

Safety data sheet
according to Regulation (EC) No 1907/2006, Article 31

Printing date 19.12.2024

Version number 2 (replaces version 1)

Revision: 19.12.2024

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

- **1.1 Product identifier**
- **Trade name:** KMPR® 3000 Series Resists
- **Article number:** Y214020, Y214031, Y214043, Y214045, Y214051, Y214055, Y214060, Y214062, Y214064
- **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:**
Kayaku Advanced Materials, Inc.
200 Flanders Road
Westborough, MA 01581
Tel: (617) 965-5511
Fax: (617) 965-5818
- **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**



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Eye Irrit. 2 H319 Causes serious eye irritation.

- **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 statements**
H226 Flammable liquid and vapour.

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H315 Causes skin irritation.

H319 Causes serious eye irritation.

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.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing 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:

44.8 % of the mixture consists of component(s) of unknown toxicity.

Contains 44.8 % 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.

Determination of endocrine-disrupting properties

None of the ingredients are included in the list established in accordance with Article 59(1) for having endocrine disrupting properties.

None of the ingredients are substances identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 (or Commission Regulation (EU) 2018/605.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

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

Dangerous components:

CAS: 120-92-3 EINECS: 204-435-9 Index number: 606-025-00-9 Reg.nr.: 01-2119495595-21-0000	Cyclopentanone Flam. Liq. 3, H226; Skin Irrit. 2, H315; Eye Irrit. 2, H319	25-75%
CAS: 107-98-2 EINECS: 203-539-1 Index number: 603-064-00-3	1-methoxy-2-propanol Flam. Liq. 3, H226; STOT SE 3, H336	1-10%
CAS: 108-32-7 EINECS: 203-572-1 Index number: 607-194-00-1	Propylene carbonate Skin Irrit. 2, H315; Eye Irrit. 2, H319	0.25-3%

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CAS: 96-48-0	gamma-Butyrolactone	0.25-3%
EINECS: 202-509-5	Eye Dam. 1, H318; Acute Tox. 4, H302; STOT SE 3, H336	
Additional Components:		
Proprietary Epoxy Resin		15-65%
Proprietary Photoacid Generator		<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

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: 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

5.2 Special hazards arising from the substance or mixture No further relevant information available.

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.

Keep away from ignition sources.

Ensure adequate ventilation

6.2 Environmental precautions:

Dilute with plenty of water.

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.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

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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.
 Protect against electrostatic charges.
 Use explosion-proof apparatus / fittings and spark-proof tools.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:** No special requirements.
- **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

 · **Ingredients with limit values that require monitoring at the workplace:**
107-98-2 1-methoxy-2-propanol

IOELV	Short-term value: 568 mg/m ³ , 150 ppm
	Long-term value: 375 mg/m ³ , 100 ppm
	Skin

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

· 8.2 Exposure controls

- **Appropriate engineering controls** No further data; see section 7.
- **Individual protection measures, such as 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.
- **Hand protection**



Protective gloves

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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/face protection**



Tightly sealed goggles

· **Body protection:** Long-sleeved work clothes

SECTION 9: Physical and chemical properties

· 9.1 Information on basic physical and chemical properties

· General Information

· **Physical state**

Liquid

· **Colour:**

Beige

· **Odour:**

Mild

· **Odour threshold:**

Not determined.

· **Melting point/freezing point:**

Undetermined.

· **Boiling point or initial boiling point and boiling range**

130.6 °C (120-92-3 Cyclopentanone)

· **Flammability**

Not applicable.

· **Lower and upper explosion limit**

· **Lower:**

Not determined.

· **Upper:**

Not determined.

· **Flash point:**

30 °C (120-92-3 Cyclopentanone)

· **Auto-ignition temperature:**

430 °C (120-92-3 Cyclopentanone)

· **Decomposition temperature:**

Not determined.

· **pH**

Not determined.

· **Viscosity:**

· **Kinematic viscosity**

Not determined.

· **Dynamic:**

Not determined.

· **Solubility**

· **water:**

Insoluble.

· **Partition coefficient n-octanol/water (log value)**

Not determined.

· **Vapour pressure at 20 °C:**

11 hPa (120-92-3 Cyclopentanone)

· **Density and/or relative density**

· **Density:**

See Other information

· **Relative density**

Not determined.

