

Section 1 Chemical Product and Company Identification

Product Identifier	MiraMag® Resist Remover
Product Number	IR-CHE8510
General Use	Stripping photoresist from magnesium plates
Company Address	UEI Systems®, a UEI Group Company 9090 Nieman Road Overland Park, KS 66214 USA
Phone	+1 800 221 9059 or +1 913 541 0503
Emergency Contact Number	CHEMTREC – Available 24 hours/day, 7 days/week Domestic North America: +1 800 424 9300 International: +1 703 527 3887

Section 2 Hazards Identification

GHS Classification

Hazard Class	Hazard Category	Route of Exposure
Corrosive to metals	1	–
Skin Corrosion	1	–
Serious Eye Damage	1	–
Acute Aquatic Toxicity	3	

GHS Labeling

Contains Sodium Hydroxide (1310-73-2)



Danger

Hazard Statements

May be corrosive to metals
Causes severe skin burns and eye damage
Causes serious eye damage
Harmful to aquatic life

Precautionary Statements

Keep only in original container
Wash skin thoroughly after handling
Avoid release to the environment
Wear protective gloves/protective clothing/eye protection/face protection

Response

If Swallowed: Call a Poison Center or doctor/physician if you feel unwell. Rinse mouth. Do **not** induce vomiting.
If On Skin (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/ shower.
If Inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
If In Eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a **Poison Center** or doctor/ physician. Wash contaminated clothing before reuse.
Absorb spillage to prevent material damage.

Section 2 Hazards Identification, continued

- Storage** Store locked up. Keep in original container.
Store in corrosive-resistant, stainless steel container with a resistant inner liner.
- Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations

Section 3 Hazardous Ingredients / Identity Information

Mixtures Composition range is provided; specific compositions are withheld as a trade secret.

Hazardous Components	CAS No.	%
Sodium Hydroxide	1310-73-2	60
Proprietary mixture of non-hazardous ingredients	NA	40

Section 4 First Aid Measures

- Inhalation** If inhaled and if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms, consult with a medical professional.
 - Skin Contact** For even minor contact, immediately remove contaminated clothing. Wash skin thoroughly with mild soap and water.
 - Eye Contact** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - Ingestion** If swallowed, rinse mouth with water (only if the person is conscious). Do **not** induce vomiting unless directed to do so by medical personnel.
- Symptoms and Effects, both Acute and Delayed**
- Inhalation** May cause respiratory irritation/burning
 - Skin Contact** Causes severe skin burns and eye damage
 - Eye Contact** Risk of serious damage to eyes
 - Ingestion** May cause burns to gastrointestinal tract

Section 5 Firefighting Measures

- Extinguishing Media** Not combustible. If there is a fire close by, use suitable extinguishing agents.
 - Fire Hazard** The product itself will not burn.
 - Explosion Hazard** The product is not explosive.
 - Reactivity** Spontaneous polymerization will not occur
- Firefighting Equipment/Instructions** All extinguishing media can be used. Do not enter fire area without proper protective equipment, including respiratory protection. Wear fire/flame resistant/retardant clothing. Wear a self contained breathing apparatus. EN469

Section 6 Accidental Release Measures

Protective Equipment for Non-Emergency Personnel	Wear suitable gloves resistant to chemical penetration: rubber. Avoid contact with skin and eyes.
Emergency Procedures for Non-Emergency Personnel	Stop leak without risks if possible. Small spills may be taken up in non-combustible absorbent material and shoveled into a container for disposal.
Protective Equipment for Emergency Responders	Avoid eye and skin contact. Use eye protection designed to protect against liquid splashes (EN 166). Wear suitable protective clothing and rubber gloves (EN 374).
Emergency Procedures for Emergency Responders	Stop leak without risks if possible. Relevant water authorities should be notified of any large spillage to water course or drain. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. Impound and recover large spill by mixing it with inert granular solids.
Environmental Precautions	Neutralize prior to disposal (pH between 5.5 and 8.5)
Methods for Cleaning Up	Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Absorb and/or contain spill with inert material, then place in suitable container.

Section 7 Handling and Storage

Handling Precautions	Avoid eye and skin contact. Do not eat, drink or smoke when using this product. Use in a well-ventilated location. Open containers slowly on a stable surface. Do not expose containers to extreme temperatures. Avoid breathing airborne mists, sprays, or vapors generated by this product.
Hygiene Measures	Wash thoroughly after using this product. Do not eat or drink while using this product. Remove contaminated clothing and wash before reuse.
Storage Requirements	Store in original container. Keep container tightly closed and in a well-ventilated place. Product should be stored in a sealed container. Keep container tightly closed when not in use.
Incompatible Materials	Incompatible with water-reactive materials, strong oxidizers, strong acids, aluminum and other metals.
Storage Area	Store in dry, cool, well-ventilated area. Store away from incompatible materials. Containers should be separated from oxidizing materials by a minimum distance of 20 feet or by a barrier of non-combustible material at least 5 feet high having a fire-resistance rating of at least 0.5 hours. Storage areas should be made of fire resistant materials.

