SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identification
- **Product Name:** Developer
- **Product Number:** 4211
- **Chemical Name:** Mixture
- **CAS Number:** 0-00-0

Company Identification
- **Company Name:** Ricoh Corporation
- **Address:** 5 Dedrick Place
  West Caldwell, NJ USA 07006
- **Emergency telephone Number:** 1-800-336-MSDS (6737)
- **Telephone Number for Information:** 1-973-882-5218

Model use: 5020, 7020, 7334, 7430, 5015, 5015RE, 7015Z, 7025, 7035, 7500, 7045, 7055, 7065, 7640, 9710, 7220,

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS #</th>
<th>Contents %</th>
<th>ACGIH (TLV)</th>
<th>OSHA (PEL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nickel Zinc Ferrite Powder</td>
<td>12645-50-0</td>
<td>97</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Styrene Acrylic Polymer</td>
<td>26655-10-7</td>
<td>2</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Styrene Acrylic Polymer</td>
<td>25213-39-2</td>
<td>&lt;1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Carbon Black</td>
<td>1333-86-4</td>
<td>&lt;1</td>
<td>3.5mg/m3</td>
<td>N/A</td>
</tr>
<tr>
<td>Dye</td>
<td>84179-66-8</td>
<td>&lt;1</td>
<td>7mg/m3</td>
<td>3.5mg/m3</td>
</tr>
<tr>
<td>Dye</td>
<td>109125-50-0</td>
<td>&lt;1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Dye</td>
<td>109125-51-1</td>
<td>&lt;1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

SECTION 3 HAZARDS IDENTIFICATION

**Emergency Overview**

- **HMIS Health:** 1
- **Flammability:** 1
- **Reactivity:** 0
- **PPE:** See Section 8

**Potential Health Effects**

- **Primary Entry Routes**: Inhalation: Yes
  Skin: No
  Ingestion: Yes

**Carcinogenicity**

Carbon Black was reclassified as a Group 2B by IARC in 1996 based on the result of only the inhalation study in rats. However, there was not observed the incidence of tumors on the test results on dermal or oral studies. Also, 2-years inhalation study using a typical toner containing carbon black showed no association between toner exposure and animal tumors.
Medical Conditions Aggravated by Exposure: Not applicable

Chronic Effects:
Prolonged inhalation of excessive dust may cause lung damage. It is attributed to "lung overloading", a generic response to excessive amounts of any dust retained in the lung for a prolonged interval. Use of this product, as intended, does not result in inhalation of excessive dust.

SECTION 4 FIRST AID MEASURES

Inhalation: Gargle with water, move to place in fresh air. If unsuccessful, get medical attention.
Skin contact: Wash thoroughly with soap and water.
Eye Contact: Try to remove with eye drops or flush with water. If unsuccessful, get medical attention.
Ingestion: Dilute stomach contents with several glasses of water. If unsuccessful, get medical attention.

SECTION 5 FIRE-FIGHTING MEASURES

Flash Point: Not applicable
Burning Rate (mm/sec): Not available
Autoignition Temperature (°C): Not available
Flammable Limits (%): LEL Not applicable
UEL Not applicable

Extinguishing Media: Foam, water spray (mist), dry chemical or carbon dioxide may be suitable.
Fire-Fighting Instructions: No special fire protecting method is required.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal Precautions: Minimize inhalation of dust.
Environment Precautions: Keep product out of sewers and watercourses.
Method for Cleaning up: If spilled, sweep up or pick up by vacuum cleaner (rated for developer extraction). Remove residue with soap and water.

SECTION 7 HANDLING AND STORAGE

Handling (technical measures, precautions, safe handling material)
Do not handle in areas where wind blows.
Flying powder may enter eyes.
Minimize breathing dust.

