

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 13.10.2021

Version number 6

Revision: 13.10.2021

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

· **1.1 Product identifier**

· **Trade name:** XP MicroSpray™ SU-8 Photoresist Spray

· **Article number:** MSS0014

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
 No further relevant information available.

· **Sector of Use** SU16 Manufacture of computer, electronic and optical products, electrical equipment

· **Application of the substance / the mixture** Photoresist

· **1.3 Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

Manufacturer:

Kayaku Advanced Materials

200 Flanders Road

Westborough, MA 01581

Telephone: (617) 965-5511

Fax: (617) 965-5818

Importer:

A-Gas Electronic Materials

Unit 3, IO Centre

Swift Valley

Rugby, Warwickshire

CV21 1TW, UK

Tel: +44-0-1788-537535

Fax: +44-0-1788-535835

Website: www.agasem.com

Email: customerservice.em@agas.com

· **Further information obtainable from:**

Product Safety

Email: productsafety@kayakuAM.com

· **1.4 Emergency telephone number:**

Kayaku Advanced Materials : 617-965-5511

Chemtrec USA Emergency : 800-424-9300 (24 hr)

Chemtrec International Emergency : 703-527-3887 (24 hr)

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



flame

Aerosol 1 H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.



Acute Tox. 4

H332

Harmful if inhaled.

Skin Irrit. 2

H315

Causes skin irritation.

Eye Irrit. 2

H319

Causes serious eye irritation.

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

STOT SE 3 H336 May cause drowsiness or dizziness.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008

The product is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS02 GHS07

Signal word Danger

Hazard-determining components of labelling:

Epoxy resin

1-Methoxy-2-propanol acetate

Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1)

Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-, (OC-6-11)-hexafluoroantimonate (1-) (1:2)

Hazard statements

H222-H229 Extremely flammable aerosol. Pressurised container: May burst if heated.

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H336 May cause drowsiness or dizziness.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P211 Do not spray on an open flame or other ignition source.

P251 Do not pierce or burn, even after use.

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P273 Avoid release to the environment.

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 victim to fresh air and keep at rest in a 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.

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 alcohol resistant foam to extinguish.

P370+P378 In case of fire: Use fire-extinguishing powder to extinguish.

P370+P378 In case of fire: Use carbon dioxide to extinguish.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

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 · **vPvB:** Not applicable.

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SECTION 3: Composition/information on ingredients

 · **3.2 Chemical characterisation: Mixtures**

 · **Description:** Mixture of substances listed below with nonhazardous additions.

 · **Dangerous components:**

CAS: 108-65-6 EINECS: 203-603-9	1-Methoxy-2-propanol acetate Flam. Liq. 3, H226; STOT SE 3, H336	50-70%
	Epoxy resin Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	20-30%
CAS: 115-10-6 EINECS: 204-065-8	dimethyl ether Flam. Gas 1, H220; Press. Gas (Comp.), H280	10-25%
CAS: 71449-78-0	Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1) Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Sens. 1, H317	<1%
CAS: 108-32-7 EINECS: 203-572-1	Propylene carbonate Skin Irrit. 2, H315; Eye Irrit. 2, H319	1-5%
CAS: 89452-37-9	Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-, (OC-6-11)-hexafluoroantimonate (1-) (1:2) Aquatic Acute 1, H400; Aquatic Chronic 1, H410; Skin Sens. 1, H317	<1%

 · **Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

 · **4.1 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:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

 · **After skin contact:**

Immediately wash with water and soap and rinse thoroughly.

In cases of frost bites, rinse with plenty of water. Do not remove clothing.

 · **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:** If symptoms persist consult doctor.

 · **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.

 · **4.3 Indication of any immediate medical attention and special treatment needed** Treat symptomatically.

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SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
 - Carbon dioxide
 - Fire-extinguishing powder
 - Alcohol resistant foam
- **For safety reasons unsuitable extinguishing agents:** Water with full jet
- **5.2 Special hazards arising from the substance or mixture**

Containers may explode due to pressure increase when container is exposed to extreme heat. Vapors may travel a considerable distance to a source of ignition and flash back along vapor trail.
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources.
- **6.2 Environmental precautions:**

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents
- **6.4 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.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

Ensure good ventilation/exhaust at the workplace.

Keep away from heat and direct sunlight.

Open and handle receptacle with care.
- **Information about fire - and explosion protection:**

Do not spray onto a naked flame or any incandescent material.

Keep ignition sources away - Do not smoke.

Use explosion-proof apparatus / fittings and spark-proof tools.

Protect against electrostatic charges.

Pressurised container: protect from sunlight and do not expose to temperatures exceeding 50°C, i.e. electric lights. Do not pierce or burn, even after use.

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- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:**
 Store in a cool location.
 Observe official regulations on storing packagings with pressurised containers.
- **Information about storage in one common storage facility:**
 Do not store together with alkalis (caustic solutions).
 Do not store together with oxidising and acidic materials.
- **Further information about storage conditions:**
 Store in cool, dry conditions in well sealed containers.
 Protect from heat and direct sunlight.
 Store receptacle in a well ventilated area.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Additional information about design of technical facilities:** No further data; see item 7.

