Safety Data Sheet

Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier
Product Name: PRS-100 Positive Resist Stripper

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified use(s): Photographic process

1.3 Details of the supplier of the safety data sheet
Manufacturer: HTA Enterprises
1605 Remuda Lane
San Jose, CA 95112
United States
www.microchrometotechnology.com

Telephone (General): 408-452-5500
Telephone (General): 703-741-5500 - Information CHEMTREC

1.4 Emergency telephone number
Manufacturer: 1-800-424-9300 - CHEMTREC in US

Section 2: Hazards Identification

2.1 Classification of the substance or mixture
CLP: Skin Corrosion 1B - H314

2.2 Label Elements
CLP

DANGER

Hazard statements: H314 - Causes severe skin burns and eye damage.
Precautionary statements

Prevention: P260 - Do not breathe mists, vapours, and/or spray.
P264 - Wash thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response: P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 - Immediately call a POISON CENTER or doctor/physician.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363 - Wash contaminated clothing before reuse.
UN GHS

According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2.1 Classification of the substance or mixture

UN GHS
- Corrosive to Metals 1
- Skin Irritation 2
- Serious Eye Damage 1

2.2 Label elements

UN GHS

DANGER

Hazard statements
- May be corrosive to metals
- Causes skin irritation
- Causes serious eye damage

Precautionary statements

Prevention
- Keep only in original container.
- Wash thoroughly after handling.
- Wear protective gloves/protective clothing/eye protection/face protection.

Response
- Absorb spillage to prevent material damage.
- IF ON SKIN: Wash with plenty of soap and water.
- Take off contaminated clothing and wash before reuse.
- Specific treatment, see supplemental first aid information.
- If skin irritation occurs: Get medical advice/attention.
- 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.

Storage/Disposal
- Store in corrosive resistant/ container with a resistant inner liner.

2.3 Other hazards

UN GHS
- According to the Globally Harmonized System for Classification and Labeling (GHS) this product is considered hazardous.

United States (US)

According to: OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012
- Corrosive to Metals 1
- Skin Irritation 2
- Serious Eye Damage 1

2.2 Label elements
OSHA HCS 2012

DANGER

Hazard statements • May be corrosive to metals
Causes skin irritation
Causes serious eye damage

Precautionary statements

Prevention • Keep only in original container.
Wash thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.

Response • Absorb spillage to prevent material damage.
If on skin: Wash with plenty of water.
Take off contaminated clothing and wash before reuse.
Specific treatment, see supplemental first aid information.
If skin irritation occurs: Get medical advice/attention.
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.

Storage/Disposal • Store in corrosive resistant/ container with a resistant inner liner.

2.3 Other hazards


Section 3 - Composition/Information on Ingredients

3.1 Substances

• Material does not meet the criteria of a substance.

3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Identifiers</th>
<th>%</th>
<th>LD50/LC50</th>
<th>Classifications According to Regulation/Directive</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>CAS:1310-73-2</td>
<td>2.88% TO 3.12%</td>
<td>NDA</td>
<td>UN GHS: Met. Corr. 1; Skin Corr. 1B; Eye Dam. 1</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td>EC Number:215-185-5</td>
<td></td>
<td></td>
<td>EU CLP: Annex VI, Table 3.1: Skin Corr. 1A, H314</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EU Index:011-002-00-6</td>
<td></td>
<td></td>
<td>OSHA HCS 2012: Met. Corr. 1; Skin Corr. 1B, Eye Dam. 1</td>
<td></td>
</tr>
<tr>
<td>Sodium chloride</td>
<td>CAS:7647-14-5</td>
<td>0% TO 0.3%</td>
<td>Ingestion/Oral-Rat LD50 • 3000 mg/kg</td>
<td>UN GHS: Eye Irrit. 2; Skin Irrit. 3; Acute Tox. 5 (orl)</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td>EC Number:231-598-3</td>
<td></td>
<td></td>
<td>EU CLP: Eye Irrit. 2, H319</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>OSHA HCS 2012: Eye Irrit. 2</td>
<td></td>
</tr>
</tbody>
</table>

See Section 16 for full text of H-statements.
**Section 4 - First Aid Measures**

### 4.1 Description of first aid measures

**Inhalation**
- Move victim to fresh air. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If signs/symptoms continue, get medical attention.

