

**DisChem**CHEMISTRY FOR
ADVANCED LITHOGRAPHY**SurPass 3000™****Safety Data Sheet**

according to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

Date of issue: 23-March-2020 Version: 2003-EN

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****SAFETY HANDLING INFORMATION HAZARD STATEMENT**

H316 Causes mild skin irritation (2B)

H320 Causes eye irritation (2A)

PRECAUTIONARY STATEMENT

P280 Wear protective gloves/ eye protection/ face protection.

P302+P352 If on skin: Wash with plenty of soap and water.

P304+P340 If inhaled: Remove victim to fresh air and keep at rest in a sitting position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical attention

P264 Wash thoroughly after handling

HMIS Classification / NFPA Rating

Health hazard: 1, Flammability / Fire: 0, Physical hazards: 0

2.2. Label elements**GHS-US labelling****Signal Word**

Caution

2.3. Other hazards

No additional information available

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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

| Name | Product identifier | % | GHS-US classification |
|---|--------------------|------|--|
| Ethylene glycol | (CAS No) 107-21-1 | < 1 | Acute Tox. 4 (Oral), H302 STOT RE 2, H373 |
| Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- | (CAS No) 9002-93-1 | < 1 | Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 |
| Polyethylenimine, branched | (CAS No) 9002-98-6 | 2-3 | Acute Tox. 4; Eye Irrit. 2A; Skin Sens. 1; Aquatic Acute 2; Aquatic Chronic 2; H302, H319, H317, H401, H411 |
| Guanidium chloride | (CAS No) 50-01-1 | < 1 | Acute Tox. 4, (Oral), H302 Acute Tox 4, (Inhalation) H332 Skin irrit. 2, H315 Eye irrit 2, H319 |
| Water | (CAS No) 7732-18-5 | > 97 | |

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 | : Assure 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

| | |
|------------------------------|--|
| Suitable extinguishing media | : Alcohol resistant foam. Dry powder. Carbon dioxide. Water spray. Sand. |
|------------------------------|--|

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 smokes, carbon monoxide and dioxide, nitrogen oxides (NO _x). |

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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

Ethylene glycol (107-21-1)

USA ACGIH

ACGIH Ceiling (mg/m³)

100 mg/m³

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.

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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 : Wear protective gloves. neoprene. rubber gloves.
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

Physical state : Liquid
Appearance : Transparent.
Colour : Colourless.
odour : Odourless.
Odour threshold : No data available
pH : 3.0 (Approximately)
Relative evaporation rate (butyl acetate=1) : No data available
Melting point : Similar to water
Freezing point : 0 °C Similar to water
Boiling point : 100 °C Similar to water
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.

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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 (NO_x).

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.

| Ethylene glycol (107-21-1) | |
|--------------------------------|--|
| LC50 fishes 1 | 41000 mg/l (Exposure time: 96 h - Species: Oncorhynchus mykiss) |
| EC50 Daphnia 1 | 46300 mg/l (Exposure time: 48 h - Species: Daphnia magna) |
| EC50 other aquatic organisms 1 | 6500 - 13000 mg/l (Exposure time: 96 h - Species: Pseudokirchneriella subcapitata) |

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Ethylene glycol (107-21-1)

| | |
|-------------|--|
| LC50 fish 2 | 14 - 18 ml/l (Exposure time: 96 h - Species: Oncorhynchus mykiss [static]) |
|-------------|--|

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. |
|---------------------------|------------------|

Ethylene glycol (107-21-1)

| | |
|---------|-------|
| Log Pow | -1.93 |
|---------|-------|

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

Land transport

In accordance with DOT: Not regulated / non-hazardous

Air transport

IATA: Not regulated / non-hazardous

Ocean transport

IATA: Not regulated / non-hazardous

Additional information

Export / import description

Cationic organic surface active agent. Mixture. HS# 3402.12.00.0000

SECTION 15: Regulatory information

15.1. US Federal regulations

Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- (9002-93-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Ethylene glycol (107-21-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

| | |
|--------------------------|--|
| EPA TSCA Regulatory Flag | Y2 - Y2 - indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule. |
|--------------------------|--|

| | |
|---------------------------------------|-------|
| SARA Section 313 - Emission Reporting | 1.0 % |
|---------------------------------------|-------|

15.2. International regulations

CANADA

Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- (9002-93-1)

Listed on the Canadian DSL (Domestic Substances List) inventory.

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Ethylene glycol (107-21-1)

Listed on the Canadian DSL (Domestic Substances List) inventory.

WHMIS Classification

Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects
Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

EU-Regulations

Ethylene glycol (107-21-1)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances) substances.

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

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

Not classified

15.2.2. National regulations

Poly(oxy-1,2-ethanediyl), .alpha.-[4-(1,1,3,3-tetramethylbutyl)phenyl]-.omega.-hydroxy- (9002-93-1)

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)
Pollutant Release and Transfer Register Law (PRTR Law)
Listed on the Canadian Ingredient Disclosure List

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:

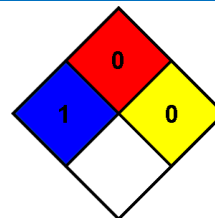
| | |
|---------------------|---|
| Acute Tox. 4 (Oral) | Acute toxicity (oral), Category 4 |
| Eye Dam. 1 | Serious eye damage/eye irritation, Category 1 |
| Skin Irrit. 2 | skin corrosion/irritation Category 2 |
| STOT RE 2 | Specific target organ toxicity (repeated exposure) Category 2 |
| H302 |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

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| | |
|--------------------|---|
| 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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