. Ltd. ACN 001 393 835
Level 3, Building A, 11 Talavera Road, Macquarie Park, NSW 2113, Australia
Telephone (for information): +61-2-9887-4344

E-mail Address sds.info@brother.co.jp

1.4 Emergency telephone number

Emergency Telephone (24 hours) CHEMTREC
+1-703-527-3887 (International)
+1-800-424-9300 (North America)

For France only:
Antipoison Center telephone number: ORFILA +33-1-45-425-959

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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Not classified as hazardous

Classification according to Directive 1999/45/EC

Not classified as hazardous

Australia Classification

Not classified as hazardous according to the criteria of NOHSC

2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008

Hazard pictograms

None

Signal Word

None

Hazard Statements

None

Precautionary statements

None

2.3 Other hazards

This product contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). This product contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Description of the mixture: Styrene-acrylate Toner (Mixture).

Chemical Name	CAS-No	EC-No	w/w%	Classification (EU Reg. 1272/2008)
Styrene-acrylate copolymer	25767-47-9	-	80-90	Not classified
Carbon Black (bound)	1333-86-4	215-609-9	5-7	Not classified
Fatty Acid Ester	**	-	4-6	Not classified
PMMA	9011-14-7	-	0.5-1.5	Not classified
Silicon Dioxide (amorphous)	7631-86-9	231-545-4	<1	Not classified

For the full text of R-phrases and H-Statements see Section 16

** CONFIDENTIAL

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TN-2150, TN-2115, TN-2125, TN-2135, TN-2175 Toner

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SECTION 4: First aid measures

4.1 Description of first aid measures

General advice	If symptoms persist, obtain medical attention.
Inhalation	Obtain immediate medical attention. In case of accident by inhalation remove casualty to fresh air and keep at rest.
Skin contact	Remove contaminated clothing immediately and wash affected skin with plenty of water or soap and water.
Eye contact	Obtain medical attention. If substance has got into the eyes, immediately wash out with plenty of water for at least 15 minutes.
Ingestion	Obtain immediate medical attention. Wash out mouth with water and give 100-200 ml of water to drink.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation (dust): For large quantities: May cause irritation to the respiratory system. Increased difficulty in breathing. Sneezing. Coughing.

Eye contact: May cause eye irritation.

Ingestion: May cause stomach ache. Unlikely route of exposure.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable Extinguishing Media Extinguish preferably with dry chemical, carbon dioxide, water spray, foam.

Unsuitable Extinguishing Media Do not use water jet.

5.2 Special hazards arising from the substance or mixture

May form explosible dust clouds in air.

5.3 Advice for firefighters

Do not use high-pressure water in order to prevent creating a dust cloud and spreading fire dust. Use appropriate respirator for carbon monoxide and carbon dioxide. Wear positive pressure self-contained breathing apparatus (SCBA) during the attack phase of firefighting operations and during cleanup in enclosed or poorly ventilated areas immediately after a fire. Personnel not having suitable respiratory protection must leave the area to prevent significant exposure to toxic combustion gases from any source.

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SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures** Avoid generation of dust. Do not breathe dust. A suitable dust mask or dust respirator with filter type A/P may be appropriate.
- 6.2 Environmental precautions** Prevent substance entering sewers. Washings must be prevented from entering surface water drains.
- 6.3 Methods and materials for containment and cleaning up** Sweep the spilt toner or remove it with a vacuum cleaner and transfer into a sealed container carefully. Sweep slowly to minimize generation of dust during cleanup. If a vacuum cleaner is used, the motor must be rated as dust explosion proof. Potential for very fine particles to be taken into the vacuum only to be passed back into the environment due to pore size in the bag or filter.
- 6.4 Reference to other sections** For personal protection: See section 8.
For disposal considerations: See section 13.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling** Keep out of the reach of children. Avoid generation of dust. Avoid inhalation of high concentrations of dust. Avoid contact with eyes.
- 7.2 Conditions for safe storage, including any incompatibilities** Keep away from oxidizing agents.
- 7.3 Specific end use(s)** These products are black toner in a cartridge for Brother Industries, Ltd. laser printers, multifunction devices and fax receivers. This cartridge should be used as supplied by Brother and for use in the products stated.