**Skin**
- For minor skin contact, avoid spreading material on unaffected skin. In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Take off contaminated clothing and wash before reuse. If skin irritation occurs: Get medical advice/attention.

**Eye**
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

**Ingestion**
- If swallowed, rinse mouth with water (only if the person is conscious) Do NOT induce vomiting. Drink large amounts of water or milk. Never give anything by mouth to an unconscious person. Do not use mouth-to-mouth method if victim ingested the substance. Obtain medical attention immediately if ingested.

### 4.2 Most important symptoms and effects, both acute and delayed
- Refer to Section 11 - Toxicological Information.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to Physician**
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

**Section 5 - Firefighting Measures**

### 5.1 Extinguishing media

**Suitable Extinguishing Media**
- LARGE FIRES: Dry chemical, CO2, alcohol-resistant foam or water spray.
- SMALL FIRES: Dry chemical, CO2 or water spray.

**Unsuitable Extinguishing Media**
- No data available

### 5.2 Special hazards arising from the substance or mixture

**Unusual Fire and Explosion Hazards**
- Containers may explode when heated.
- Sodium hydroxide solutions can react exothermically with acids and some organic compounds such as Aldehydes.

**Hazardous Combustion Products**
- During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

### 5.3 Advice for firefighters
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Wear positive pressure self-contained breathing apparatus (SCBA).
- SMALL FIRES: Move containers from fire area if you can do it without risk.

**Section 6 - Accidental Release Measures**

### 6.1 Personal precautions, protective equipment and emergency procedures

**Personal Precautions**
- Ventilate enclosed areas. Do not walk through spilled material. Wear appropriate personal protective equipment, avoid direct contact. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Emergency Procedures

- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Do not get water inside container.

6.2 Environmental precautions

- Avoid run off to waterways and sewers.

6.3 Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Stop leak if you can do it without risk.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Dike to collect large liquid spills.

6.4 Reference to other sections

- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling

Handling

- Handle and open container with care. Use only with adequate ventilation. Use caution when combining with water; DO NOT add water to corrosive liquid. ALWAYS add corrosive liquid to water while stirring to prevent release of heat, steam and fumes.
- Wear appropriate personal protective equipment, avoid direct contact. Do not breathe mist, vapours and/or spray. Avoid contact with skin, eyes, and clothing. Do not ingest. Wash thoroughly with soap and water after handling and before eating, drinking, or using tobacco.

7.2 Conditions for safe storage, including any incompatibilities

Storage

- Keep container tightly closed. Store in a cool, dry, well-ventilated place. Store at 70°F. Do not freeze. Keep away from incompatible materials.

7.3 Specific end use(s)

- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Exposure Limits/Guidelines</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide (1310-73-2)</td>
<td>TWAs Not established</td>
<td>Not established</td>
<td>2 mg/m3 TWA</td>
</tr>
<tr>
<td>Ceiling</td>
<td>2 mg/m3 Ceiling</td>
<td>2 mg/m3 Ceiling</td>
<td>Not established</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Engineering Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory

- In case of insufficient ventilation, wear suitable respiratory equipment. Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear chemical splash safety goggles.

Skin/Body

- Wear appropriate gloves. Wear long sleeves and/or protective coveralls.
Environmental Exposure

Controls

• Follow best practice for site management and disposal of waste.

Key to abbreviations

ACGIH = American Conference of Governmental Industrial Hygiene
NIOSH = National Institute of Occupational Safety and Health
OSHA = Occupational Safety and Health Administration
TWA = Time-Weighted Averages are based on 8h/day, 40h/week exposures

