SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Product form : Mixture
Trade name : SurPass 3000™
Product code : SP3

1.2. Relevant identified uses of the substance or mixture and uses advised against
Use of the substance/mixture : Microlithography Adhesion Promoter / Priming Agent
Use of the substance/mixture : Industrial use

1.3. Details of the supplier of the safety data sheet
DisChem, Inc.
17295 Boot Jack Rd, Suite A
PO Box 267
Ridgway, PA 15853 USA
Tel: +1 (814) 772-6603
Fax: +1 (814) 772-09476
E-Mail: info@opticalchemistries.com
Web Site: www.discheminc.com

1.4. Emergency telephone number
Emergency number : Chemtrec (800) 424-9300
                   Chemtrec (Outside USA) +1 (703) 527-3887
                   (Chemtrec CCN 6727)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
GHS-US classification
Not classified

2.2. Label elements
GHS-US labelling
No labeling applicable

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS-US)
No data available

SECTION 3: Composition/information on ingredients

3.1. Substance
Not applicable
Full text of H-phrases: see section 16

3.2. Mixture

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol</td>
<td>(CAS No) 107-21-1</td>
<td>&lt; 1</td>
<td>Acute Tox. 4 (Oral), H302 STOT RE 2, H373</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl)._alpha.-[4-[1,1,3,3-</td>
<td>(CAS No) 9002-93-1</td>
<td>&lt; 1</td>
<td>Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318</td>
</tr>
<tr>
<td>tetramethylbutyl]phenyl]-.omega.-hydroxy-</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

4.1. Description of first aid measures
First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation: Ensure fresh air breathing. Allow the victim to rest. In all cases of doubt, or if victim feels unwell seek medical attention.

First-aid measures after skin contact: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. Obtain medical attention if pain, blinking or redness persist.

First-aid measures after ingestion: If swallowed, rinse mouth with water (only if the person is conscious). Obtain emergency medical attention. Do NOT induce vomiting unless directed to do so by a physician. Call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed
Symptoms/injuries after inhalation: Inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.
Symptoms/injuries after skin contact: Prolonged and repeated contact may cause dermatitis. Causes skin irritation.
Symptoms/injuries after eye contact: In fine dispersion/spraying/misting: May cause eye irritation.
Symptoms/injuries after ingestion: Can occur: gastrointestinal disturbance. May cause damage to kidneys if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed
No additional information available

SECTION 5: Firefighting measures
5.1. Extinguishing media

5.2. Special hazards arising from the substance or mixture
No additional information available

5.3. Advice for firefighters
Firefighting instructions: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protective equipment for firefighters: Do not enter fire area without proper protective equipment, including respiratory protection.
Other information: Hazardous decomposition products may be released during prolonged heating like smoke, carbon monoxide and dioxide, nitrogen oxides (NO₂).

SECTION 6: Accidental release measures
6.1. Personal precautions, protective equipment and emergency procedures
General measures: Ensure adequate ventilation. Stop leak if safe to do so. Avoid skin and eye contact. Avoid inhalation of product.

6.1.1. For non-emergency personnel
Protective equipment: Wear suitable protective clothing. For further information refer to section 8: Exposure-controls/personal protection.
Emergency procedures: Evacuate unnecessary personnel.

6.1.2. For emergency responders
Protective equipment: Equip cleanup crew with proper protection.
Emergency procedures: The low volatility of this product does not require ventilation. However depending on the condition an adequate ventilation might be required.

6.2. Environmental precautions
Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up
Methods for cleaning up: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Gather the product and place it in a spare container that has been suitably labelled. Store away from other materials. Ensure all national/local regulations are observed. Local authorities should be advised if significant spillages cannot be contained. Dispose in a safe manner in accordance with local/national regulations.

6.4. Reference to other sections
See Heading 8. Exposure controls and personal protection.
SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling:

Read label before use. Do not handle until all safety precautions have been read and understood. Provide good ventilation in process area to prevent formation of vapour. Avoid all eye and skin contact and do not breathe vapour and mist. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. When not in use, keep containers tightly closed.

Hygiene measures:

Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practices. Contaminated work clothing should not be allowed out of the workplace. Separate working clothes from town clothes. Launder separately.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures:

A washing facility/water for eye and skin cleaning purposes should be present. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of mists and/or vapors below the recommended exposure limits.

