

M.G. Chemicals

Registered Quality System ISO 9001 QMI Certificate #00 4008 Toronto, Ontario, Canada

Material Safety Data Sheet

Head Office: 9347 - 193 street, Surrey, B.C., Canada, V4N 4E7

Technical Information: 1-800-201-8822

Revision Date: 11-Jan-00 Prepared By: Howard Clark

Emergency: Phone Canutech (613)-996-6666 Collect, 24 hours

For updates please download from www.mgchemicals.com, or fax requests to 1-800-708-9888

Section 1: Product Identification

Product Code: 718

Name: Negative Resist Developer - Type 1

Use: For developing negative type 1 resist.

Section 2: Hazardous Ingredients:

CAS#	ChemicalName	Percentage by weight	ACGIH TWA	Osha Pel	Osha Stel
1330-20-7	xylene	50 - 80	100ppm	100ppm	150ppm
100-41-4	ethyl benzene	5 - 25	100ppm	100ppm	125ppm
110-49-6	2-methoxyethyl acetate	10 - 40	5ppm	25ppm	5ppm

Section 3: Hazards Identification

Eyes: Liquid causes severe irritation, experienced as discomfort or pain, excess blinking and tear production, with marked excess redness and swelling of conjunctiva. Corneal injury may occur. Vapor or mist may be irritating, experienced as discomfort, excess blinking and tear production with excess redness of the conjunctiva.

Skin: No evidence of harmful effects from available information.

Inhalation: Causes respiratory tract irritation, experienced as discomfort in the nose and throat, and discharge from the nose; respiratory irritation, experienced as cough, chest discomfort, production of sputum, difficulty with breathing, pulmonary edema and hemorrhage; headache, nausea, dizziness, drowsiness, weakness, confusion, disturbed vision, ringing in ears, difficulty in walking and coma.

Ingestion: Moderately toxic. Causes headaches, dizziness, nausea, vomiting, mental confusion, incoordination, prostration and death. Kidney damage has been described.

Chronic: Prolonged or repeated contact may cause discomfort and local redness, as well as defatting and drying of skin. Prolonged inhalation of high concentrations can cause liver and kidney degenerative lesions. Repeated overexposure may cause injury to bone marrow and blood cells, kidney, liver, and testes.

Section 4: First Aid Measures

Eyes: Remove contact lenses. Flush with water or saline for 15 minutes. Get medical aid.

Skin: Wash skin with soap and water for 15 minutes. Get medical aid if irritation persists.

Inhalation: Immediately remove from exposure to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid immediately.

Ingestion: Do not induce vomiting. If conscious, give 1-2 glasses of water. Get medical aid.

Section 5: Fire Fighting Measures

Autoignition Temperature: n/e **Flash Point:** 26.7°C **LEL/UEL:** 1.0 / 8.2

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

General Information: Will burn if involved in a fire. Containers may explode in the heat of a fire. Highly flammable vapors are heavier than air and may accumulate in low areas. Flash back along vapor trail is possible.

NFPA Ratings: Health 1 **Flammability** 2 **Reactivity** 0

HMIS Ratings: Health 1 **Flammability** 2 **Reactivity** 0 **WHMIS Code** B2, D2A

Section 6: Accidental Release Measures

Spill Procedure: Remove all sources of ignition. Provide adequate ventilation. Wear appropriate personal protection. Sprinkle absorbant compound onto spill, then sweep into a plastic or metal container. Wipe up further residue with paper towel and place into container. Wash spill area with soap and water.

Section 7: Handling and Storage

Handling: Avoid skin contact. Avoid contact with eyes, skin, and clothing. Do not ingest or inhale. Do not expose container to heat or flame.

Storage: Keep away from sources of ignition. Store in a cool, dry, well ventilated area, away from incompatible substances.

Section 8: Exposure Controls

Routes Of Entry: Eyes, ingestion, inhalation, and skin.

Ventilation: Use adequate general or local exhaust ventilation to keep airborne concentrations below exposure limits.

Personal Protection: Wear appropriate protective eyeglasses or chemical safety goggles. Wear appropriate protective gloves and clothing to prevent skin contact. Use a NIOSH approved respirator when necessary.

Section 9: Physical and Chemical Properties

Physical State: Liquid Odor: aromatic Solubility: 22% Evaporation Rate: <1
Boiling Point: 174.4C Specific Gravity: 0.89 Vapor Pressure: 1 PSI @ 21C Vapor Density: >1 (Air = 1) Ph n/a

Section 10: Stability and Reactivity

Stability: Stable at normal temperatures and pressures.
Conditions To Avoid: Temperatures over 40C, ignition sources, and incompatible materials.
Incompatibilities: Strong oxidizing agents
Polymerization: Will not occur.
Decomposition: carbon oxides

Section 11: Toxicological Information

Sensitization (effects of repeated exposure): Not known to.
Carcinogenicity (risk of cancer): The ingredients of this product are not classified as being carcinogenic by ACGIH (American Conference of Governmental Industrial Hygienists) or IARC (International Agency for Research on Cancer), not regulated as carcinogens by OSHA (Occupational Safety and Health Administration), and not listed as carcinogens by NTP (National Toxicology Program)
Teratogenicity (risk of malformation in an unborn fetus): Increased birth defects, fetal lethality, and delayed fetal development has been observed in female animals exposed to air concentrations of 50 ppm.
Reproductive Toxicity (risk of sterility): Known to cause damage to male reproductive organs.
Mutagenicity (risk of heritable genetic defects): Not known to.
Lethal exposure concentrations: Ingestion(LD50): 1250 mg/kg (guinea) Inhalation(LC50): n/e Skin(LD50): 5250 mg/kg (rabbit)

Section 12: Ecological Information

General Information: Avoid runoff into storm sewers and ditches which lead to waterways. Water runoff can cause environmental damage.
Environmental Impact Data (percentage by weight): CFC: 0 HFC: 0 CLSolv: 0 VOC: 0 HCFC: 0 ODP: 0

Section 13: Disposal Information

General Information: Dispose of in accordance with all local, provincial, state, and federal regulations. Water runoff can cause environmental damage.

