ADVANCED MATERIALS

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 14.01.2022

Version number 8

Revision: 14.01.2022

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

### · 1.1 Product identifier

• Trade name: SU-8 2000 Series Resists

• Article number:

Y111004, Y111007, Y111014, Y111022, Y111029, Y111045, Y111053, Y111058, Y111064, Y111069, Y111070, Y111072, Y111074, Y111075

- · 1.2 Relevant identified uses of the substance or mixture and uses advised against
- · Sector of Use SU16 Manufacture of computer, electronic and optical products, electrical equipment
- · Product category PC30 Photo-chemicals
- 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

Flam. Liq. 3 H226 Flammable liquid and vapour.

environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

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$\wedge$	
$\mathbf{V}$	
Skin Irrit. 2	H315 Causes skin irritation.
Eye Irrit. 2	H319 Causes serious eye irritation.
Skin Sens. 1	H317 May cause an allergic skin reaction.
2.2 Label eleme	
	nis ding to Regulation (EC) No 1272/2008
	classified and labelled according to the CLP regulation.
Hazard pictogra	ams
	₩,
$\sim$	
GHS02 GHS	507 GHS09
011502 011	
Signal word Wo	urning
Hazard-determ	ining components of labelling:
Epoxy resin	
Sulfonium, (thio	di-4,1-phenylene) bis[diphenyl-,(OC-6-11)-hexafluoroantimonate (1-) (1:2)
	enyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1)
Hazard stateme	
	le liquid and vapour.
H315 Causes sk	
	rious eye irritation.
	e an allergic skin reaction.
	equatic life with long lasting effects.
<b>Precautionary</b> s P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No
F210	smoking.
P261	Avoid breathing 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.
<i>P305+P351+P</i> .	338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if
D111 . D111	present and easy to do. Continue rinsing.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 P370+P378	If eye irritation persists: Get medical advice/attention.
13/0+13/8	In case of fire: Use to extinguish: Alcohol resistant foam, Fire-extinguishing powder, Carbon dioxide.
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 hazar	8
	and vPvB assessment
PBT: Not appli	
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· vPvB: Not applicable.

### SECTION 3: Composition/information on ingredients

#### · 3.2 Chemical characterisation: Mixtures

• Description: Mixture of substances listed below with nonhazardous additions.

· Dangerous compon	ents:	
	Epoxy resin	3-75%
	🚯 Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317	
CAS: 120-92-3	Cyclopentanone	13-96%
EINECS: 204-435-9	🚸 Flam. Liq. 3, H226; 🕔 Skin Irrit. 2, H315; Eye Irrit. 2, H319	
CAS: 71449-78-0	Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)- hexafluoroantimonate(1-)(1:1)	.25-2.5%
	local Aquatic Acute 1, H400; Aquatic Chronic 1, H410; 🕔 Skin Sens. 1, H317	
CAS: 108-32-7	Propylene carbonate	0.3-5%
EINECS: 203-572-1	🚯 Skin Irrit. 2, H315; Eye Irrit. 2, H319	
CAS: 89452-37-9	Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-,(OC-6-11)- hexafluoroantimonate (1-) (1:2)	.25-2.5%
	Aquatic Acute 1, H400; Aquatic Chronic 1, H410; 🚸 Skin Sens. 1, H317	1
· Additional informat	ion: 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: Immediately remove any clothing soiled by the product.
- After inhalation: Supply fresh air; consult doctor in case of complaints.
- 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: 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.

### **SECTION 5: Firefighting measures**

- · 5.1 Extinguishing media
- · Suitable extinguishing agents:
- Alcohol resistant foam Fire-extinguishing powder
- Carbon dioxide
- For safety reasons unsuitable extinguishing agents: Water with full jet
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.

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· 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: Do not allow product to reach sewage system or any water course. 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: Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). 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 ventilation/exhaust at the workplace. Prevent formation of aerosols.
Information about fire - and explosion protection: Keep ignition sources away - Do not smoke. Use explosion-proof apparatus / fittings and spark-proof tools. Protect against electrostatic charges.
7.2 Conditions for safe storage, including any incompatibilities
Storage:
Requirements to be met by storerooms and containers: Due to photo-sensitivity, store product in brown-glass or stainless steel receptacles. Store in a cool location.
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.

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### **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: The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace. • 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 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 Nitrile rubber, NBR · 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: Liquid Colour: Clear to light yellow **Odour:** Sweetish • Odour threshold: Not determined. · pH-value: Not determined. · Change in condition *Melting point/freezing point:* Undetermined.

Initial boiling point and boiling range: 130 °C

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Flash point:	30 °C				
Flammability (solid, gas):	Not applicable	2.			
Ignition temperature:	430 °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:	Not determine				
Upper:	Not determine	ed.			
· Vapour pressure:	Not determined.				
Density:	See Table 1 Other Information below				
· Relative density	Not determine				
· Vapour density	Not determine	ed.			
· Evaporation rate	Not determined.				
· Solubility in / Miscibility with					
water:	Not miscible or difficult to mix.				
Partition coefficient: n-octanol/water:	Not determined.				
· Viscosity:					
Dynamic:	Not determined.				
Kinematic:	Not determined.				
· 9.2 Other information	Name	Number	Sp. Grav.	Vol.(%by wt.)	VOC (g/L)
	SU-8 2000.1	Y111004	1.00	94-98	960
	SU-8 2000.2	Y111007	1.00	90-95	930
	SU-8 2000.5	Y111014	1.07	85-90	920
	SU-8 2001	Y111022	1.100	80-85	860
	SU-8 2002	Y111029	1.123	70-75	800
	SU-8 2005	Y111045	1.164	50-55	640
	SU-8 2007	Y111053	1.175	45-50	550
	SU-8 2010	Y111058	1.187	40-45	500
	SU-8 2015	Y111064	1.200	35-40	430
	SU-8 2025	Y111069	1.219	30-35	380
	SU-8 2035	Y111070	1.227	20-30	370
	SU-8 2050	Y111072	1.233	20-30	345
	SU-8 2075	Y111074	1.236	20-30	320
	SU-8 2100	Y111075	1.237	20-30	310

