MATERIAL SAFETY DATA SHEET

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: Canon Cartridge 320 (for Multi Function Printer)
Product Code: 2617B / R00-6003
Manufacturer: Canon Inc., 30-2, Shimomaruko 3-Chome, Ohta-ku, Tokyo, Japan Ph # 03-3758-2111
Supplier: Canon U.S.A., Inc., One Canon Park, Melville, NY 11747, USA
Phone #: 1-800-OK-CANON 24 Hr. Emergency CHEMTREC # 1-800-424-9300

SECTION 2 HAZARDS IDENTIFICATION

EU Classification: Not classified as dangerous.
Emergency Overview: Black fine powder, slight plastic odor.

Potential Health Effects and Symptoms:

Inhalation:
- Exposure to excessive amounts of dust may cause physical irritation to respiratory tract.

Ingestion:
- Low acute toxicity. Ingestion is a minor route of entry for intended use of this product.

Eye:
- May cause transient slight irritation.

Skin:
- May be non-irritant.

Chronic Effects:
- Prolonged inhalation of excessive amounts of dust may cause lung damage. Use of this product as intended does not result in inhalation of excessive amounts of dust.

Medical Conditions Generally known to be Aggravated by Exposure:
- Not determined

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

< Ingredient(s) >

<table>
<thead>
<tr>
<th>Chemical Name / Generic Name</th>
<th>CAS # / EC #</th>
<th>Weight %</th>
<th>EU Symbol / R-Phrase</th>
<th>USA OSHA PEL</th>
<th>ACGIH TLV</th>
<th>EU ILV</th>
<th>DFG MAK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Styrene acrylate copolymer</td>
<td>Confidential</td>
<td>45-55</td>
<td>None/ None</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td>Ferrite including zinc</td>
<td>Confidential</td>
<td>40-50 (as Zn: 0-0.7)</td>
<td>None/ None</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td>Amorphous silica</td>
<td>7631-86-9/231-545-4</td>
<td>1-2</td>
<td>None/ None</td>
<td>20 mppcf, 80 (mg/m^3)/%SiO_2</td>
<td>Not established</td>
<td>Not established</td>
<td>4 mg/m^3 (Inhalable fraction)</td>
</tr>
</tbody>
</table>

< Carcinogen >
No component of this toner is listed as a human carcinogen or a potential carcinogen in IARC Monographs, NTP, OSHA regulations or Annex I to Directive 67/548/EEC.

< PBT substance and vPvB substance >
No component of this toner is a PBT or vPvB substance under Regulation (EC)1907/2006.
SECTION 4  FIRST AID MEASURES

First Aid Measures:

Inhalation:
If symptoms are experienced, move victim to fresh air and obtain medical advice.

Ingestion:
Rinse mouth. Drink 1 or 2 glasses of water. If irritation or discomfort occurs, obtain medical advice immediately.

Eye:
Do not allow victim to rub eye(s). Flush with lukewarm, gently flowing water for 5 minutes or until particle is removed. If irritation persists, obtain medical attention.

Skin:
Wash with soap and water. If irritation persists, obtain medical advice.

Note to Physicians:
None

SECTION 5  FIRE FIGHTING MEASURES

Fire Fighting Measures:

Extinguishing Media:
CO2, water, dry chemicals

Unsuitable Extinguishing Media:
None

Special Fire Fighting Procedures:
None

Unusual Fire and Explosion Hazards:
Can form explosive dust-air mixtures when finely dispersed in air.

Fire and Explosive Properties (See also SECTION 9):

Hazardous Combustion Products:
CO2, CO

Other Properties:
Not available

SECTION 6  ACCIDENTAL RELEASE MEASURES

Personal Precautions:
Avoid breathing dust.

Environmental Precautions:
Do not wash away into sewer.

