

Safety Data Sheet

acc. to OSHA HCS

Printing date 02/24/2021

Reviewed on 02/24/2021

1 Identification

- **Product identifier**
- **Trade name:** PriElex® SU-8 C1
- **Product number:** J123345
- **Application of the substance / the mixture** Photoresist
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
 Kayaku Advanced Materials, Inc.
 200 Flanders Road
 Westborough, MA 01581
 Tel: (617) 965-5511
 Fax: (617) 965-5818
- **Information department:**
 Product Safety
 Email: productsafety@kayakuAM.com
- **Emergency telephone number:**
 Kayaku Advanced Materials : 617-965-5511
 Chemtrec USA Emergency : 800-424-9300
 Chemtrec International Emergency : 703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02 Flame

Flam. Liq. 3 H226 Flammable liquid and vapor.



GHS08 Health hazard

STOT RE 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS05 Corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H332 Harmful if inhaled.

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H336 May cause drowsiness or dizziness.

- **Label elements**

- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

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· Hazard pictograms



· Signal word Danger

· Hazard-determining components of labeling:

gamma-Butyrolactone
 Proprietary Epoxy Resin
 Proprietary Resin
 1-Methoxy-2-propanol acetate

· Hazard statements

H226 Flammable liquid and vapor.
 H332 Harmful if inhaled.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H317 May cause an allergic skin reaction.
 H336 May cause drowsiness or dizziness.
 H373 May cause damage to organs through prolonged or repeated exposure.

· Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P301+P310 If swallowed: Immediately call a poison center/doctor.
 P302+P352 If on skin: Wash with plenty of soap and water.
 P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep 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.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P337+P313 If eye irritation persists: Get medical advice/attention.
 P370+P378 In case of fire: Use to extinguish: Alcohol resistant foam, Fire-extinguishing powder, Carbon dioxide.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· Classification system:

· NFPA ratings (scale 0 - 4)



· HMIS-ratings (scale 0 - 4)



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- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

| | | |
|----------|---|--------|
| 108-65-6 | 1-Methoxy-2-propanol acetate ⚠ Flam. Liq. 3, H226; ⚠ STOT SE 3, H336 | 20-55% |
| 96-48-0 | gamma-Butyrolactone ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; STOT SE 3, H336 | 3-30% |
| | Proprietary Epoxy Resin ⚠ STOT RE 2, H373; ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; Aquatic Chronic 4, H413 | 10-25% |
| | Proprietary Resin ⚠ Eye Irrit. 2A, H319; Skin Sens. 1B, H317 | 10-25% |
| | Proprietary Photoacid Initiator ⚠ Aquatic Chronic 2, H411; ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332 | <1% |

4 First-aid measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
Inhalation is not an expected route of exposure. If respiratory irritation or distress occurs remove victim to fresh air. Seek medical attention if respiratory irritation or distress continues.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Wash eyes immediately with a large amount of water or normal saline, occasionally lifting upper and lower eye lids until no evidence of chemical remains (about 20 minutes). Remove contact lenses if present and easy to remove. Seek immediate medical attention.
- **After swallowing:** Do not induce vomiting; immediately call a doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** Treat symptomatically.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Alcohol resistant foam
Fire-extinguishing powder
Carbon dioxide

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- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Wear SCBA.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 - Ensure adequate ventilation
 - Keep away from ignition sources
 - Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow product to reach sewage system or any drains.
- **Methods and material for containment and cleaning up:**
 - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 - Ensure adequate ventilation.
- **Reference to other sections**
 - See Section 7 for information on safe handling.
 - See Section 8 for information on personal protection equipment.
 - See Section 13 for disposal information.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
 - Ensure good ventilation/exhaust at the workplace.
 - Prevent formation of aerosols.
 - Keep away from heat and direct sunlight.
- **Information about protection against explosions and fires:**
 - Protect against electrostatic charges.
 - Use explosion-proof apparatus / fittings and spark-proof tools.
 - Protect from heat.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:** Store in a cool location.
- **Information about storage in one common storage facility:**
 - Do not store together with oxidizing and acidic materials.
 - Do not store together with alkalis (caustic solutions).
- **Further information about storage conditions:**
 - Keep container well-sealed in cool, dry location.
 - Protect from heat and direct sunlight.
 - Store receptacle in a well ventilated area.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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· Control parameters

· Components with limit values that require monitoring at the workplace:

108-65-6 1-Methoxy-2-propanol acetate
WEEL Long-term value: 50 ppm

 · **Additional information:** The lists that were valid during the creation were used as basis.

· Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:

Keep away from food and beverages.

Immediately remove all soiled and contaminated clothing.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

· Respiratory equipment:

In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.

· Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

 · **Material of gloves** Nitrile rubber, NBR

 · **Penetration time of glove material** Contact glove manufacture for break-through time.

· Eye protection:



Tightly sealed goggles

9 Physical and chemical properties

· Information on basic physical and chemical properties

· General Information

· Appearance:

Form:

Fluid

Color:

Clear to light yellow

 · **Odor:**

Characteristic

 · **Odor threshold:**

Not determined.

 · **pH-value:**

Not determined.

· Change in condition

Melting point/Melting range:

Undetermined.

Boiling point/Boiling range:

105 °C (221 °F)

 · **Flash point:**

Not applicable.

 · **Flammability (solid, gaseous):**

Not applicable.

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| | |
|---|---|
| · Ignition temperature: | 315 °C (599 °F) |
| · Decomposition temperature: | Not determined. |
| · Auto igniting: | Product is not selfigniting. |
| · Danger of explosion: | Product does not present an explosion hazard. |
| · Explosion limits: | |
| Lower: | 1.5 Vol % |
| Upper: | 15.6 Vol % |
| · Vapor pressure at 20 °C (68 °F): | 5 hPa (3.8 mm Hg) |
| · Density: | See other information |
| · Relative density | Not determined. |
| · Vapor density | Not determined. |
| · Evaporation rate | 1.6-2.3 (BuAc=1) |
| · Solubility in / Miscibility with Water: | Water miscible No |
| · Partition coefficient (n-octanol/water): | Not determined. |
| · Viscosity: | |
| Dynamic: | Not determined. |
| Kinematic: | Not determined. |
| · Solvent content: | |
| Organic solvents: | 54.9 % |
| VOC content: | 54.9 % |
| Solids content: | 24.6 % |
| · Other information | No further relevant information available. |

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability** Stable
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid**
 Heat, flames and sparks. Extremes of temperature and direct sunlight.
 Contact with incompatible materials.
- **Incompatible materials:** Strong Oxidizing Agents, Strong Acids, Strong Bases
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

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11 Toxicological information

· Information on toxicological effects

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

Proprietary Resin

| | | |
|------|------|-------------------|
| Oral | LD50 | >2000 mg/kg (Rat) |
|------|------|-------------------|

108-65-6 1-Methoxy-2-propanol acetate

| | | |
|------------|----------|-------------------|
| Oral | LD50 | 8532 mg/kg (Rat) |
| Dermal | LD50 | >5000 mg/kg (Rat) |
| Inhalative | LC50/6 h | 4345 ppm (Rat) |

96-48-0 gamma-Butyrolactone

| | | |
|------------|----------|------------------|
| Oral | LD50 | 1540 mg/kg (Rat) |
| Dermal | LD50 | 5000 mg/kg (gui) |
| Inhalative | LC50/4 h | >5.1 mg/l (Rat) |

Proprietary Epoxy Resin

| | | |
|------|---------------------------|---------------------|
| Oral | NOEL 28 day repeated dose | 250 mg/kg/day (Rat) |
|------|---------------------------|---------------------|

· Primary irritant effect:

· on the skin: May cause skin irritation

· on the eye: Irritating effect.

· Sensitization: Sensitization possible through skin contact.

· Experience with humans: Target Organs: Central nervous system, kidney, liver, lungs

· Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:
 Harmful
 Irritant

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

| | |
|-----------------------------|---|
| 96-48-0 gamma-Butyrolactone | 3 |
|-----------------------------|---|

· NTP (National Toxicology Program)

None of the ingredients are listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

12 Ecological information

· Toxicity

· Aquatic toxicity:

No further relevant information available.

108-65-6 1-Methoxy-2-propanol acetate

| | |
|---------------|---|
| ErC50 96 hour | >1000 mg/l (Pseudokirchneriella subcapitata (alga)) |
| LC50 | 408-500 mg/l (daphnia magna) |
| | 100-180 mg/l (rainbow trout (Oncorhynchus mykiss)) |

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96-48-0 gamma-Butyrolactone


| | |
|-----------|--------------------------------|
| EC50/17 h | >10000 mg/l (bacterium) |
| EC50/48 h | >500 mg/l (daphnia magna) |
| EC50/72 h | 360 mg/l (green algae) |
| LC50/96 h | >220 - <460 mg/l (golden orfe) |

- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Not known to be hazardous to water.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of as regular garbage/trash. Do not allow product to reach sewage system.
Disposal must be made in accordance with Federal, State, and Local regulations.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made in accordance with Federal, State, and Local regulations.