### 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 Exothermic polymerisation.

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Advanced materials

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 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 Acids, Strong Bases

· 10.6 Hazardous decomposition products:

Carbon monoxide

Corrosive gases/vapours Danger of forming toxic pyrolysis products.

Antimony oxide

### **SECTION 11: Toxicological information**

· 11.1 Information on toxicological effects

• Acute toxicity Based on available data, the classification criteria are not met.

· LD/LC50	values rele	vant for classification:	
Epoxy resi	n		
Oral	LD50	>2000 mg/kg (Rat)	
Dermal	LD50	>2000 mg/kg (rabbit)	
Inhalative	LC50	>5 mg/L (Rat)	
120-92-3 (	Cyclopenta	none	
Oral	LD50	1820 mg/kg (Rat)	
Dermal	LD50	>2000 mg/kg (rabbit)	
Inhalative	LC50/4 h	19.5 mg/l (Rat)	
108-32-7 H			
Oral	LD50	>29000 mg/kg (Rat)	
Dermal	LD50	>20,000 mg/kg (rabbit)	
· Primary in	ritant effe		
· Skin corro			
Causes ski	n irritation	l.	
· Serious ey	e damage/i	irritation	
Causes ser			
· Respirator	y or skin s	ensitisation	
May cause	an allergi	c skin reaction.	
· Additional	toxicologi	ical information:	
· CMR effec	ets (carcino	ogenity, mutagenicity and toxicity for reproduction)	
· Germ cell	mutagenic	<i>ity</i> Based on available data, the classification criteria are not met.	
· Carcinoge	nicity Base	ed on available data, the classification criteria are not met.	
		Based on available data, the classification criteria are not met.	
		re Based on available data, the classification criteria are not met.	
		sure Based on available data, the classification criteria are not met.	
	Aspiration hazard Resed on available data the classification criteria are not met		

· Aspiration hazard Based on available data, the classification criteria are not met.

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Aquatic toxicity	::
Epoxy resin	
	$50 \leq 1000 \text{ mg/l} (algae)$
	$\leq 1000 \text{ mg/l} (fish)$
	$\leq 1000 \text{ mg/l} (invertebrates)$
89452-37-9 Sul	fonium, (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 Sul	fonium, 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)
12.3 Bioaccum 12.4 Mobility in Ecotoxical effe Remark: Toxic Additional ecol General notes: Do not allow un Also poisonous Toxic for aquat 12.5 Results of PBT: Not appli vPvB: Not appl	for fish ogical information: ndiluted product or large quantities of it to reach ground water, water course or sewage system for fish and plankton in water bodies. ic organisms PBT and vPvB assessment cable.

## 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.

· Uncleaned packaging:

• Recommendation: Disposal must be made according to official regulations.

14.1 UN-Number	
ADR, IMDG, IATA	UN1866
14.2 UN proper shipping name	
ADR, IATA	RESIN SOLUTION
IMDG	RESIN SOLUTION (Sulfonium, diphenyl[4-(phenylthio
	phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1)
	Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-,(OC-6-11)-



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	hexafluoroantimonate (1-) (1:2)), MARINE POLLUTANT
14.3 Transport hazard class(es)	
ADR, IMDG, IATA	
Class	3 Flammable liquids.
Label	3
14.4 Packing group	
ADR, IMDG, IATA	III
14.5 Environmental hazards:	V
Marine pollutant:	Yes
14.6 Special precautions for user	Warning: Flammable liquids.
Hazard identification number (Kemler code):	30 E E C D
EMS Number:	F-E,S-D A
Stowage Category	
14.7 Transport in bulk according to Annex II o	
Marpol and the IBC Code	Not applicable.
Transport/Additional information:	
ADR	
Limited quantities (LQ)	5L
Excepted quantities (EQ)	Code: El
	Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
Transport category	Maximum nei quantity per outer packaging: 1000 mi
Tunnel restriction code	D/E
IMDG	
Limited quantities (LQ)	5L
Excepted quantities (EQ)	Code: El
······································	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
UN ''Model Regulation'':	UN1866, RESIN SOLUTION, 3, III

### SECTION 15: Regulatory information

• 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available.

• 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.

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Relevant phrases	
H226 Flammable liquid and vapour.	
H315 Causes skin irritation	
H317 May cause an allergic skin reaction.	
H319 Causes serious eye irritation.	
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 (Reg	gulations Concerning the
International Transport of Dangerous Goods by Rail)	S
ICAO: International Civil Aviation Organisation	
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Co	ncerning 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	
<i>PBT: Persistent, Bioaccumulative and Toxic</i> <i>vPvB: very Persistent and very Bioaccumulative</i>	
Flam. Liq. 3: Flammable liquids – Category 3	
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	
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 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2	
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