Storage conditions:

Keep out of reach of children. Keep only in the original container in a cool well ventilated place. Keep container closed when not in use. Protect containers against physical damage. Store containers in an upright manner to prevent leakage.

Incompatible materials:

Strong oxidizing agents.

Storage temperature:

10 to 90 °C (50 to 194 °F)

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Ethylene glycol (107-21-1)</th>
<th>USA ACGIH</th>
<th>ACGIH Ceiling (mg/m³)</th>
<th>100 mg/m³</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.2. Exposure controls

Appropriate engineering controls:

Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation.

Personal protective equipment:

Avoid all unnecessary exposure. Protective goggles. Gloves. Protective clothing. For certain operations, additional Personal Protection Equipment (PPE) may be required.

Hand protection:


Eye protection:

Chemical goggles or face shield.

Skin and body protection:

Wear protective clothing.

Respiratory protection:

In fine dispersion/spraying/misting: Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134).

Environmental exposure controls:

Avoid release to the environment.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Transparent.</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless.</td>
</tr>
<tr>
<td>Odour</td>
<td>Odourless.</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>3.0 (Approximately)</td>
</tr>
<tr>
<td>Relative evaporation rate (butyl acetate=1)</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point</td>
<td>Similar to water</td>
</tr>
<tr>
<td>Freezing point</td>
<td>0 °C Similar to water</td>
</tr>
<tr>
<td>Boiling point</td>
<td>100 °C Similar to water</td>
</tr>
</tbody>
</table>
SurPass 3000™
Safety Data Sheet
according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Flash point : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : No data available
Vapour pressure : Similar to water
Relative vapour density at 20 °C : No data available
Refractive Index : 1.3340 - 1.3350
Density : 1.0010 - 1.0050 Specific Gravity
Solubility : No data available
Log Pow : No data available
Log Kow : No data available
Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : No data available

9.2. Other information
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
No additional information available

10.2. Chemical stability
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
Not established.

10.4. Conditions to avoid
Avoid temperature below 10 °C for application. Do not expose to heat.

10.5. Incompatible materials
Strong oxidizing agents.

10.6. Hazardous decomposition products
Hazardous decomposition products may be released during prolonged heating like smokes, carbon monoxide and dioxide. Nitrogen oxides (NOx).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified
(Based on available data, the classification criteria are not met)

Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-omega.-hydroxy- (9002-93-1)
LD50 oral rat 1800 mg/kg
ATE CLP (oral) 1800.000 mg/kg bodyweight

Ethylene glycol (107-21-1)
LD50 oral rat 4000 mg/kg
ATE CLP (oral) 500.000 mg/kg

Skin corrosion/irritation : Not classified
(Based on available data, the classification criteria are not met)
pH: 2.5 Approximately

Serious eye damage/irritation : Not classified
(Based on available data, the classification criteria are not met)
pH: 2.5 Approximately

Respiratory or skin sensitisation : Not classified
(Based on available data, the classification criteria are not met)
Germ cell mutagenicity: Not classified (Based on available data, the classification criteria are not met)

Carcinogenicity: Not classified (Based on available data, the classification criteria are not met)

Reproductive toxicity: Not classified (Based on available data, the classification criteria are not met)

Specific target organ toxicity (single exposure): Not classified (Based on available data, the classification criteria are not met)

Specific target organ toxicity (repeated exposure): Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard: Not classified (Based on available data, the classification criteria are not met)

Symptoms/injuries after inhalation: Inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

Symptoms/injuries after skin contact: Prolonged and repeated contact may cause dermatitis. Causes skin irritation.

Symptoms/injuries after eye contact: In fine dispersion/spraying/misting: May cause eye irritation.

Symptoms/injuries after ingestion: Can occur: gastrointestinal disturbance. May cause damage to kidneys if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general: When released into the soil, this material is expected to biodegrade. When released into water, this material is expected to biodegrade. This material is not expected to bioaccumulate. No data available specifically to epichlorohydrin modified aziridine polymer solution.

<table>
<thead>
<tr>
<th>Ethylene glycol (107-21-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LC50 fishes 1</td>
</tr>
<tr>
<td>EC50 Daphnia 1</td>
</tr>
<tr>
<td>EC50 other aquatic organisms 1</td>
</tr>
<tr>
<td>LC50 fish 2</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

SurPass 3000™

Persistence and degradability: Not established.