Method for Cleaning Up:
Sweep slowly spilled powder on to paper, and carefully transfer into a waste container. Clean remainder with wet paper, wet cloth or a vacuum cleaner.
If a vacuum cleaner is used, it must rate as a dust explosion-proof type. Fine powder can form explosive dust-air mixtures.

SECTION 7  HANDLING AND STORAGE

Handling:
Avoid breathing dust.
Use with adequate ventilation.

Storage:
Keep out of the reach of children.
Keep away from oxidizing materials.

Specific Uses:
Toner for electrophotographic apparatus.
For more information, please refer to the instruction of this product.

Date of Issue:  December 5, 2008

Revised:
**SECTION 8  EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Exposure Guidelines:**

- **USA OSHA PEL (TWA):** 15 mg/m\(^3\) (Total dust), 5 mg/m\(^3\) (Respirable fraction)
- **ACGIH TLV (TWA):** 10 mg/m\(^3\) (Inhalable fraction), 3 mg/m\(^3\) (Respirable fraction)
- **DFG (MAK):** 4 mg/m\(^3\) (Inhalable fraction), 1.5 mg/m\(^3\) (Respirable fraction)

(Also refer to SECTION 3)

**Engineering Controls:**

Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne concentrations below the exposure limits.

**Personal Protection Equipment(s):**

- **Respiratory Protection:**
  - Required
  - Not Required
- **Eye/Face Protection:**
  - Required
  - Not Required
- **Skin Protection:**
  - Required
  - Not Required

**SECTION 9  PHYSICAL AND CHEMICAL PROPERTIES**

- **Appearance:** Black fine powder
- **Odor:** Slight plastic odor
- **pH:** Not applicable
- **Boiling Point/Range(°C):** Not applicable
- **Melting Point/Range(°C):** 100-150 (Softening point)
- **Decomposition Temperature(°C):** > 200
- **Flash Point(°C):** Not applicable
- **Flammable (Explosive) Limits:** Not applicable
- **Autoignition Temperature(°C):** Not available
- **Flammability:** Not-flammable (Test method: Directive 92/69/EEC, A10 Flammability (Solids))
- **Explosive Properties:** Can form explosive dust-air mixtures when finely dispersed in air.
- **Oxidizing Properties:** Not available
- **Vapor Pressure:** Not applicable
- **Vapor Density:** Not applicable
- **Density / Specific Gravity:** 1.4-1.8
- **Water Solubility:** Negligible
- **Fat Solubility:** Partially soluble in toluene and xylene.
- **Partition Coefficient (n-Octanol/Water):** Not applicable
- **Percent Volatile:** Negligible
- **Evaporation Rate:** Not applicable
- **Viscosity (mPa s):** Not applicable
SECTION 10 STABILITY AND REACTIVITY

Stability: ☒ Stable  ☐ Unstable

Conditions to Avoid: None

Materials to Avoid: Strong oxidizers

Hazardous Decomposition Products: CO, CO2

Hazardous Polymerization: ☐ May Occur  ☒ Will Not Occur

Conditions to Avoid: None

SECTION 11 TOXICOLOGICAL INFORMATION

Acute Toxicity:

Inhalation: Not available

Ingestion:
Estimate: Rat, LD50 > 2000 mg/kg (See SECTION 16)

Eye:
Estimate: Rabbit, transient slight conjunctival irritation only. (See SECTION 16)

Skin:
Estimate: Rabbit, non-irritant (See SECTION 16)

Sensitization:
Estimate: Skin: Non-sensitizing (See SECTION 16)

Mutagenicity:
Ames Test (S. typhimurium, E. coli): Negative

Reproductive Toxicity:
Not available

Carcinogenicity:
Not available

Others:

