Material Safety Data Sheet

1. Identification of the substance/preparation and of the company/undertaking

**Product name:** KODAK FLEXICOLOR Developer Starter, Process C-41

**Product code:** 1953009

**Supplier:** EASTMAN KODAK COMPANY, 343 State Street, Rochester, New York, 14650

For Emergency Health, Safety & Environmental Information, call (585) 722-5151 (USA)

For other information or to request an MSDS, call (800) 242-2424.

**Synonyms:** PCD 5108

**Product Use:** photographic processing chemical, For industrial use only.

2. Hazards identification

**CONTAINS:** Sodium sulphite (7757-83-7), Sodium bromide (7647-15-6)

**WARNING!**
MAY LIBERATE SULFUR DIOXIDE
MAY BE HARMFUL IF SWALLOWED.

**HMIS III Hazard Ratings:** Health - 1, Flammability - 0, Reactivity (Stability) - 0

**NFPA Hazard Ratings:** Health - 1, Flammability - 0, Instability - 0

NOTE: HMIS III and NFPA 704 (2007) hazard indexes involve data review and interpretation that may vary among companies. They are intended only for rapid, general identification of the magnitude of the potential hazards. To adequately address safe handling, ALL information in this MSDS must be considered.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Weight %</th>
<th>Components - (CAS-No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 - 15</td>
<td>Potassium carbonate (584-08-7)</td>
</tr>
<tr>
<td>1 - 5</td>
<td>Pentetic acid, pentasodium salt (140-01-2)</td>
</tr>
<tr>
<td>1 - 5</td>
<td>Sodium sulphite (7757-83-7)</td>
</tr>
<tr>
<td>1 - 5</td>
<td>Sodium bromide (7647-15-6)</td>
</tr>
</tbody>
</table>

4. First aid measures

**Inhalation:** If inhaled, remove to fresh air. Get medical attention if symptoms occur.

**Eyes:** Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms occur.

**Skin:** Wash off with soap and water. Get medical attention if symptoms occur.
Ingestion: If swallowed, only induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control centre immediately.

5. Fire-fighting measures

Extinguishing Media: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing. Fire or excessive heat may produce hazardous decomposition products.

Hazardous Combustion Products: None (noncombustible), (see also Hazardous Decomposition Products section).

Unusual Fire and Explosion Hazards: None.

6. Accidental release measures

Absorb spill with inert material, then place in a chemical waste container. Clean surface thoroughly to remove residual contamination.

7. Handling and storage

Personal precautions: Avoid breathing mist or vapour at concentrations greater than the exposure limits. Avoid contact with eyes, skin, and clothing. Use only with adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: No special technical protective measures required.

Storage: Keep container tightly closed. Keep away from incompatible substances (see Incompatibility section.)

8. Exposure controls / personal protection

Occupational exposure controls

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Regulatory List</th>
<th>Value Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulphur dioxide</td>
<td>ACGIH</td>
<td>time weighted average</td>
<td>2 ppm</td>
</tr>
<tr>
<td></td>
<td>ACGIH</td>
<td>Short term exposure limit</td>
<td>5 ppm</td>
</tr>
<tr>
<td></td>
<td>OSHA Z1</td>
<td>Permissible exposure limit</td>
<td>5 ppm 13 mg/m3</td>
</tr>
</tbody>
</table>

Ventilation: Good general ventilation should be used. Ventilation should be sufficient so that applicable occupational exposure limits are not exceeded. Ventilation rates should be matched to conditions. Supplementary local exhaust ventilation, closed systems, or respiratory protection may be needed in special circumstances.

Respiratory protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits, an approved respirator must be worn. A respirator should be worn if hazardous decomposition products are likely to be or have been released. Respirator type: Acid gas. See
Stability and Reactivity Section. If respirators are used, a program should be instituted to assure compliance with applicable federal, state, commonwealth, provincial, or local laws and regulations.

**Eye protection:** Wear safety glasses with side shields (or goggles).

**Hand protection:** For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.

### 9. Physical and chemical properties

**Physical form:** liquid

**Colour:** colourless

**Odour:** slight amine

**Specific gravity:** 1.29

**Vapour pressure:** 23.4 mbar (17.6 mm Hg)

**Vapour density:** 0.6

**Volatile fraction by weight:** 65 - 70 %

**Boiling point/boilingrange:** > 100 °C (212.0 °F)

**Water solubility:** completely soluble

**pH:** 9.6

**Flash point:** does not flash

### 10. Stability and reactivity

**Stability:** Stable under normal conditions.

**Incompatibility:** Acids. Contact with strong acids liberates sulphur dioxide.

**Hazardous decomposition products:** Sulphur oxides.

**Hazardous Polymerization:** Hazardous polymerisation does not occur.

### 11. Toxicological information

**Effects of Exposure**

**Inhalation:** Expected to be a low hazard for recommended handling. In contact with strong acids or if heated, sulphites may liberate sulphur dioxide gas. Sulphur dioxide gas is irritating to the respiratory tract. Some asthmatics or hypersensitive individuals may experience difficult breathing.
Eyes: No specific hazard known. May cause transient irritation.