12.3. Bioaccumulative potential

SurPass 3000DX™ (SurPass 3000 10X Concentrate)

Bioaccumulative potential: Not established.

<table>
<thead>
<tr>
<th>Ethylene glycol (107-21-1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Log Pow</td>
</tr>
</tbody>
</table>

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information: Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations: Dispose in a safe manner in accordance with local/national regulations. It is the responsibility of the user to determine if disposal material is hazardous according to federal, state and local regulations.

Additional information: Do not re-use empty containers. Ensure all national/local regulations are observed.

Ecology - waste materials: Avoid release to the environment.

SECTION 14: Transport information

In accordance with DOT

No dangerous good in sense of transport regulations
## Additional information

Other information : No supplementary information available.

### ADR

Transport document description : No additional information available

### Transport by sea

No additional information available

### Air transport

No additional information available

### Export / import description

Cationic organic surface active agent. Mixture. HS# 3402.12.00.0000

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol (107-21-1)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-omega.-hydroxy- (9002-93-1)</td>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
</tr>
</tbody>
</table>

### ADR

Transport document description : No additional information available

### Transport by sea

No additional information available

### Air transport

No additional information available

### Export / import description

Cationic organic surface active agent. Mixture. HS# 3402.12.00.0000

## 15.2. International regulations

### CANADA

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol (107-21-1)</td>
<td>Listed on the Canadian DSL (Domestic Substances List) inventory</td>
</tr>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-omega.-hydroxy- (9002-93-1)</td>
<td>Listed on the Canadian DSL (Domestic Substances List) inventory</td>
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</table>

### EU-Regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylene glycol (107-21-1)</td>
<td>Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) substances.</td>
</tr>
</tbody>
</table>

## Classification according to Regulation (EC) No. 1272/2008 [CLP]

Classification according to Directive 67/548/EEC or 1999/45/EC

Not classified

### 15.2. National regulations

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-omega.-hydroxy- (9002-93-1)</td>
<td>Listed on the AICS (the Australian Inventory of Chemical Substances)</td>
</tr>
<tr>
<td></td>
<td>Listed on Inventory of Existing Chemical Substances (IECSC)</td>
</tr>
<tr>
<td></td>
<td>Listed on the Japanese ENCS (Existing &amp; New Chemicals Substances) inventory.</td>
</tr>
<tr>
<td></td>
<td>Listed on the Korean ECL (Existing Chemical List) inventory.</td>
</tr>
<tr>
<td></td>
<td>Listed on New Zealand - Inventory of Chemicals (NZIoC)</td>
</tr>
<tr>
<td></td>
<td>Listed on Inventory of Chemicals and Chemical Substances (PICCS)</td>
</tr>
<tr>
<td></td>
<td>Pollutant Release and Transfer Register Law (PRTR Law)</td>
</tr>
<tr>
<td></td>
<td>Listed on the Canadian Ingredient Disclosure List</td>
</tr>
</tbody>
</table>
Ethylene glycol (107-21-1)

Listed on the AICS (the Australian Inventory of Chemical Substances)
Listed on Inventory of Existing Chemical Substances (IECSC)
Listed on the Japanese ENCS (Existing & New Chemicals Substances) inventory.
Listed on the Korean ECL (Existing Chemical List) inventory.
Listed on New Zealand - Inventory of Chemicals (NZIoC)
Listed on Inventory of Chemicals and Chemical Substances (PICCS)
Listed on the Canadian Ingredient Disclosure List

15.3. US State regulations

No additional information available

SECTION 16: Other information

Indication of changes : according to the federal final rule of hazard communication revised on 2012 (HazCom 2012).
Other information : None.

Full text of H-phrases: see section 16:

| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4
|--------------------|--------------------------------|
| Eye Dam. 1         | Serious eye damage/eye irritation, Category 1
| Skin Irrit. 2      | skin corrosion/irritation Category 2
| STOT RE 2          | Specific target organ toxicity (repeated exposure) Category 2
| H302               | Harmful if swallowed
| H315               | Causes skin irritation
| H318               | Causes serious eye damage
| H373               | May cause damage to organs through prolonged or repeated exposure

NFPA health hazard : 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard : 0 - Materials that will not burn.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.

HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability : 0 Minimal Hazard
Physical : 0 Minimal Hazard

SDS US (GHS HazCom 2012)

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