

Safety data sheet

according to 1907/2006/EC, Article 31

Printing date 12.10.2021

Version number 8

Revision: 12.10.2021

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

1.1 Product identifier

Trade name: **KMPR Series Resists**

Article number: Y211029, Y211045, Y211055, Y211060, Y211064, Y211066, Y211067

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

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.



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.

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 Warning

Hazard-determining components of labelling:

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

H226 Flammable liquid and vapour.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No 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.

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

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

Additional information:

52.1 % of the mixture consists of component(s) of unknown toxicity.

Contains 52.1 % of components with unknown hazards to the aquatic environment.

2.3 Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

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: 120-92-3 EINECS: 204-435-9	Cyclopentanone Flam. Liq. 3, H226; Skin Irrit. 2, H315; Eye Irrit. 2, H319	25-50%
CAS: 107-98-2 EINECS: 203-539-1	1-methoxy-2-propanol Flam. Liq. 3, H226; STOT SE 3, H336	1-10%
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	1-5%
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	1-5%

Additional Components:

Epoxy Resin (CAS Proprietary)	40-70%
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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.

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; call for medical help immediately.

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**
 - Ensure adequate ventilation
 - Keep away from ignition sources.
 - Wear protective equipment. Keep unprotected persons away.
- **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:**
 - Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
 - 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**
 - Store in cool, dry place in tightly closed receptacles.
 - Keep away from heat and direct sunlight.
 - Ensure good ventilation/exhaust at the workplace.
 - Prevent formation of aerosols.
- **Information about fire - and explosion protection:**
 - Use explosion-proof apparatus / fittings and spark-proof tools.
 - Keep ignition sources away - Do not smoke.
 - Protect from heat.
 - 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.
- **Information about storage in one common storage facility:**
 - Do not store together with amines.
 - Do not store together with alkalis (caustic solutions).
 - Do not store together with oxidising and acidic materials.
 - Store away from reducing agents.
- **Further information about storage conditions:**
 - Protect from exposure to the light.
 - Keep container tightly sealed.
 - Protect from heat and direct sunlight.
 - Keep frozen.

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 · 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:**
107-98-2 1-methoxy-2-propanol

WEL	Short-term value: 560 mg/m ³ , 150 ppm
	Long-term value: 375 mg/m ³ , 100 ppm
Sk	

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

 · 8.2 **Exposure controls**

 · **Personal protective equipment:**

 · **General protective and hygienic measures:**

Do not eat or drink while working.

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

Butyl rubber, BR

 · **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
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· Colour:	Clear to light yellow																																								
· Odour:	Characteristic																																								
· Odour threshold:	Not determined.																																								
· pH-value:	Not determined.																																								
· Change in condition																																									
Melting point/freezing point:	Undetermined.																																								
Initial boiling point and boiling range:	130 °C																																								
· Flash point:	30 °C																																								
· Flammability (solid, gas):	Not applicable.																																								
· Ignition temperature:	270 °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:	1.3 Vol %																																								
Upper:	Not determined.																																								
· Vapour pressure at 20 °C:	11 hPa																																								
· Density:	Not determined.																																								
· Vapour density	Not determined.																																								
· 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	No further relevant information available. Table 1. Product specific gravity and VOC data.																																								
	<table><tr><td>Name</td><td>Number</td><td>Sp. Grav.</td><td>Vol. (%by wt.)</td><td>VOC (g/L)</td></tr><tr><td>KMPR 1002</td><td>Y211029</td><td>1.02</td><td>69-72</td><td>710</td></tr><tr><td>KMPR 1005</td><td>Y211045</td><td>1.07</td><td>54-56</td><td>550</td></tr><tr><td>KMPR 1010</td><td>Y211055</td><td>1.10</td><td>44-46</td><td>450</td></tr><tr><td>KMPR 1015</td><td>Y211060</td><td>1.12</td><td>39-44</td><td>400</td></tr><tr><td>KMPR 1025</td><td>Y211064</td><td>1.20</td><td>35-37</td><td>360</td></tr><tr><td>KMPR 1035</td><td>Y211066</td><td>1.21</td><td>33-35</td><td>340</td></tr><tr><td>KMPR 1050</td><td>Y211067</td><td>1.22</td><td>32-35</td><td>340</td></tr></table>	Name	Number	Sp. Grav.	Vol. (%by wt.)	VOC (g/L)	KMPR 1002	Y211029	1.02	69-72	710	KMPR 1005	Y211045	1.07	54-56	550	KMPR 1010	Y211055	1.10	44-46	450	KMPR 1015	Y211060	1.12	39-44	400	KMPR 1025	Y211064	1.20	35-37	360	KMPR 1035	Y211066	1.21	33-35	340	KMPR 1050	Y211067	1.22	32-35	340
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KMPR 1035	Y211066	1.21	33-35	340																																					
KMPR 1050	Y211067	1.22	32-35	340																																					

SECTION 10: Stability and reactivity

 · **10.1 Reactivity** No further relevant information available.

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- **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.
- **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, Amines
- **10.6 Hazardous decomposition products:**
Carbon monoxide and carbon dioxide
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 relevant for classification:**

120-92-3 Cyclopentanone

Oral	LD50	1820 mg/kg (Rat)
Dermal	LD50	>2000 mg/kg (rabbit)
Inhalative	LC50/4 h	19.5 mg/l (Rat)

107-98-2 1-methoxy-2-propanol

Oral	LD50	5660 mg/kg (Rat)
Dermal	LD50	13000 mg/kg (rabbit)
Inhalative	LC50/4 h	54.6 mg/l (Rat)

108-32-7 Propylene carbonate

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

- **Specific symptoms in biological assay:**
Mixture of triarylsulfonium/hexafluoroantimonate salts (CAS 71449-78-0 and 89452-37-9) in propylene carbonate (CAS 108-32-7): This material was mutagenic in the Ames bacterial assay. It is inactive, however, in the in vivo mouse micronucleus test.
Propylene carbonate (CAS 108-32-7): This substance had a negative Ames test with or without metabolic activation.
- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye irritation.
- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **Experience with humans:** No further relevant information available.
- **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.

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- **STOT-single exposure** Based on available data, the classification criteria are not met.
- **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)

 · **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.

Uncleaned packaging:

 · **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN-Number

 · **ADR, IMDG, IATA**

UN1866

14.2 UN proper shipping name

 · **ADR, IMDG, IATA**

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· 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:
· Marine pollutant:

Yes

· 14.6 Special precautions for user

Warning: Flammable liquids.

· Hazard identification number (Kemler code):

30

· EMS Number:

 F-E,S-E

· Stowage Category

A

· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

· Transport/Additional information:
· ADR
· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

· Transport category

3

· Tunnel restriction code

D/E

· IMDG
· Limited quantities (LQ)

5L

· Excepted quantities (EQ)

Code: E1

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.
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. 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
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

· * Data compared to the previous version altered.

GB