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

Occupational Exposure Limits

Chemical Name	Carbon Black (bound) 1333-86-4
ACGIH TLV	TWA: 3 mg/m ³ inhalable fraction
OSHA PEL	TWA: 3.5 mg/m ³
European Union	-
The United Kingdom	STEL: 7 mg/m ³ TWA: 3.5 mg/m ³
France	TWA: 3.5 mg/m ³
Spain	TWA: 3.5 mg/m ³
Germany	Carc
Portugal	TWA: 3.5 mg/m ³
Finland	TWA: 3.5 mg/m ³ STEL: 7 mg/m ³
Denmark	TWA: 3.5 mg/m ³
Poland	TWA: 4.0 mg/m ³
Norway	TWA: 3.5 mg/m ³ STEL: 7 mg/m ³
Ireland	TWA: 3.5 mg/m ³ STEL: 7 mg/m ³
Chemical Name	Silicon Dioxide (amorphous) 7631-86-9
ACGIH TLV	-

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OSHA PEL	20mppcf 80(mg/m ³)/%SiO ₂
European Union	-
The United Kingdom	STEL: 18 mg/m ³ STEL: 7.2 mg/m ³ TWA: 6 mg/m ³ TWA: 2.4 mg/m ³
Germany	TWA: 4 mg/m ³
Austria	TWA: 4 mg/m ³ TWA: 0.3 mg/m ³
Switzerland	TWA: 4 mg/m ³ TWA: 0.3 mg/m ³
Norway	TWA: 1.5 mg/m ³ STEL: 3 mg/m ³
Ireland	TWA: 6 mg/m ³ TWA: 2.4 mg/m ³

Additional information

USA OSHA PEL (TWA): 15 mg/m³ (Total Dust) 5mg/m³ (Respirable Fraction).
ACGIH TLV (TWA): 10 mg/m³ (Inhalable particles) 3 mg/m³ (Respirable particles)

8.2 Exposure controls

Appropriate engineering controls

Good general ventilation should be sufficient under normal use.

Personal protective equipment

Not normally required. For use other than in normal operating procedures (such as in the event of large spill), the following should be applied:

Eye Protection	Safety goggles.
Hand Protection	Protective gloves.
Skin and body protection	Long sleeved clothing and long pants.
Respiratory protection	Dust mask. (Large spillages: Respirator).

Environmental Exposure Controls

Avoid release to the environment.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	
Physical state	Powder
Color	Black
Odor	Odorless
Odor Threshold	No information available
pH	Not applicable
Melting point/freezing point	110 °C (Melting point)
Initial boiling point and boiling range	Not applicable
Flash Point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not applicable
Upper/lower flammability or explosive limits	40 g/m ³ (lower)
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	1.15 (H ₂ O=1)
Solubility(ies)	Insoluble (water)
Partition coefficient: n-octanol/water	No information available
Auto-ignition temperature	No information available
Decomposition temperature	No information available
Viscosity	Not applicable
Explosive properties	Explosive limits of toner particles suspended in air approximately equal to that of coal dust.
Oxidizing properties	No information available

9.2 Other information

No information available.

SECTION 10: Stability and reactivity

10.1 Reactivity	No information available.
10.2 Chemical stability	Stable.
10.3 Possibility of hazardous reactions	No information available.
10.4 Conditions to avoid	Keep at a temperature not exceeding 200 °C. Avoid friction, sparks, or other means of ignition.
10.5 Incompatible materials	Strong oxidizing agents.
10.6 Hazardous decomposition products	Contains: Carbon monoxide, Carbon dioxide and Nitrogen oxides.

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

This assessment is based on information available on similar products.