Section 9 - Physical and Chemical Properties

9.1 Information on Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Physical Form</th>
<th>Appearance/Description</th>
<th>Colorless liquid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Data lacking</td>
<td>Odor Threshold</td>
<td>Colorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Data lacking</td>
<td></td>
<td>Data lacking</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>General Properties</th>
<th>Boiling Point</th>
<th>Melting Point/Freezing Point</th>
<th>Data lacking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decomposition Temperature</td>
<td>Data lacking</td>
<td>pH</td>
<td>Data lacking</td>
</tr>
<tr>
<td>Specific Gravity/Relative Density</td>
<td>Data lacking</td>
<td>Water Solubility</td>
<td>Soluble 100%</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Data lacking</td>
<td>Explosive Properties</td>
<td>Data lacking</td>
</tr>
<tr>
<td>Oxidizing Properties:</td>
<td>Data lacking</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Volatility</th>
<th>Vapor Pressure</th>
<th>Vapor Density</th>
<th>Data lacking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaporation Rate</td>
<td>Data lacking</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Flash Point</th>
<th>UEL</th>
<th>Data lacking</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEL</td>
<td>Data lacking</td>
<td>Autoignition</td>
<td>Data lacking</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Data lacking</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Environmental

Octanol/Water Partition coefficient | Data lacking |

9.2 Other Information

• No additional physical and chemical parameters noted.

Section 10: Stability and Reactivity

10.1 Reactivity

• No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

• Stable

10.3 Possibility of hazardous reactions

• Hazardous polymerization will not occur.

10.4 Conditions to avoid

• Excess heat. Avoid boiling of product.

10.5 Incompatible materials

• Do not mix with strong acids, organics, aluminum, tin, zinc and alloys containing them.
### 10.6 Hazardous decomposition products

- No data available.

### Section 11 - Toxicological Information

#### 11.1 Information on toxicological effects

<table>
<thead>
<tr>
<th>Components</th>
<th>1310-73-2</th>
<th>Irritation:</th>
<th>Mutagen:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide (2.88% TO 3.12%)</td>
<td></td>
<td>Eye-Rabbit • 1 % • Severe irritation; Skin-Rabbit • 500 mg 24 Hour(s) • Severe irritation;</td>
<td>Cytogenetic analysis • Unreported Route-Hamster • Lung (Somatic cell) • 10 mmol/L</td>
</tr>
<tr>
<td>Sodium chloride (0% TO 0.3%)</td>
<td>7647-14-5</td>
<td>Acute Toxicity: Ingestion/Oral-Rat LD50 • 3000 mg/kg;</td>
<td></td>
</tr>
</tbody>
</table>

**Acute Toxicity:**
- Ingestion/Oral-Rat LD50 • 3000 mg/kg
- Skin-Rabbit • 500 mg 24 Hour(s) • Mild irritation

**Mutagen:***
- Cytogenetic analysis
- Unreported Route-Hamster
- Lung (Somatic cell)

**Irritation:**
- Skin: Rabbit
  - 500 mg 24 Hour(s) • Severe irritation
- Eye: Rabbit
  - 100 mg 24 Hour(s) • Moderate irritation

**Multi-dose Toxicity:**
- Ingestion/Oral-Rat TDLo • 201.6 g/kg 6 Week(s)-Intermittent: Vascular BP elevation not characterized in autonomic section

**Mutagen:**
- Unscheduled DNA synthesis
- Ingestion/Oral-Rat • 16800 mg/kg 4 Week(s)-Continuous

**Reproductive:**
- Ingestion/Oral-Rat TDLo • 56400 mg/kg (5D pre-21D post): Reproductive Effects: Maternal Effects: Postpartum: Reproductive Effects: Effects on Newborn: Biochemical and metabolic
Potential Health Effects

Inhalation
- Acute (Immediate): May cause corrosive burns - irreversible damage.
- Chronic (Delayed): Repeated or prolonged exposure to corrosive fumes may cause bronchial irritation with chronic cough.

Skin
- Acute (Immediate): Causes severe skin burns and eye damage.
- Chronic (Delayed): Repeated or prolonged exposure to corrosive materials will cause dermatitis.

Eye
- Acute (Immediate): Causes serious eye damage.
- Chronic (Delayed): Repeated or prolonged exposure to corrosive materials or fumes may cause conjunctivitis.

Ingestion
- Acute (Immediate): May cause irreversible damage to mucous membranes.
- Chronic (Delayed): Repeated or prolonged exposure to corrosive materials or fumes may cause gastrointestinal disturbances.

