

# MATERIAL SAFETY DATA SHEET

FI Sales, LLC.

Product: **X-ray Film Developer Solution** Revision Date: **1/3/2008**

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## 1. CHEMICAL PRODUCT & COMPANY INFORMATION

Product Identifier: **X-ray Film Developer solution, Ready-To-Use strength**  
General Use: **Processing (developing) of exposed X-ray Film for viewing and storage**

Manufactured in the U.S.A. for:

FI Sales, LLC., 761 N. 17th Street, Unit 17, St. Charles, Illinois 60174 (U.S.A.)

Business Hours Phone: (630) 444 - 1380

FAX: (630) 444 - 1381

**Chemical Emergency only, 24 Hour / 7 Day Response Phone: (800) 535-5053 & (352) 323 - 3500 INFOTRAC**

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	CAS No.	% by Wt.	Exposure Limits (ppm)		ACGIH	
			OSHA TWA	PEL	TLV	STEL
Hydroquinone	123-31-9	1.0 - 2.5	2 mg/ m <sup>3</sup>	N/Av	2 mg/ m <sup>3</sup>	N/Av
Sodium Metabisulfite (Sulfur Dioxide, potential off-gas)	76818-57-4 7446-09-5	3.0 - 5.5	5 mg/ m <sup>3</sup> 5	N/Av N/Av	5 mg/ m <sup>3</sup> 2	5 mg/ m <sup>3</sup> 5
Potassium Hydroxide	7732-18-5	2.5 - 3.5	N/Av	2 mg/ m <sup>3</sup> (c)	2 mg/ m <sup>3</sup> (c)	N/Av
2-Butoxyethanol	111-76-2	1.0 - 2.0	50 (s)	N/Est	20 (s)	N/Est
N/Est = Not Established		N/Av = Not Available		(s) = skin contact limit	(c) = ceiling limit	

## 3. HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:** Not Regulated as liquid product. Harmful or fatal if swallowed.

### POTENTIAL HEALTH EFFECTS:

**INHALATION:** Fumes and vapors are typically not irritating to upper respiratory tract. Inhalation of liquid, mist, or dried product will cause same effects by absorption as SKIN CONTACT or INGESTION to the respiratory system tissues.**EYE CONTACT:** Will cause tearing and irritation, possible chemical burns or corneal damage.**SKIN CONTACT:** Avoid contact with liquid, mists, or spray to skin. Avoid contact with dried product. Typically no ill effects for most people with occasional unprotected contact. Possible skin depigmentation. Can be absorbed through skin and produce similar effects as INGESTION.**INGESTION:** Harmful or fatal if swallowed in dry or liquid form. Will cause severe distress (nausea and spontaneous vomiting) of the gastro-intestinal tract. Excess methemoglobin formed. Potential aspiration hazard with pulmonary edema & hemorrhage.**CHRONIC:** Long-term contact exposure to large doses may cause kidney and Central Nervous System damage. Existing medical conditions (eye disorders, skin disorders, or lung disorders) may also be aggravated by long-term exposure. This product does NOT contain any ingredient designated by IARC, NTP, ACGIH, or OSHA as probable or suspected human carcinogen.

## 4. FIRST AID MEASURES

**INHALATION (of fumes):** Remove patient to fresh air if dizzy or other symptoms. If breathing has stopped, give cardio-pulmonary respiration (CPR) and call for medical assistance.**EYE CONTACT:** Flush with water for at least 15 minutes. Get medical attention immediately.**SKIN CONTACT:** Wash with soap and water after removing contaminated clothing. Provide extra attention to hair and other not easy to clean areas. Get medical attention if irritation occurs or immediately if the skin contact area was large or prolonged.**INGESTION:** Prevent aspiration of vomit into lungs. Induce vomiting of conscious patient, and dilute stomach contents with water. Get medical attention immediately.

## 5. FIRE FIGHTING INFORMATION AND MEASURES

**FLASH POINT:** over 150°F**METHOD:** TCC**AUTOIGNITION TEMPERATURE:** over 472°F**FLAMMABLE LIMITS:** N/Av**HAZARDOUS COMBUSTION PRODUCTS:** Phenol, Sulfur oxides, and other unknown organic combustion compounds that are potentially toxic and corrosive.**EXTINGUISHING MEDIA RECOMMENDED:** None required for this product. Media used should be controlled by other materials involved in fire.**FIRE FIGHTING INSTRUCTIONS:** Wear self-contained breathing apparatus and full protective equipment for all indoor and outdoor fires. Potential toxic and corrosive fumes may be generated under fire conditions.

## 6. ACCIDENTAL RELEASE MEASURES

**SMALL SPILL:** Neutralize pH of liquid with weak acid such as vinegar. Absorb with inert absorbent and place in a chemical resistant liquid storage container. Only very small quantities may be rinsed down sanitary sewer.

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**LARGE SPILL:** Dike spill and contain to prevent run-off. Do NOT contaminate natural waterways. Carefully neutralize pH of liquid with acid. Flush area with copious amount of water and collect washings for disposal. Transfer liquid to chemically resistant liquid storage containers. Dispose at a licensed facility according to all applicable regulations.

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## 7. HANDLING AND STORAGE

**HANDLING:** Use in a well-ventilated area away from extreme heat. Avoid creating mist or spray. Keep containers closed. Wear protective equipment and clothing. Wash hands and gloves thoroughly after handling containers or contact with solution.

**STORAGE:** Keep in well-ventilated areas between 40°F and 90°F. Note that warmer temperatures shorten useful product lifespan.

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## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

**ENGINEERING CONTROLS:** General or local exhaust should be used as required to keep vapors below exposure limits.

**RESPIRATORY PROTECTION:** If vapor concentration exceeds allowable exposure limits or as general safety precaution, use a NIOSH/MSHA approved organic vapor cartridge or canister respirator if exposure limits are exceeded. Follow the OSHA guidelines in 29 CFR 1910.134.

**SKIN PROTECTION:** Use impervious gloves and an impervious gown (or impervious apron and sleeves).

**EYE PROTECTION:** Use chemical splash goggles. A face shield should also be used if splashes to the face can be expected.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Boiling Range:</b>	220°F +	<b>Melting Point:</b>	30°F
<b>Vapor Pressure:</b>	18mm Hg @ 20°C	<b>Vapor Density (Air = 1):</b>	0.6
<b>Solubility in Water:</b>	total / 100%	<b>Specific Gravity:</b>	1.11 - 1.25
<b>Odor:</b>	Slight solvent with some sulfur dioxide odor	<b>Volatile by Volume:</b>	85% - 93%
<b>Appearance:</b> (New)	Transparent liquid with slight yellow/green tint	<b>pH:</b>	9.0 - 10.0
<b>Appearance:</b> (Older or Aged Product)	Darker liquid with appearance between weak tea to opaque brown		

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## 10. STABILITY AND REACTIVITY

**CHEMICAL STABILITY (Conditions to avoid):** Extreme heat.

**INCOMPATIBILITY:** Strong acids, reducing agents, aluminum alloys, magnesium alloys, zinc alloys.

**HAZARDOUS DECOMPOSITION:** Sulfur oxides including Sulfur Dioxide (SO, SO<sub>2</sub>, and SO<sub>3</sub>).

**HAZARDOUS POLYMERIZATION:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

No specific data for this product combination.

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## 12. ECOLOGICAL INFORMATION

No specific data for this product combination, but Biological Oxygen Demand is expected to be high.

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## 13. DISPOSAL CONSIDERATIONS

See Section 6.

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## 14. TRANSPORTATION INFORMATION

**U.S. DOT:** Product is not regulated.

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## 15. REGULATORY INFORMATION

**TSCA INVENTORY of CHEMICAL SUBSTANCES STATUS:** YES, ALL LISTED

Hydroquinone,	123-31-9,	1.0% - 2.5%
Potassium Hydroxide,	7732-18-5,	2.5% - 3.5%
Sodium Metabisulfite,	76818-57-4,	3.0% - 5.5%
2-Butoxyethanol,	111-76-2,	1.0% - 2.0%

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## 16. OTHER INFORMATION

**NFPA HAZARD RATING:** Health 2(s), Fire 1, Reactivity 1

**KEY:** (4 = Extreme, 3 = High, 2 = Moderate, 1 = Slight, 0 = Minimal)

(s) = Skin contact may significantly add to the overall exposure

**NOTICE:** The information herein is presented in good faith and believed to be accurate and complete as of the effective date shown above. Regulatory requirements are subject to change and may differ from one location to another. It is the buyer's responsibility to ensure that its activities with this product comply with all federal, state, and local laws.