

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

**Product Name:** Canon Cartridge 311 Yellow

**Product Code:** 1657B / R84-9041

**Manufacturer:** Canon Inc.  
30-2, Shimomaruko 3-Chome, Ohta-ku, Tokyo 146-8501, Japan

**Supplier:** Canon Singapore Pte Ltd  
1 HarbourFront Avenue, #04-01, Keppel Bay Tower, Singapore 098632  
cspl\_msds@canon.com.sg

**Use of the Product:** Toner for electrophotographic apparatus

**SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS**

**< Ingredient(s) >**

Chemical Name / Generic Name	CAS # / EC #	Weight %	EU Symbol/ R-Phrase	USA OSHA PEL	ACGIH TLV	EU ILV	DFG MAK
Styrene acrylate copolymer	Confidential	75-85	None/ None	Not established	Not established	Not established	Not established
Wax	Confidential	5-15	None/ None	Not established	Not established	Not established	Not established
Pigment	Confidential	1-5	None/ None	Not established	Not established	Not established	Not established
Amorphous silica	7631-86-9/ 231-545-4	1-2	None/ None	20 mppcf, 80(mg/m <sup>3</sup> )/%SiO <sub>2</sub>	Not established	Not established	4 mg/m <sup>3</sup> (Inhalable fraction)

**< Carcinogen >**

Chemical Name	CAS #	Reference
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.		

**SECTION 3 HAZARDS IDENTIFICATION**

**EU Classification:**

Not classified as dangerous.

**Emergency Overview:**

Yellow 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 based on animal testing. 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

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**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

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**SECTION 5 FIRE FIGHTING MEASURES****Fire Fighting Measures:****Extinguishing Media:**

CO<sub>2</sub>, 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:**

CO<sub>2</sub>, CO

**Other Properties:**

Not available

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**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.

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**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.

### SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines:**

USA OSHA PEL (TWA): 15 mg/m<sup>3</sup> (Total dust), 5 mg/m<sup>3</sup> (Respirable fraction)  
 ACGIH TLV (TWA): 10 mg/m<sup>3</sup> (Inhalable fraction), 3 mg/m<sup>3</sup> (Respirable fraction)  
 DFG (MAK): 4 mg/m<sup>3</sup> (Inhalable fraction), 1.5 mg/m<sup>3</sup> (Respirable fraction)  
 (Also refer to SECTION 2)

**Engineering Controls:**

Use adequate ventilation.

**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

<b>Appearance:</b>	Yellow fine powder
<b>Odor:</b>	Slight plastic odor
<b>pH:</b>	Not applicable
<b>Boiling Point/Range(°C):</b>	Not applicable
<b>Melting Point/Range(°C):</b>	100-150 (Softening point)
<b>Decomposition Temperature(°C):</b>	> 200
<b>Flash Point(°C):</b>	Not applicable
<b>Flammable (Explosive) Limits:</b>	Not applicable
<b>Autoignition Temperature(°C):</b>	Not available
<b>Flammability:</b>	Not-flammable (Test method: Directive 92/69/EEC, A10 Flammability (Solids))
<b>Explosive Properties:</b>	Can form explosive dust-air mixtures when finely dispersed in air.
<b>Oxidizing Properties:</b>	Not available
<b>Vapor Pressure:</b>	Not applicable
<b>Vapor Density:</b>	Not applicable
<b>Density / Specific Gravity:</b>	1.0-1.2
<b>Water Solubility:</b>	Negligible
<b>Fat Solubility:</b>	Partially soluble in toluene and xylene.
<b>Partition Coefficient (n-Octanol/Water):</b>	Not applicable
<b>Percent Volatile:</b>	Negligible
<b>Evaporation Rate:</b>	Not applicable
<b>Viscosity (mPa s):</b>	Not applicable

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**SECTION 10 STABILITY AND REACTIVITY**

**Stability:**  Stable  
 Unstable

**Conditions to Avoid:** None

**Materials to Avoid:** Strong oxidizers

**Hazardous Decomposition Products:** CO, CO<sub>2</sub>

**Hazardous Polymerization:**  May Occur  
 Will Not Occur

**Conditions to Avoid:** None

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**SECTION 11 TOXICOLOGICAL INFORMATION****Acute Toxicity:****Inhalation:**

Not available

**Ingestion:**

Rat, LD50 > 2000 mg/kg

**Eye:**

Rabbit, transient slight conjunctival irritation only.

**Skin:**

Rabbit, non-irritant

**Sensitization:**

Not available

**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/m<sup>3</sup> 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/m<sup>3</sup>, and a mild to moderate degree of fibrosis was observed in 92% of the animals at 16 mg/m<sup>3</sup>. These findings are attributed to "lung overloading", a generic response to excessive amounts of any dust retained in the lung for a prolonged interval.

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**SECTION 12 ECOLOGICAL INFORMATION**

**Mobility:** Not available

**Persistence / Degradability:** Not available

**Bioaccumulation:** Not available

**Ecotoxicity:** Fish (Rainbow trout), 96h LL50 > 1000 mg/l (WAF)  
Crustaceans (Daphnia magna), 48h EL50 > 1000 mg/l (WAF)  
Algae (Scenedesmus subspicatus), EbL50(72h), ErL50(0-72h) > 1000 mg/l (WAF)

**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 #:** None

**UN Shipping Name:** None

**UN Classification:** None

**UN Packing Group:** None

**Marine Pollutant:**  Yes  No Chemical name (wt%):

**Special Precautions:** None

**SECTION 15 REGULATORY INFORMATION**

## &lt; EU Information &gt;

**Information on the Label:**

**Symbol & Indication:** 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)304/2003:** Not regulated

**Others:** None

< USA Information >

**Information on the Label under OSHA:**

**Signal Word:** Not required

**Hazard warning:**

Not required

**Safety Advice:**

Not required

**Hazardous Component(s):**

Not required

**SARA Title III §313:**

**Chemical Name**

**Weight %**

None

**California Proposition 65:**

**Chemical Name**

**Weight %**

None

< Canada Information >

**WHMIS Controlled Product:** Not applicable (Manufactured article)

< Australia Information >

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

**SECTION 16 OTHER INFORMATION**

None

Literature Reference:

- 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
- World Health Organization International Agency for Research on Cancer, IARC Monographs on the Evaluation on the Carcinogenic Risk of Chemicals to Humans
- DFG, List of MAK and BAT Values
- EU Directive 76/769/EEC, 67/548/EEC, 1999/45/EC
- EU Regulation (EC)2037/2000, (EC)304/2003
- Canada Workplace Hazardous Materials Information System
- Australia National Occupational Health and Safety Commission's Approved Criteria for Classifying Hazardous Substances[NOHSC:1008]

## 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.  
EU ILV: Indicative Limit Values for Occupational Exposure under EU Directive 91/322/EEC, 2000/39/EC and 2006/15/EC.  
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).  
WHMIS: Workplace Hazardous Materials Information System.  
NOHSC: National Occupational Health and Safety Commission.

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