

MATERIAL SAFETY DATA SHEET



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SECTION I CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: AQUAMULSION® POSITIVE DEVELOPER

General Use: Developing images on pre-sensitized metal

Company: UEI® Systems, A UEI Group Company
Address/Phone: 9090 Nieman Road
Overland Park, KS 66214
(800) 221-9059 or (913) 541-0503

Emergency Contact Number: CHEMTREC – Available 24 hrs/day, 7 days/week
Domestic North America: 800-424-9300
International: 703-527-3887

SECTION II HAZARDOUS INGREDIENTS / IDENTIFIY INFORMATION

<u>Hazardous Components</u>	<u>Cas No.</u>	<u>%</u>	<u>OSHA (PEL/TWA)</u>	<u>ACGIH TLV</u>	<u>MSHA (PET/TWA)</u>
Sodium Metasilicate	6834-92-0	70-80%	NA	NA	NA

SECTION III HAZARD IDENTIFICATION

Identification: White to off-white granular powder with no odor.
Corrosive to eyes and skin.

Routes of Entry: Inhalation, Ingestion, and Skin Absorption.

Health Hazards (Acute and Chronic): *Eyes:* Causes burns. With greater exposure severe burns and possible blindness.

Skin: Causes burns. With greater exposure severe burns and scarring.

Ingestion: Causes burns to mouth, throat, esophagus, and digestive tract. With greater exposure death may result.

Inhalation: This product as supplied is not respirable. If dust is generated from this product, it can cause burns to the respiratory tract if inhaled.

Carcinogenicity: No known chronic hazards. Not listed by OSHA, NTP, or IARC as a carcinogen.

Sign and Symptoms of Exposure: *Eyes:* Redness, pain, and corneal opacity to exposed eyes.

Skin: Exposed skin will turn red and feel slippery with a burning sensation.

Ingestion: Will cause a burning pain in the mouth, esophagus, and digestive tract.

Inhalation: Product dust will cause mild irritation to burning pain depending on severity of exposure. Difficult or painful breathing may occur.

Medical Conditions Aggravated: Contact with this material may aggravate existing skin conditions.

SECTION IV FIRST AID MEASURES

In all cases call a physician immediately.

Ingestion: DO NOT induce vomiting. Never give anything to an unconscious person.

Inhalation: Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

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SECTION V FIRE FIGHTING MEASURES

Flash Point: NA **Flammable Limits:** NA **Auto-ignition temperature:** NA
Extinguishing Media: Compatible with all extinguishing media.
Special Fire Fighting Procedures: Firefighters should protect themselves from contact with the product with eye protection and full protective clothing.
Unusual Fire and Explosion Hazards: NONE

SECTION VI ACCIDENTAL RELEASE MEASURES

Clean-up personnel should wear chemical goggles, chemical resistant gloves, and rubber boots. Use NIOSH-Certified Respirator for dust where dust occurs. For small spills gently moisten the powder with tap water until the powder becomes a paste. Do not remove any powder until it is in paste form. Then pick up paste with paper towels or a mop and rinse the towels or mop in a container of water. When the spill is completely picked up dispose of the water, the towels, and the mop head in an approved manner. For large spills sweep, scoop, or vacuum spilled material. In case of contact with water prevent runoff from entering into storm sewers and natural waterways. Ensure compliance with local, state and federal regulations.

SECTION VII HANDLING AND STORAGE

SEE: Section 8 for general protective measures.

This product absorbs water from the air. Store in original packaging inside of tightly closed plastic containers. Do not store in aluminum, fiberglass, copper brass, zinc, or galvanized containers. Use inventory in a first in, first out basis. Separate from acids, reactive metals, and ammonium salts. Store at temperatures below 160° F.

SECTION VIII EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls: Use only in a well-ventilated area.

Personal Protection: Wear chemical resistant rubber gloves, chemical safety goggles (contact lenses should not be worn), chemical resistant body covering, and boots. Safety shower and eye wash stations should be located in the work area. Wash thoroughly after handling product. Use NIOSH-approved dust respirator where dust occurs. Observe OSHA regulations for respirator use.

SECTION IX PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	NA	Melting Point:	NA
Physical State:	Solid	Vapor Pressure:	17.5
Vapor Density (Air=1):	0.015	Solubility in Water:	Complete
pH:	> 12 to 13	Specific Gravity (Water=1):	Solid Material
Viscosity:	NA	Evaporation Rate (n-BuAc=1):	0.5
Appearance:	White to off-white granular powder	Odor:	Odorless

SECTION X STABILITY AND REACTIVITY

Stability: Stable **Conditions to avoid:** None Known
Incompatibility: Contact with acids. Generates heat with mixed with acid. May react with ammonium salt solutions resulting in evolution of ammonia gas. Flammable hydrogen gas may be produced on contact with aluminum, tin, lead, and zinc. Carbon monoxide gas may be produced on contact with reducing sugars.
Hazardous Decomposition/By-Products: Hydrogen
Hazardous Polymerization: Will NOT occur

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SECTION XI TOXICOLOGICAL INFORMATION

Principle Routes of Exposure

<i>Ingestion:</i>	Corrosive. Causes burns to the mouth, throat and stomach.
<i>Skin Contact:</i>	Corrosive. Causes burns.
<i>Inhalation:</i>	Corrosive to respiratory passage.
<i>Eye Contact:</i>	Corrosive. Causes eye burns.
<i>Additional Information:</i>	