Section 8 Component Exposure Limits

Control Parameters	<u>Hazardous Components</u>	<u>CAS No.</u>	<u>%</u>	<u>OSHA (PEL/TWA)</u>	<u>ACGIH TLV</u>
	Sodium Hydroxide	1310-73-2	60	2 mg/m ³	2 mg/m ³
Appropriate Engineering Controls	Avoid splashing. Provide local exhaust ventilation of closed transfer systems to minimize exposures.				
Personal Respiratory Protection	A properly fitted respirator with cartridges suitable for mists is recommended in instances where heavy mist is formed. EN 12083.				
Hand Protection	Wear protective, water-proof gloves				
Eye Protection	Use splash goggles when eye contact due to splashing is possible				
Skin Protection	Wear protective clothing				

Section 9 Physical and Chemical Properties

Appearance/Odor	Clear liquid/odorless	Odor Threshold	No data
pH	No data	pH Solution	14
Boiling Point	221–284° F (105–140° C)	Melting Point	10–50° F (-12 – -10° C)
Solubility (H₂O)	Material highly soluble in water	Specific Gravity	No data
Evaporation Rate	Similar to water	Relative Vapor Density	1.38 (Water = 1)
Decomposition Temperature	No data	Auto Ignition	No data
Self-ignition Temperature	No data	Flash Point	No data
Relative Vapor Density	1.38 (Air = 1.0)	Relative Density	1.327 g/cm ³ at 77 °F (25 °C)
Vapor Pressure	< 24 hPa (< 18 mmHg) at 68 ° F (20 °C)	Flammability	Not flammable
Viscosity, Dynamic	No data	Freezing Point	Similar to water

Section 10 Chemical Stability and Reactivity

Reactivity	Normally stable, even under fire exposure conditions, and not reactive with water
Chemical Stability	Stable under normal conditions
Possibility of Hazardous Reactions	No data available
Conditions to Avoid	Keep away from strong acids. Refer to Section 7.
Incompatibility	Water, acids, Organic materials, Chlorinated solvents, Aluminum, Phosphorus, Tin/tin oxides, Zinc
Hazardous Decomposition/By-Products	No data available

Section 11 Toxicological Information

Likely Routes of Exposure	Dermal (skin contact), Inhalation, and Ocular (eye contact)
Symptoms	Inhalation may cause irritation, cough, shortness of breath. Skin contact may cause irritation. Contact with eyes may cause irritation.
Effects from Exposure	The most serious short term effects are due to contact with eyes and skin, resulting in irritation.
Acute Toxicity	No data available
Skin Corrosion/Irritation	Skin - Rabbit (Sodium hydroxide) Result: Causes severe burns. - 24 h
Serious Eye Damage/Irritation	Eyes - Rabbit (Sodium hydroxide) Result: Corrosive - 24 h
Respiratory or Skin Sensitization	Will not occur
Germ Cell Mutagenicity	No data available
Carcinogenicity	No data available
Reproductive Toxicity	No data available
Specific Target Organ Toxicity (single exposure)	No data available
Specific Target Organ Toxicity (repeated exposure)	No data available
Aspiration Hazard	No data available

Section 12 Ecological Information

Toxicity

Component	Species	Exposure Time	LC50/EC50/IC50
Sodium Hydroxide (1310-73-2)	<i>Gambusia affinis</i> (Mosquito fish)	96 hrs	LC50 125 mg/l
	<i>Oncorhynchus mykiss</i> (Rainbow trout)	96 hrs	LC50 45.4 mg/l
	<i>Daphnia</i> (Water flea)	48 hrs	EC50 40.38 mg/l

Persistence/Degradability The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative Potential No data available

Mobility in Soil No data available

Section 13 Disposal Considerations

Disposal Instructions Depending on the local regulations, it may be disposed of as solid waste or incinerated in a suitable installation. Dispose in a safe manner in accordance with local/national regulations.

Section 14 Transportation Information

DOT (US)	IMDG	IATA
UN number 1824	UN number 1824	UN number 1824
Class 8	Class 8	Class 8
Packing group II	Packing group II	Packing group II
Proper shipping name Sodium hydroxide solution	EMS-No F-A, S-B Proper shipping name SODIUM HYDROXIDE SOLUTION	Proper shipping name Potassium hydroxide solution
Reportable Quantity (RQ) 1,923 lbs		
Poison Inhalation Hazard No		

Section 15 Regulatory Information

Component Analysis – State

SARA 302 Components

SARA 302 No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313 This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards No SARA Hazards

	Right To Know Components	CAS-No	Revision Date
Massachusetts	Sodium Hydroxide	1310-72-2	2007-03-01
	Water	7732-18-5	
Pennsylvania	Sodium Hydroxide	1310-72-2	2007-03-01
	Water	7732-18-5	
New Jersey	Sodium Hydroxide	1310-72-2	2007-03-01
	Water	7732-18-5	

California Prop 65 This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Section 16

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

End Notes

1. SARA - Signed into law in 1986, the Superfund Amendments and Reauthorization Act (SARA) is an extension of CERCLA, and is intended to encourage and support local and state emergency planning efforts. SARA provides citizens and local governments with information about potential chemical hazards, and calls for facilities that store hazardous materials to provide officials and citizens with data on the type and amount on hand at specific locations. This field states whether a material is listed or not listed in section 372.65 of SARA. EHS - This states if a material is listed or not listed in Appendix B to part 355, the SARA Extremely Hazardous Substances (EHS) section. RQ is the reportable quantity. TPQ is the Threshold Planning Quantity.
2. RCRA - The Resource Conservation and Recovery Act enacted in 1976 and subsequently amended, controls solid-waste disposal and encourages recycling. This states whether a material is listed or not listed under this regulation. If listed the Hazardous Waste Number and waste characterization assigned by RCRA is also provided.
3. CERCLA - Enacted in 1980 and amended thereafter, the Comprehensive Environmental Response, Compensation, and Liability Act provides for identification and cleanup of hazardous materials released on land, into the air, waterways, and groundwater. It covers areas affected by newly released materials and older leaking or abandoned dump sites. This states whether a material is listed or not listed in CERCLA Table 302.4. If listed the section(s) that it is listed under and the Reportable Quantity (RQ) are also provided.
4. TSCA - The Toxic Substances Control Act controls the exposure to and use of raw industrial chemicals not subject to other laws. This states whether the chemical is listed or not listed under this regulation.

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