Acute toxicity

Inhalation	Acute LC ₅₀ > 5 mg/l (Method OECD#403)
Eye contact	No information available.
Skin contact	No information available.
Ingestion	Acute LD ₅₀ > 2000 mg/kg (Method OECD#423)

Skin corrosion/irritation Non-irritant. (Method: OECD#404)

Serious eye damage/irritation Slight irritant to the eye (Method: OECD#405)

Respiratory or skin sensitisation It is not a skin sensitizer. (Method: OECD#429)

Mutagenicity Ames test: Negative. (Method: OECD#471)

Carcinogenicity Carbon Black: In 1996, the IARC re-evaluated carbon black as a Group 2B carcinogen (possible human carcinogen). This classification is given to chemicals, for which there is inadequate human evidence, but sufficient animal evidence on which to base an opinion of carcinogenicity. The classification is based upon the development of lung tumors in rats receiving chronic inhalation exposures to free carbon black at levels that induce particle overload of the lung. Studies performed in animal models other than rats did not show any 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.

Other ingredients of this product have not been classified as carcinogens according to IARC monographs, NTP and OSHA.

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SECTION 12: Ecological information

12.1 Toxicity

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Carbon Black (bound) 1333-86-4			EC ₅₀ : >5600 mg/L 24 h (Daphnia magna)
Silicon Dioxide (amorphous) 7631-86-9	EC ₅₀ : 440 mg/L 72 h (Pseudokirchneriella subcapitata)	LC ₅₀ : 5000 mg/L 96 h static (Brachydanio rerio)	EC ₅₀ : 7600 mg/L 48 h (Ceriodaphnia dubia)

12.2 Persistence and degradability No information available.

12.3 Bioaccumulative potential No information available.

12.4 Mobility in soil No information available.

12.5 Results of PBT and vPvB assessment This product contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).
This product contains no substance considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods Do not put toner or toner cartridges into a fire, this can cause fire to spread with the risk of causing burn injuries. Shred toner cartridges in a dust/explosion controlled environment. Finely dispersed particles may form explosive mixtures in the air. Dispose of in accordance with Federal, State, and local regulations.

SECTION 14: Transport information

Not classified according to the United Nations "Recommendations on the Transport of Dangerous Goods"

14.1 UN Number None

14.2 UN proper shipping name None

14.3 Transport hazard class(es) None

14.4 Packing Group None

14.5 Environmental hazards None

14.6 Special precautions for user None

14.7 Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code Not applicable

Not regulated under DOT, IMDG, ADR, RID, IATA.

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SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU: Not classified as dangerous for supply/use. (1999/45/EC)

USA: All chemical substances contained in this product are and had been listed on the TSCA Chemical Substances Inventory, and none is subject to any of the following TSCA requirements: section 4 test rules; proposed or final section 5(a)(2) significant new use rules; section 5(e) consent orders; section 8(a) preliminary assessment information rules; and section 8(d) health and safety data reporting rules.

Canada: WHMIS: Not applicable. (Manufactured article)

15.2 Chemical Safety Assessment

No.

SECTION 16: Other information

Full text of R-phrases referred to under sections 2 and 3 None

Full text of H-Statements referred to under sections 2 and 3 None

Additional information

The information relates only to this product. It may not be valid, if used in combination with any other materials or in any other process, and it is based on our best knowledge as of the date of preparation (revision).

Revision Note

SECTION 3

References:

U.S. 29CFR Part 1910
ACGIH Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices
IARC Monographs on the Evaluation Carcinogenic Risks to Humans World Health Organization
EU Directive 91/322/EEC and 2000/39/EC
NTP 11th Report on Carcinogens

Abbreviations:

ACGIH: American Conference of Governmental Industrial Hygienists
ADR: European Agreement concerning the International carriage of Dangerous goods by Road (EU)
DOT: Department Of Transportation (US)
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IMDG: International Maritime Dangerous Goods
NOHSC: National Occupational Health and Safety Commission (Australia)
NTP: National Toxicology Program (US)
OSHA: Occupational Safety and Health Administration (US)
PEL: Permissible Exposure Limit
RID: Regulations concerning the International carriage of goods by Rail (EU)
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value (ACGIH)
TSCA: Toxic Substances Control Act (US)
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Material Information System (Canada)