Skin: This material has a low potential to cause allergic skin reactions; however, cases of human skin sensitization have been reported.

Ingestion: May be harmful if swallowed. Some asthmatics or sulfite-sensitive individuals may experience wheezing, chest tightness, stomach upset, hives, faintness, weakness and diarrhea.

Data for Potassium carbonate (CAS 584-08-7):

Acute Toxicity Data:
- Oral LD50 (rat): 1,870 mg/kg

Data for Pentetic acid, pentasodium salt (CAS 140-01-2):

Acute Toxicity Data:
- Oral LD50 (male rat): 3,200 mg/kg
- Oral LD50 (female rat): 2,263 mg/kg
- Skin Sensitization: none

Definitions for the following section(s): LOEL = lowest-observed-effect level, LOAEL = lowest-observed-adverse-effect, NOAEL = no observed-adverse-effect level, NOEL = no-observed-effect level.

Repeated dose toxicity:
- Oral (11 days, male rat): NOEL; 100 mg/kg/day

Data for Sodium sulphite (CAS 7757-83-7):

Acute Toxicity Data:
- Oral LD50 (rat): > 1,600 mg/kg
- Skin irritation: none
- Eye irritation: slight; washing palliative

12. Ecological information

The following properties are ESTIMATED from the components of the preparations.

Potential Toxicity:
- Toxicity to fish (LC50): > 100 mg/l
- Toxicity to daphnia (EC50): > 100 mg/l
- Toxicity to algae (IC50): 10 - 100 mg/l
- Toxicity to other organisms (EC50): > 100 mg/l

Persistence and degradability: Not readily biodegradable.
Chemical Oxygen Demand (COD): ca. 36 g/l
Biochemical Oxygen Demand (BOD): ca. 3 g/l

13. Disposal considerations

Discharge, treatment, or disposal may be subject to federal, state, commonwealth, provincial, or local laws. Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

Not regulated for all modes of transportation.

For more transportation information, go to: www.kodak.com/go/ship.

15. Regulatory information

Notification status

<table>
<thead>
<tr>
<th>Regulatory List</th>
<th>Notification status</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS</td>
<td>y (positive listing)</td>
</tr>
<tr>
<td>TSCA</td>
<td>y (positive listing)</td>
</tr>
<tr>
<td>AICS</td>
<td>y (positive listing)</td>
</tr>
<tr>
<td>DSL</td>
<td>y (positive listing)</td>
</tr>
<tr>
<td>ENCS (JP)</td>
<td>y (positive listing)</td>
</tr>
<tr>
<td>KECI (KR)</td>
<td>y (positive listing)</td>
</tr>
<tr>
<td>PICCS (PH)</td>
<td>y (positive listing)</td>
</tr>
<tr>
<td>INV (CN)</td>
<td>y (positive listing)</td>
</tr>
</tbody>
</table>

A N (Negative listing) indicates one or more component is either not on the public Inventory or is subject to exemption requirements. If additional information is needed contact Kodak.

Other regulations

American Conference of Governmental Industrial Hygienists (ACGIH): No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

International Agency for Research on Cancer (IARC): No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

U.S. National Toxicology Program (NTP): No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
16. Other information

The data below reflects current legislative requirements whereas the product in your possession may carry a different version of the label depending on the date of manufacture.

US/Canadian Label Statements:

**CONTAINS:** Sodium sulphite (7757-83-7), Sodium bromide (7647-15-6)

**WARNING!**
MAY LIBERATE SULFUR DIOXIDE
MAY BE HARMFUL IF SWALLOWED.

Avoid prolonged or repeated breathing of mist or vapour.
Avoid contact with eyes, skin, and clothing.
Use only with adequate ventilation.
Wash thoroughly after handling.

**FIRST AID:** If inhaled, remove to fresh air. Get medical attention if symptoms occur. Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms occur. Wash off with soap and water. Get medical attention if symptoms occur. If swallowed, only induce vomiting as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician or poison control centre immediately.
Keep out of reach of children.

Do not handle or use until safety precautions in Material Safety Data Sheet (MSDS) have been read and understood.

Since emptied containers retain product residue, follow label warnings even after container is emptied.

**IN CASE OF FIRE:** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**IN CASE OF SPILL:** Absorb spill with inert material, then place in a chemical waste container. Clean surface thoroughly to remove residual contamination.

The information contained herein is furnished without warranty of any kind. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment. The information relating to the working solution is for guidance purposes only, and is based on correct mixing and use of the product according to instructions.

R-1, S-1, F-0, C-0