This material has not been tested for primary eye irritation potential. However, on the basis of its high degree of alkalinity, it is regarded as corrosive to the eyes. When this material was tested for skin corrosion / irritation potential according to OECD Guidelines Section 404, it produced dermal corrosion. The acute oral toxicity of this product has not been tested. When sodium silicates were tested on a 100% solids basis, their single dose acute oral LD50 in rats ranged from 1500 mg/kg to 3200 mg/kg. The acute oral lethality resulted from nonspecific causes. Subchronic Data: In a study of rats fed sodium silicate in drinking water for three months, at 200, 600 and 1800 ppm, changes were reported in the blood chemistry of some animals, but no specific changes to the organs of the animals due to sodium silicate administration were observed in any of the dosage groups. Another study reported adverse effects to the kidneys of dogs fed sodium silicate in their diet at 2.4g/kg/day for 4 weeks, whereas rats fed the same dosage did not develop any treatment-related effects. Decreased numbers of births and survival to weaning was reported for rats fed sodium silicate in their drinking water at 600 and 1200 ppm.

Acute Test of Product

<i>Acute Oral LD₅₀:</i>	Not Available
<i>Acute Dermal LD₅₀:</i>	Not Available
<i>Acute Inhalation LC₅₀:</i>	Not Available

Carcinogenicity:

Ingredients IARC	Carcinogens ACGIH	Carcinogens
Disodium Metasilicate	Not listed.	Not listed.
Water	Not listed.	Not listed.

Carcinogenicity Comment: There are no known reports of carcinogenicity of sodium silicates.

Reproductive Toxicity/Teratogenicity/Embryotoxicity/Mutagenicity:

Sodium silicate was not mutagenic to bacterium E. Coli when tested in a mutagenicity bioassay.

SECTION XII ECOLOGICAL INFORMATION

Ecotoxicological Information

Ingredients Ecotoxicity	Fish Species Data	Acute Crustaceans Toxicity	Ecotoxicity – Freshwater Algae Data
Disodium Metasilicate	LC ₅₀ (Brachydanio rerio) 210 mg/L	Not Available	Not Available
Water	Not Available	Not Available	Not Available

Other Information:

The following data is reported for sodium silicates on a 100% solids basis: A 96 hour median tolerance for fish (*Gambusia affinis*) of 2320 ppm; a 96 hour median tolerance for water fleas (*Daphnia magna*) of 247 ppm; a 96 hour median tolerance for snail eggs (*Lymnea*) of 632 ppm; and a 96 hour median tolerance for Amphipoda of 160 ppm. Sinks and dissolves in water. This material is not persistent in aquatic systems, but its high pH when undiluted or unneutralized is actually harmful to aquatic life. Diluted material rapidly depolymerizes to yield dissolved silica in a form that is indistinguishable from natural dissolved silica. It does not contribute to BOD. This material does not bioaccumulate except in species that use silica as a structural material such as diatoms and siliceous sponges. Where abnormally low natural silica concentrations exist (less than 0.1 ppm), dissolved silica may be a limiting nutrient for diatoms and a few other aquatic algal species. However, the addition of excess dissolved silica over the limiting concentration will not stimulate the growth of diatom populations; their growth rate is independent of silica concentration once the limiting concentration is exceeded. Neither silica nor sodium will appreciably bioconcentrate up the food chain.

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SECTION XIII DISPOSAL INFORMATION

Disposal of Waste Method:

Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations.

Contaminated Packaging:

Empty containers should be recycled or disposed of through an approved waste management facility.

SECTION XIV TRANSPORT INFORMATION

DOT (US)

DOT Shipping Name: Corrosive Solid,Basic,Inorganic,N.O.S., (Sodium Metasilicate Anhydrous)

DOT Class: 8

DOT UN Number: UN3262

DOT Packing Group: II

DOT Reportable Quantity (lbs): Not Available

Note: No additional remark

Marine Pollutant: No

TDG (Canada)

TDG Proper Shipping Name: Corrosive Solid,Basic,Inorganic,N.O.S., (Sodium Metasilicate Anhydrous)

Class: 8

UN Number: UN3262

Packing Group: II

Reportable Quantity (lbs): Not Available

Note: No additional remark

Marine Pollutant: No

SECTION XV REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

Note: Not Available

U.S. Regulatory Rules

Ingredients	CERCLA/SARA Section 302	SARA (311, 312) Hazard Class	CERCLA/SARA Section 313
Disodium Metasilicate	Not Listed	Acute	Not Listed
Water	Not Listed	Not Listed	Not Listed

California Proposition 65: Not Listed

MA Right To Know List: Not Listed

New Jersey Right To Know List: Not Listed

Pennsylvania Right To Know List: Not Listed

WHMIS Hazardous Class: CORROSIVE MATERIAL

SECTION XVI OTHER INFORMATION

UEI™ Systems provides the information contained herein in good faith. It is believed to be correct. However it is not all inclusive and should be used only as a guide. Individuals receiving this information must exercise their independent judgement in determining its appropriateness for a particular purpose. UEI™ Systems shall not be held liable for any damage resulting from handling or from contact with this product. All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources.

Abbreviations:

PEL	Permissible Exposure Limit
TLV	Threshold Limit Value
NA	Not Applicable