Key to abbreviations
- LD = Lethal Dose
- TD = Toxic Dose

Section 12 - Ecological Information

12.1 Toxicity
- Material data lacking.

12.2 Persistence and degradability
- Material data lacking.

12.3 Bioaccumulative potential
- Material data lacking.

12.4 Mobility in Soil
- Material data lacking.

12.5 Results of PBT and vPvB assessment
- No PBT and vPvB assessment has been conducted.

12.6 Other adverse effects
- No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods
- Product waste: Dispose of content and/or container in accordance with local, regional, national, and/or
Packaging waste

- Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

### Section 14 - Transport Information

<table>
<thead>
<tr>
<th>14.1 UN number</th>
<th>14.2 UN proper shipping name</th>
<th>14.3 Transport hazard class(es)</th>
<th>14.4 Packing group</th>
<th>14.5 Environmental hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT UN1824</td>
<td>Sodium hydroxide solution</td>
<td>8</td>
<td>II</td>
<td>NDA</td>
</tr>
<tr>
<td>TDG UN1824</td>
<td>SODIUM HYDROXIDE SOLUTION</td>
<td>8</td>
<td>II</td>
<td>NDA</td>
</tr>
<tr>
<td>IMO/IMDG UN1824</td>
<td>SODIUM HYDROXIDE SOLUTION</td>
<td>8</td>
<td>II</td>
<td>NDA</td>
</tr>
<tr>
<td>IATA/ICAO UN1824</td>
<td>Sodium hydroxide solution</td>
<td>8</td>
<td>II</td>
<td>NDA</td>
</tr>
</tbody>
</table>

14.6 Special precautions for user
- None specified.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
- Data lacking.

### Section 15 - Regulatory Information

#### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**SARA Hazard Classifications**
- Acute

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>Canada DSL</th>
<th>Canada NDSL</th>
<th>EU EINECS</th>
<th>EU ELNICS</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium chloride</td>
<td>7647-14-5</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>1310-73-2</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

#### Environment

**Canada - CEPA - Priority Substances List**

- Sodium hydroxide: 1310-73-2
- Sodium chloride: 7647-14-5

**Environment**

- E (including 0.04% in aqueous solution, 0.08%, 0.4% in aqueous solution, 2%, 2.5%, 4% in aqueous solution, 5%, 10%, 16%, 20%, 40%, 50% in aqueous solution, 8.7N)
- Uncontrolled product according to WHMIS classification criteria

**Canada - WHMIS - Ingredient Disclosure List**

- Sodium hydroxide: 1310-73-2
- Sodium chloride: 7647-14-5

**Canada - WHMIS - Classifications of Substances**

- Sodium hydroxide: 1310-73-2

**Canada - WHMIS - Classifications of Substances**

- Sodium chloride: 7647-14-5

**Environment**

- Not Listed
### United States

#### Labor

**U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals**
- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

**U.S. - OSHA - Specifically Regulated Chemicals**
- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

#### Environment

**U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants**
- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

**U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities**
- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

**U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities**
- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs**
- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

**U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs**
- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

**U.S. - CERCLA/SARA - Section 313 - Emission Reporting**
- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

**U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing**
- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

#### United States - California

#### Environment

**U.S. - California - Proposition 65 - Carcinogens List**
- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

**U.S. - California - Proposition 65 - Developmental Toxicity**
- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed
# U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

# U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

# U.S. - California - Proposition 65 - Reproductive Toxicity - Female

- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

# U.S. - California - Proposition 65 - Reproductive Toxicity - Male

- Sodium hydroxide: 1310-73-2 Not Listed
- Sodium chloride: 7647-14-5 Not Listed

## 15.2 Chemical Safety Assessment

- No Chemical Safety Assessment has been carried out.

## Section 16 - Other Information

### Relevant Phrases (code & full text)

- H319 - Causes serious eye irritation

### Revision Date

- 04/August/2015

### Preparation Date

- 01/January/2014

### Disclaimer/Statement of Liability

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### Key to abbreviations

NDA = No data available