Storage (technical measures, storage condition, packaging material)
Avoid direct sunlight.
Do not keep this over 35°C (95°F)
Keep out of reach children.
SECTION 8  EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation: Local exhaust equipment is needed.
Respiratory Protections (Specify type): None required under normal conditions of use.
Eye Protection: None required under normal conditions of use.
Protective Gloves: None required under normal conditions of use.
Protective Clothing or Equipment: None required under normal conditions of use.

SECTION 9  PHYSICAL AND CHEMICAL PROPERTIES

Form: Powder
Color: Black
Odor: Slightly plastic odor
pH: Not applicable
Boiling Point (C): Not applicable
Vapor Pressure(Pa): Not applicable
Vapor density(Air=1): Not applicable
Density (g/cm3): 5.39 approximately
Formula Weight: Not applicable
Melting Point (C): Not applicable
Viscosity (Pa): Not applicable
Volatile (%): -
Evaporation Rate(n-BuAc=1): Not applicable
Water Solubility (g/L): Insoluble
Other Solvent name: -
Other Solvent Solubility(g/L): -

SECTION 10  STABILITY AND REACTIVITY

Stability: Stable
Condition to Avoid: Not applicable in normal use.
Material to Avoid: Not applicable in normal use.
Hazardous Polymerization: None
Hazardous Decomposition or Byproducts: Will not occur

SECTION 11  TOXICOLOGICAL INFORMATION

Acute Toxicity
Acute Oral Toxicity: Rat : >= 5000 mg/kg
Acute Dermal Toxicity: Not available
Acute Inhalation Toxicity: Not available

Sensitization
Acute Skin Irritation: Non-irritant
Acute Eye Irritation: Not applied
Acute Allergenic Effects: 0%

Special Effects
Carcinogenicity
In 1996 IARC reevaluated Carbon Black as a Group 2B carcinogen (possible human carcinogen). This evaluation is given to carbon black for which there is inadequate human evidence, but sufficient animal evidence. The latter 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 have not demonstrated an association between carbon black and lung tumors. Moreover, 2-years cancer bioassay using a typical toner preparation containing carbon black did not demonstrate an association between toner exposure and tumor development in rats.
This product contains Nickel as the ingredient of Nickel Zinc Ferrite and Nickel oxide is known as a human carcinogen. However Nickel Zinc ferrite does not contain Nickel oxide because Nickel is bound within it due to its solid solution structure.

Mutagenicity
Effects on the reproductive system
Teratogenic
Negative
No data is available on this product.
Not available

SECTION 12 ECOLOGICAL INFORMATION

Persistence/Degradability
Not known
Bioaccumulation
Not known in bioaccumulation.
Ecotoxicity
Acute toxicity for Fish
Not applicable
Acute toxicity for daphnia
Not applicable
Algae inhibition test
Not applicable

SECTION 13 DISPOSAL CONSIDERATION

Recommended Methods for safe Environmentally Preferred Disposal
Used developer should be disposed of in an environmentally appropriate manner and in accordance with governmental regulations. Do not incinerate.

SECTION 14 TRANSPORT INFORMATION

International regulations
RID/ADR
Not available
Specific Precautionary Transport Measures: Avoid direct sunlight. Do not keep this over 35°C (95°F)
Specific Materials to Avoid: None in normal use.

SECTION 15  REGULATION INFORMATION

Regulation: Not known

SECTION 16  OTHER INFORMATION

Explanation of Hazardous Materials Identification System (HMIS) & National Fire Protection Association (NFPA) hazard rating systems:
Both the HMIS and NFPA systems use numbers from “0” to “4” to show the degree of hazard in an uncontrolled situation:
0 = Minimum hazard  1 = Slight hazard  2 = Moderate hazard  3 = Serious hazard  4 = Severe hazard.
Colors may also be used in both systems:
Blue = Health hazard  Red = Fire hazard  Yellow = Reactivity hazard  White = Indicate a special hazard.
HMIS will specify any Personal Protective Equipment required (PPE).
NFPA will specify OX(oxidizer), Acid(acid), ALK(alkali), COR(corrosive), W(use no water), xx(radioactive).

References: