MATERIAL SAFETY DATA SHEET

1. Product Information

Product: Auto System Developer **Product Code:** 60705 60048 – 5 L
Product Use: X-ray developer for automatic systems
Supplier: maxill inc.
80 Elm Street, St. Thomas, ON
Canada N5R 6C8
Contacts: Head Office: (519) 631-7370 Fax: (519) 631-3388 Emergency 24 hour CANUTEC: (613) 996-6666

WHMIS Classification: **CLASS D2(B)**

2. Preparation Information

Date Prepared: 30 January 2008 **Supersedes:** 10 November 2006 **Revision:** 5
Prepared by: Operations Department
Glossary of Terms: NAV – Not Available NAP – Not Applicable DG – Dangerous Goods

3. Hazardous Ingredients

Ingredient	CAS	% Range	LD50 Oral		LD50 Dermal		LC50 Inhalation	
			mg/kg	Species	mg/kg	Species	mg/L/4 h	Species
Glutaraldehyde	111-30-8	0.1 – 1	320	Rat	2560	Rabbit	0.28	Rat
Hydroquinone	123-31-9	1 – 5	320	Rat	4800	Rat	NAV	NAV
Sodium Carbonate	497-19-8	1 – 5	2800	Rat	NAV	NAV	NAV	NAV
Sodium Metabisulfite	7681-57-4	1 – 5	500	Rat	NAV	NAV	NAV	NAV

4. Physical Data

Physical State: Liquid **Specific Gravity:** 1.077 **Vapour Density:** 0.6 (air = 1)
Boiling Point: > 100°C **Freezing Point:** < 0°C **Vapour Pressure:** < 18 mm Hg
Appearance: Clear, pale yellow **Evaporation Rate:** < 1.0 (BuAc = 1) **pH:** 10.10
Odour: Sulfur dioxide, glutaraldehyde **Odour Threshold:** NAV **Coeff. of H_20 / Oil Distribution:** NAV

5. Fire and Explosion Data

WHMIS CLASS B? No **Flash Point:** None **Sensitivity to Static Charge:** No
Upper Explosion Limit: NAP **Auto Ignition Temperature:** NAV **Sensitivity to Impact:** No
Lower Explosion Limit: NAP
Extinction Media: Product is not combustible. Use dry chemical, foam or CO_2 for a surrounding fire.
Conditions to Avoid: Avoid contact with acids and oxidizing agents such as sodium hypochlorite. Avoid contact with soft or active metals.
Hazardous Combustion Products: May emit toxic fumes of carbon, nitrogen and sulfur oxides and sodium sulfide (flammable, irritant) if expose fire. Carbon monoxide and sulfur dioxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.

6. Toxicological Properties

Route of Entry: Eyes, skin contact and ingestion.
Effects of Acute Exposure:

Eyes: Causes severe irritation and or burns to the eyes. May cause severe corneal injury and permanent impairment of vision if prompt first-aid and medical treatment are not obtained.
Skin: Brief contact will cause itching with mild to moderate local redness and possibly swelling. Prolonged contact may result in severe redness and swelling and cause an allergic reaction.
Inhalation: Mists, aerosols or vapours are irritating to the respiratory tract, causing stinging sensations in the nose and throat. May cause severe allergic reactions in some asthmatics and sulfite sensitive individuals. May cause breathing difficulty and headache.
Ingestion: Toxic. May be fatal in humans if ingested in quantities of 70 – 170 mg/kg of sodium metabisulfite. May cause marked irritation or burns to the mouth, throat, esophagus and stomach, as well as drowsiness and dizziness.

LD50 Oral: 6274 mg/kg (Rat) **LD50 Dermal:** NAV **LC50 Inhalation:** NAV
Irritancy of Product: Corrosive to eyes, irritating to skin.

6. Toxicological Properties (continued)

Exposure Limit: ACGIH recommended ceiling limit for glutaraldehyde vapor is 0.2 ppm. PEL for Sodium metabisulfite is 5 mg/m^3 (OSHA) and TLV is 5 mg/m^3 (ACGIH). PEL for hydroquinone is 2 mg/m^3 (OSHA) and TLV is 2 mg/m^3 (ACGIH). TLV for sodium carbonate is 10 mg/m^3 (ACGIH).
Carcinogenicity: No
Sensitization to Product: May cause skin sensitization, dermatitis, and an allergic reaction in a small portion of individuals.
Teratogenicity: No
Reproductive Toxicity: No
Mutagenicity: No
Effects of Chronic Exposure: NAV
Synergistic Materials: NAV

7. First Aid Measures

Eye Contact: Rinse immediately with cool water, remove contact lenses if any, and continue rinsing with water for at least 15 minutes while holding eyelids open. Call a physician immediately
Ingestion: Do not induce vomiting. Do not give anything to drink and call a physician immediately. Do not give anything by mouth if person is unconscious or convulsing.
Inhalation: Remove to fresh air. If breathing is difficult, consult a physician.
Skin Contact: Remove contaminated clothing and shoes. Wash well the skin with soap and water. Wash clothing before wearing again. If irritation develops and persists, consult a physician.

8. Preventive Measures

Engineering Controls: General ventilation.
Handling Procedures: Avoid eye or skin contact. Avoid inhalation of vapours.
Storage Requirements: Store in original container in a dry place at controlled room temperature, away from incompatible materials. Keep container closed when not in use.
Leak and Spill Procedure: Mop up excess spilled liquid. For small spills, collect with absorbent material such as paper, vermiculite or floor absorbent. Dispose of product in accordance with applicable regulations.
Waste disposal: Dispose of product in accordance with applicable federal, provincial and municipal regulations.

Protective Equipment for Bulk Handling of Sealed Containers:
Respiratory: Not required under normal conditions of handling.
Eyewear: Safety goggles are recommended.
Gloves: Impermeable gloves (rubber, synthetic) are recommended.
Footwear: Not required under normal conditions of handling.
Other: Eye wash fountains are recommended.

Protective Equipment for End-Users:
Respiratory: Not required under normal conditions of use.
Eyewear: Safety goggles.
Gloves: Impermeable gloves (rubber, synthetic).
Footwear: Not required under normal conditions of handling.
Other: Eye wash fountains are recommended.

9. Reactivity Data

Conditions of Instability: Stable
Incompatible Materials: Avoid contact with acids, oxidizing agents, ammonia, acetylene, active metals, nitrites, nitrates, alcohols, strong gases and mineral acids.
Conditions of Reactivity: Heat (in excess of 150°C)
Hazardous Decomposition Products: May liberate toxic fumes of carbon monoxide, carbon dioxide, unidentified organic compounds in black smoke, sulfur dioxide that is toxic and corrosive, sodium sulfide residue that is flammable and oxides of nitrogen if exposed to fire.

10. Special Shipping Information

DG	Proper Shipping Name	TDG Hazard Class	UN Number	Packing Group
No	NAP	NAP	NAP	NAP