Negative Developer

4170 NEW

Used for developing boards laminated with MG Chemicals Negative Dry Film Resist. For removing exposed resist during the negative photofabrication process.

Developing Process:

Dilute 1 part of developer to 10 parts of room temperature water. Mix well with foam brush. Submerge exposed board into solution and brush the board gentle with foam brush. If double sided board, flip the board and to brush the other side and repeat until developing is completed. The developing process is completed once all the resist has been washed off leaving the image of your schematic on the board. Take the board out of the solution and then rinse with water. You are now ready for etching.

Specifications

Properties	
Physical state	Liquid
Odor	Odorless
Appearance	Clear, Colorless solution
PH	13.10
Flash point	Non-flammable
Vapor pressure	Similar to water
Solubility	Completely soluble
Specific gravity	1.08
Volitile Organic Compounds (VOC)	0 g/l

Available Sizes

Catalog Number	Sizes Available	Description
4170-500ML	500 mL (17 fl. oz)	Liquid

Material Safety Data Sheet

Section 1: Product Identification

MSDS Code: 4170 **Name: Negative Developer**

Related Part Numbers: 4170-500ML

Use: Negative photopolymer developer used in the manufacture of printed circuit boards.

Section 2: Hazardous Ingredients

CAS#	Chemical Name	Percentage by weight	ACGIH TWA	Osha Pel	Osha Stel
584-08-7	Potassium Carbonate	4-10%	N/A	N/A	N/A
7732-18-5	Water	90-96%	N/A	N/A	N/A

Section 3: Hazards Identification

Eyes: Will cause severe conjunctive irritation, redness, pain, and possible corneal damage.

Skin: Material will cause severe irritation and may cause chemical burns

Inhalation: Causes irritation of the respiratory tract with coughing, burns, and breathing difficulty.

Ingestion: Harmful if swallowed. Causes gastrointestinal tract burns.

Chronic: Dermatitis if repeated exposure.

Section 4: First Aid Measure

Eyes: Remove contact lenses. Flush with plenty of water. Get medical aid**.**

Skin: Wash skin with plenty of soap and water. Get medical aid if symptoms persist.

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

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

Section 5: Fire Fighting Measures

Autoignition Temperature: N/A **Flash Point:** N/A **LEL / UEL:** N/A

Extinguishing Media: Use any means suitable for extinguishing surrounding fire.

General Information: Will not burn.

Section 6: Accidental Release Measures

Spill Procedure: Provide adequate ventilation. Wear appropriate personal protection. Sprinkle absorbent compound onto spill then sweep into a plastic container. Wipe up further residue with paper towel and place in container. Wash spill area with soap and water.

Section 7: Handling and Storage

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

Storage: Store in a cool, dry, well-ventilated area. Keep from freezing.

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 clothing to prevent skin contact. Use a NIOSH approved respirator when necessary.

Section 9: Physical and Chemical Properties

Physical State:	Liquid	**Odor:**	Odorless	**Solubility in water:**	Complete	**Evaporation Rate:**	Slow		
Boiling Point:	98ºC/208ºF	**Specific Gravity:**	1.08	**Vapor Pressure:**	N/E	**Vapor Density:**	N/E	**pH:**	13

Section 10: Stability and Reactivity

Stability: Stable at normal conditions.

Conditions to avoid: Incompatible materials, and exposure to moist air or water.

Incompatibilities: Acids, chlorine, trifluoride, magnesium. An explosion occurred after mixing sodium hydrosulfite, aluminum powder, potassium carbonate and benzaldehydo.

Polymerization: Will not occur.

Decomposition: Oxides of carbon, oxides of potassium

Section 11: Toxicological Information

Sensitization: (effects of repeated exposure) Prolonged or repeated skin contact may cause dermatitis.

Carcinogenicity: (risk of cancer) No

Teratogenicity: (risk of malformation in an unborn fetus) No

Reproductive Toxicity: (risk of sterility) No

Mutangenicity: (risk of heritable genetic effects) No

Lethal Exposure Concentrations:	**Ingestion (LD50):**	**Inhalation: (LC50)**	**Skin (LD50):**	**Inhalation (TCLo):**
Potassium Carbonate	1870 mg/kg	N/E	N/E	43 mg/m3/17W Rat
Water	90 ml/kg Rat	N/E	N/E	N/E

Section 12: Ecological Information

General Information:

Volatile Organic compounds, % by weight: 0

Volatile Organic compounds, grams per litre: 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 1 liter or less)

Not regulated

Air:

Not regulated

Sea:

Not regulated

Section 15: Regulatory Information

CANADA

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by the Controlled Products Regulations.
DSL

All ingredients in this product are listed on the Domestic Substances List

WHMIS

This product belongs to the following categories**: D2B, E**

Industry and Science Canada

MG Labels products intended for the workplace to conform to WHMIS labeling regulations. Product identification, net quantity declaration, minimum printing type size heights, and packaging of this product are in compliance.

CAA (Clean Air Act, USA)

This product does not contain any class 1 ozone depleting substances.

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

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

Health Canada

Products produced by MG Chemicals intended for retail display conform to the Canadian Consumer Labeling Regulations.

USA

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 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.