Section 14: Transportation Information

Ground: (all sizes 4 litres or less)

Consumer Commodity, ORM-D

Ground - Large Sizes: (all sizes larger than 4 litres)

Shipping Name - Xylene Solution, flash point 25C, Class 3, UN1307, Packing Group - III, Subsidiary Risk - nil, Use only M.G.Chemicals U.N. certified outer cartons. Tape all seems on the carton. Hazard Label required - Flammable Liquid. A double arrow orientation label is required and is already printed on the original outer carton. The shipper must be trained and certified to handle documented dangerous goods. References - CFR 49, Transport Canada TDG.

Air within continental USA: (all sizes larger than 250ml)

Federal Express:

Complete Fed Ex dangerous goods declaration, Shipping name - Consumer Commodity, Class - ORM-D, UN # - n/a (leave blank), Packing Group - n/a (leave blank), Sub Risk - n/a (leave blank), Packing Instructions - n/a (leave blank), Authorization - n/a (leave blank). Use M.G. Chemicals UN certified outer carton. A double arrow orientation label is required and is already printed on the original outer carton. Change the ORM-D marking on the outer carton to ORM-D-AIR, Tape all seems on the carton.

UPS Air:

Complete UPS forms marked "Hazardous Materials Shipping Paper" and "Shipper's Certification for Hazardous Materials" with the following information: Shipping Name - Consumer Commodity, Hazard Class - ORM-D, Label Type - ORM-D-AIR. Use M.G. Chemicals UN certified outer carton. A double arrow orientation label is required and is already printed on the original outer carton. Change the ORM-D marking on the outer carton to ORM-D-AIR, Tape all seems on the carton. Refer to UPS guide for shipping hazardous materials.

All other air: (all sizes larger than 250ml)

Shipping Name - Consumer Commodity, Class 9, ID# 8000, Packing Group - n/a (leave blank), Sub risk - n/a (leave blank), Packing instruction - 910, Authorization - n/a (leave blank), Emergency - phone (613) 996-6666 collect. Use M.G. Chemicals UN certified outer carton. A double arrow orientation label is required and is already printed on the original outer carton. Add a class 9 diamond label to outer carton, and mark ID# 8000 below consumer commodity. Tape all seems. For further information refer to IATA regulations, or phone M.G. Chemicals technical service at 1-800-201-8822

All other Air Including Continental USA - Large Sizes: (all sizes larger than 250ml)

Shipping Name - Xylene Solution, flash point 25C, Class 3.3, UN1307, Packing Group - III, Subsidiary Risk - nil, IATA Packaging Instructions - 309, Use only M.G.Chemicals U.N. certified outer cartons. Tape all seems on the carton. Hazard Label required - Flammable Liquid. A double arrow orientation label is required and is already printed on the original outer carton. The shipper must be trained and certified to handle documented dangerous goods. References - CFR 49, IATA, Transport Canada TDG.

Sea - all sizes:

Shipping Name - Xylene Solution, flash point 25C, Class 3.3, UN1307, Packing Group - III, Vessel Storage - stow clear of living quarters, stow away from sources of heat, may be stowed on deck or under deck on a cargo vessel, must be stowed on deck on a passenger vessel. Use M.G. Chemicals UN certified outer carton. Hazard Labels required - class 3 Flammable Liquid and a Marine Pollutant label. Each box not to exceed 30 kg gross weight. A double arrow orientation label is required and is already printed on the original outer carton. Tape all seems. Emergency - phone (613) 996-6666 collect. For further information refer to IMO regulations or phone M.G. Chemicals technical service at 1-800-201-8822.

Section 15: Regulatory Information

SARA (Superfund Amendments and Reauthorization Act of 1986, USA, 40 CFR, 372.4)

None of the chemicals in this product have a reportable quantity.

EPCRA (Emergency Planning and Community Right to Know act, USA, 40 CFR, 372.45)

This product does not contain any chemicals subject to the reporting requirements of section 313 Title III of the SARA of 1986 and 40 CFR part 372

TSCA (Toxic Substances Control Act of 1976, USA)

All substances are TSCA listed.

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleters.

This product does not contain any class 2 ozone depleting substances.

This product does not contain any chemicals listed as hazardous air pollutants.

California Proposition 65 (Chemicals known to cause cancer or reproductive toxicity, May 1, 1997 revision, USA)

This product contains ethylene glycol monomethyl ether acetate (cas# 110-49-6), known to the state of California to cause birth defects, and other reproductive harm.

Health Canada

Labeling and containers used in this product are in compliance with Consumer Chemicals and Container regulations.

Environment Canada

Chemicals in this product are listed on the Domestic Substances List in the Canadian Environmental Protection Act.

This product does not contain any ozone depleting substances.

Industry and Science Canada

Labeling, product identity, net quantity declaration, minimum printing type size heights, and packaging of this product is in compliance with the Consumer Packaging and Labeling Act and Regulations. This product is not slack filled in accordance to chapter 4 prohibitions.

Section 16: Other Information

Definitions: n/a = not applicable, n/e = not established

Disclaimer: This material safety data sheet is provided as an information resource only. M.G. Chemicals believes the information contained herein is accurate and compiled from sources to be reliable, it is the responsibility of the user to verify its validity. The buyer assumes all responsibility of using and handling the product in accordance with federal, state and local regulations.