Chronic effects:
Muhle et al. reported pulmonary response upon chronic inhalation exposure in rats to a toner enriched in respirable-sized particles compared to commercial toner. No pulmonary change was found at 1 mg/m³ which is most relevant to potential human exposure. A minimal to mild degree of fibrosis was noted in 22% of the animals at 4 mg/m³, and a mild to moderate degree of fibrosis was observed in 92% of the animals at 16 mg/m³. These findings are attributed to "lung overloading", a generic response to excessive amounts of any dust retained in the lung for a prolonged interval.
SECTION 12  ECOLOGICAL INFORMATION

Mobility: Not available
Persistence / Degradability: Not available
Bioaccumulation: Not available
Ecotoxicity: Estimate: Fish, 96h LL50 > 1000 mg/l (WAF)
Estimate: Crustaceans, 48h EL50 > 1000 mg/l (WAF)
Estimate: Algae, EbL50(72h), ErL50(0-72h) > 1000 mg/l (WAF)
(See SECTION 16)

Other Adverse Effects: Not available

SECTION 13  DISPOSAL CONSIDERATIONS

Method of Disposal: DO NOT put toner or toner container into fire; heated toner may cause severe burns. DO NOT shred a toner container, unless dust-explosion preventing measures are taken. Finely dispersed particles form explosive mixtures in air. Disposal should be subject to federal, state and local laws.

SECTION 14  TRANSPORT INFORMATION

UN #: By ship: None  By air: Not identified
UN Shipping Name: By ship: None  By air: Not identified
UN Classification: By ship: None  By air: Not identified
UN Packing Group: By ship: None  By air: Not identified
Marine Pollutant: ☑ Yes  Chemical name (wt%):
☒ No

SECTION 15  REGULATORY INFORMATION

< EU Information >

Information on the Label: Not required
R-Phrase: Not required
S-Phrase: Not required
Dangerous Component(s): Not required

Special Precautions under 1999/45/EC Annex V: Not required

Specific Provisions in Relation to Protection of Man or the Environment:
76/769/EEC: Not regulated
(EC)2037/2000: Not regulated
(EC)689/2008: Not regulated
Others: None

Date of Issue: December 5, 2008  Revised:
MATERIAL SAFETY DATA SHEET

Signal Word: Not required
Hazard warning: Not required
Safety Advice: Not required

SARA Title III §313:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Zinc compounds&quot;</td>
<td>40-50</td>
</tr>
<tr>
<td>(as Zn)</td>
<td>0-0.3</td>
</tr>
</tbody>
</table>

California Proposition 65:

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>

< USA Information >

WHMIS Controlled Product: Not applicable (Manufactured article)

< Canada Information >

Statement of Hazardous Nature: Not classified as hazardous according to criteria of NOHSC.

< Australia Information >

SECTION 16 OTHER INFORMATION

Estimate: Estimate based on test data on similar toner/developer/drum and/or the raw materials of this product.

Literature References:
- U.S. Department of Labor, 29CFR Part 1910
- U.S. Environmental Protection Agency, 40CFR Part 372
- U.S. Consumer Product Safety Commission, 16CFR Part 1500
- ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices
- U.S. Department of Health and Human Services National Toxicology Program, Annual Report on Carcinogens
- DFG, List of MAK and BAT Values
- Canada Workplace Hazardous Materials Information System
Abbreviations:

EU: European Union.
OSHA PEL: PEL(Permissible Exposure Limit) under Occupational Safety and Health Administration (USA).
ACGIH TLV: TLV(Threshold Limit Value) under American Conference of Governmental Industrial Hygienists.
DFG MAK: MAK(Maximale Arbeitsplatz-Konzentration) under Deutsche Forschungsgemeinschaft.
TWA: Time Weighted Average.
STEL: Short Term Exposure Limit.
IARC: International Agency for Research on Cancer.
NTP: National Toxicology Program (USA).
WAF: Water Accommodated Fraction
LL: Lethal Loading rate
EL: Effective Loading rate
OSHA HCS: Occupational Safety and Health Act, Hazard Communication Standard (USA).
FHSA: Federal Hazardous Substances Act (USA).
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

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