 · **Ingredients with limit values that require monitoring at the workplace:**

108-65-6 1-Methoxy-2-propanol acetate	
WEL	Short-term value: 548 mg/m ³ , 100 ppm
	Long-term value: 274 mg/m ³ , 50 ppm
	Sk
115-10-6 dimethyl ether	
WEL	Short-term value: 958 mg/m ³ , 500 ppm
	Long-term value: 766 mg/m ³ , 400 ppm

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

- **8.2 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 protection:**
 In case of low exposure use cartridge respirator. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

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

- **Material of gloves**
 Butyl rubber, BR
 Nitrile rubber, NBR

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· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	Aerosol
Colour:	Amber coloured
Odour:	Ester-like
Odour threshold:	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	-24 °C

· **Flash point:** -42 °C

· **Flammability (solid, gas):** Not applicable.

· **Ignition temperature:** 235 °C

· **Decomposition temperature:** Not determined.

· **Auto-ignition temperature:** Product is not selfigniting.

· **Explosive properties:** Product is not explosive. However, formation of explosive air/vapour mixtures are possible.

· **Explosion limits:**

Lower:	1.5 Vol %
Upper:	18.6 Vol %

· **Vapour pressure at 20 °C:** 5200 hPa

Density:	Not determined
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	0.39 (BuAc=1)

· **Solubility in / Miscibility with water:** Not miscible or difficult to mix.

· **Partition coefficient: n-octanol/water:** Not determined.

· **Viscosity:**

Dynamic: Not determined.

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Kinematic:	Not determined.
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· 9.2 Other information	No further relevant information available.
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SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions**
Possible formation of peroxide.
Exothermic polymerisation.
- **10.4 Conditions to avoid**
Heat, flames and sparks. Extremes of temperature and direct sunlight.
Contact with incompatible materials.
- **10.5 Incompatible materials:**
Strong Oxidizing Agents, Strong Bases, Strong Acids, Strong Reducing Agents, Iron, Hydrazine
- **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
Corrosive gases/vapours
Danger of forming toxic pyrolysis products.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
Harmful if inhaled.

 · **LD/LC50 values relevant for classification:**

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)

Epoxy resin

Oral	LD50	>2000 mg/kg (Rat)
Dermal	LD50	>2000 mg/kg (rabbit)
Inhalative	LC50	>5 mg/L (Rat)

115-10-6 dimethyl ether

Inhalative	LC50 4 hr	164000 ppm (Rat)
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108-32-7 Propylene carbonate

Oral	LD50	>5000 mg/kg (Rat)
Dermal	LD50	>2000 mg/kg (rabbit)

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye irritation.

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- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **Additional toxicological information:**
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**
May cause drowsiness or dizziness.
- **STOT-repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:	
89452-37-9 Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-, (OC-6-11)-hexafluoroantimonate (1-)] (1:2)	
LC50/24 h	4.4 mg/l (daphnia)
LC50/48 hr	0.68 mg/L (daphnia)
71449-78-0 Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1)	
LC50/24 h	4.4 mg/l (daphnia)
LC50/48 hr	0.68 mg/L (daphnia)
115-10-6 dimethyl ether	
EC50/48 h	>4400 mg/l (daphnia magna)

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

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- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

· 14.1 UN-Number	
· ADR, IMDG, IATA	UN1950
· 14.2 UN proper shipping name	
· ADR	1950 AEROSOLS
· IMDG	AEROSOLS
· IATA	AEROSOLS, flammable
· 14.3 Transport hazard class(es)	
· ADR	
	
· Class	2 5F Gases.
· Label	2.1
· IMDG, IATA	
	
· Class	2.1
· Label	2.1
· 14.4 Packing group	
· ADR, IMDG, IATA	Void
· 14.5 Environmental hazards:	
· Marine pollutant:	No
· 14.6 Special precautions for user	Warning: Gases.
· Hazard identification number (Kemler code):	-
· EMS Number:	F-D,S-U
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	1L
· Transport category	2
· Tunnel restriction code	D
· UN "Model Regulation":	UN1950, AEROSOLS, 2.1

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SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Qualifying quantity (tonnes) for the application of lower-tier requirements** 150 t
- **Qualifying quantity (tonnes) for the application of upper-tier requirements** 500 t
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 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.

· Relevant phrases

H220 Extremely flammable gas.
H226 Flammable liquid and vapour.
H280 Contains gas under pressure; may explode if heated.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

· Department issuing SDS: Product safety department**· Contact:** Tom Cole, EHS Manager (tcole@kayakuAM.com)**· Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
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
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Gas 1: Flammable gases – Category 1
Aerosol 1: Aerosols – Category 1
Press. Gas (Comp.): Gases under pressure – Compressed gas
Flam. Liq. 3: Flammable liquids – Category 3
Acute Tox. 4: Acute toxicity – Category 4
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Skin Sens. 1: Skin sensitisation – Category 1
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1
Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3