14 Transport information

- | | |
|--|----------------------------------|
| <ul style="list-style-type: none"> · UN-Number · DOT, ADR, IMDG, IATA | UN1866 |
| <ul style="list-style-type: none"> · UN proper shipping name · DOT, ADR · IMDG, IATA | Resin solution RESIN SOLUTION |
| <ul style="list-style-type: none"> · Transport hazard class(es) · DOT | |
|  | |
| <ul style="list-style-type: none"> · Class · Label | 3 Flammable liquids 3 |

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· ADR, IMDG, IATA



| | |
|---------|---------------------|
| · Class | 3 Flammable liquids |
| · Label | 3 |

| | |
|------------------------|-----|
| · Packing group | |
| · DOT, ADR, IMDG, IATA | III |

| | |
|--------------------------|----|
| · Environmental hazards: | |
| · Marine pollutant: | No |

| | |
|---|----------------------------|
| · Special precautions for user | Warning: Flammable liquids |
| · Hazard identification number (Kemler code): | 30 |
| · EMS Number: | F-E,S-E |

| | |
|---|-----------------|
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | Not applicable. |
|---|-----------------|

| | |
|--------------------------|--------------------------------|
| · UN "Model Regulation": | UN1866, Resin solution, 3, III |
|--------------------------|--------------------------------|

15 Regulatory information

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

· Sara

· Section 355 (extremely hazardous substances):

None of the ingredients are listed.

· Section 313 (Specific toxic chemical listings):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act): All components of this product are on the TSCA 8(b) Inventory.

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients are listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

· Carcinogenic categories

· EPA (Environmental Protection Agency)

None of the ingredients are listed.

· TLV (Threshold Limit Value)

None of the ingredients are listed.

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· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed.

- **California SCAQMD Rule 443.1 VOC's:** No information available.
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS02 GHS05 GHS07 GHS08

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**

gamma-Butyrolactone
 Proprietary Epoxy Resin
 Proprietary Resin
 1-Methoxy-2-propanol acetate

· Hazard statements

H226 Flammable liquid and vapor.
 H332 Harmful if inhaled.
 H315 Causes skin irritation.
 H318 Causes serious eye damage.
 H317 May cause an allergic skin reaction.
 H336 May cause drowsiness or dizziness.
 H373 May cause damage to organs through prolonged or repeated exposure.

· Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P261 Avoid breathing dust/fume/gas/mist/vapors/spray
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P301+P310 If swallowed: Immediately call a poison center/doctor.
 P302+P352 If on skin: Wash with plenty of soap and water.
 P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep 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.
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P337+P313 If eye irritation persists: Get medical advice/attention.
 P370+P378 In case of fire: Use to extinguish: Alcohol resistant foam, Fire-extinguishing powder, Carbon dioxide.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Product safety department

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· Contact: Tom Cole, EHS Manager (tcole@kayakuAM.com)**· Revision History:***The hazard classification and precautionary statements for the mixture in Section 2 were revised.***· Date of preparation / last revision** 02/24/2021 / 2**· Abbreviations and acronyms:***ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)**IMDG: International Maritime Code for Dangerous Goods**DOT: US Department of Transportation**IATA: International Air Transport Association**EINECS: European Inventory of Existing Commercial Chemical Substances**ELINCS: European List of Notified Chemical Substances**CAS: Chemical Abstracts Service (division of the American Chemical Society)**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)**VOC: Volatile Organic Compounds (USA, EU)**LC50: Lethal concentration, 50 percent**LD50: Lethal dose, 50 percent**PBT: Persistent, Bioaccumulative and Toxic**vPvB: very Persistent and very Bioaccumulative**NIOSH: National Institute for Occupational Safety**OSHA: Occupational Safety & Health**TLV: Threshold Limit Value**PEL: Permissible Exposure Limit**REL: Recommended Exposure Limit**Flam. Liq. 3: Flammable liquids – Category 3**Acute Tox. 4: Acute toxicity – Category 4**Skin Irrit. 2: Skin corrosion/irritation – Category 2**Eye Dam. 1: Serious eye damage/eye irritation – Category 1**Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A**Skin Sens. 1: Skin sensitisation – Category 1**Skin Sens. 1B: Skin sensitisation – Category 1B**STOT SE 3: Specific target organ toxicity (single exposure) – Category 3**STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2**Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2**Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4*