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· Vapour density	Not determined.				
· 9.2 Other information	Name	Number	Sp. Grav.	VOC(%by wt.)	VOC(g/L)
	KMPR 3001	Y214020	1.0028	75-80	775
	KMPR 3002	Y214031	1.0337	65-70	690
	KMPR 3005	Y214043	1.0599	55-60	615
	KMPR 3006	Y214045	1.0739	50-55	580
	KMPR 3010	Y214051	1.0899	45-50	525
	KMPR 3015	Y214055	1.1045	40-45	475
	KMPR 3025	Y214060	1.1171	35-40	440
	KMPR 3035	Y214062	1.1229	35-40	420
	KMPR 3050	Y214064	1.1287	30-35	400
· Appearance:					
· Form:	Liquid				
· Important information on protection of health and environment, and on safety.					
· Ignition temperature:	Product is not selfigniting.				
· Explosive properties:	Product is not explosive. However, formation of explosive air/vapour mixtures are possible.				
· Solvent content:					
· VOC (EC)	30-80 %				
· Change in condition					
· Evaporation rate	Not determined.				
· Information with regard to physical hazard classes					
· Explosives	Not applicable.				
· Flammable gases	Not applicable.				
· Aerosols	Not applicable.				
· Oxidising gases	Not applicable.				
· Gases under pressure	Not applicable.				
· Flammable liquids	Flammable liquid and vapour.				
· Flammable solids	Not applicable.				
· Self-reactive substances and mixtures	Not applicable.				
· Pyrophoric liquids	Not applicable.				
· Pyrophoric solids	Not applicable.				
· Self-heating substances and mixtures	Not applicable.				
· Substances and mixtures, which emit flammable gases in contact with water	Not applicable.				
· Oxidising liquids	Not applicable.				
· Oxidising solids	Not applicable.				
· Organic peroxides	Not applicable.				
· Corrosive to metals	Not applicable.				
· Desensitised explosives	Not applicable.				

SECTION 10: Stability and reactivity

- 10.1 Reactivity No further relevant information available.
- 10.2 Chemical stability Stable
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- 10.3 Possibility of hazardous reactions No dangerous reactions known.

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- **10.4 Conditions to avoid**
 Contact with incompatible materials.
 Heat, flames and sparks. Extremes of temperature and direct sunlight.
- **10.5 Incompatible materials:** Strong Oxidizing Agents, Strong Acids, Strong Bases
- **10.6 Hazardous decomposition products:**
 Hydrocarbons
 Carbon monoxide and carbon dioxide
 Nitrogen oxides (NO_x)

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity**
 Based on available data, the classification criteria are not met.
 Based on available data, the classification criteria are not met.

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

120-92-3 Cyclopentanone

Oral	LD50	1,820 mg/kg (Rat)
Dermal	LD50	>2,000 mg/kg (rabbit)
Inhalative	LC50/4 h	19.5 mg/l (Rat)

- **Primary irritant effect:**
- **Skin corrosion/irritation** Causes skin irritation.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Respiratory or skin sensitisation**
 Based on available data, the classification criteria are not met.
 Based on available data, the classification criteria are not met.
- **Germ cell mutagenicity**
 Based on available data, the classification criteria are not met.
 Based on available data, the classification criteria are not met.
- **Carcinogenicity**
 Based on available data, the classification criteria are not met.
 Based on available data, the classification criteria are not met.
- **Reproductive toxicity**
 Based on available data, the classification criteria are not met.
 Based on available data, the classification criteria are not met.
- **STOT-single exposure**
 Based on available data, the classification criteria are not met.
 Based on available data, the classification criteria are not met.
- **STOT-repeated exposure**
 Based on available data, the classification criteria are not met.
 Based on available data, the classification criteria are not met.
- **Aspiration hazard**
 Based on available data, the classification criteria are not met.
 Based on available data, the classification criteria are not met.
- **Experience with humans:** Target Organs: Central nervous system, kidney, liver, lungs

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· 11.2 Information on other hazards

· Endocrine disrupting properties

None of the ingredients is listed.

SECTION 12: Ecological information

· 12.1 Toxicity

· Aquatic toxicity:

120-92-3 Cyclopentanone

LC50/48 hr	2,950 mg/L (golden orfe)
LC50/96 h	>100 mg/l (fish)
EC50/48 h	3,600 mg/l (Ceriodaphnia dubia (water flea))
	100 mg/l (daphnia magna)
EC50/72 h	>100 mg/l (scenedesmus subspicatus)

· **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.

· 12.5 Results of PBT and vPvB assessment

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· 12.6 Endocrine disrupting properties

The product does not contain substances with endocrine disrupting properties.

· 12.7 Other adverse effects

· 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.

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.

Disposal must be made in accordance with International, National, and regional regulations.

· Uncleaned packaging:

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

· **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

SECTION 14: Transport information

· 14.1 UN number or ID 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:

Not applicable.

· 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 Maritime transport in bulk according to IMO instruments

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":

UN 1866 RESIN SOLUTION, 3, III

SECTION 15: Regulatory information

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

· Directive 2012/18/EU

· Named dangerous substances - ANNEX I None of the ingredients is listed.

· Seveso category P5c FLAMMABLE LIQUIDS

· Qualifying quantity (tonnes) for the application of lower-tier requirements 5,000 t

· Qualifying quantity (tonnes) for the application of upper-tier requirements 50,000 t

· REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

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· **DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

· **REGULATION (EU) 2019/1148**

· **Annex I - RESTRICTED EXPLOSIVES PRECURSORS (Upper limit value for the purpose of licensing under Article 5(3))**

None of the ingredients is listed.

· **Annex II - REPORTABLE EXPLOSIVES PRECURSORS**

None of the ingredients is listed.

· **Regulation (EC) No 273/2004 on drug precursors**

None of the ingredients is listed.

· **Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors**

None of the ingredients is listed.

· **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**

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H336 May cause drowsiness or dizziness.

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

Art. 9(1) of Regulation (EC) No. 1272/2008 was used for classification purposes.

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

· **Contact:** Tom Cole, EHS Manager (tcole@kayakuam.com)

· **Revision History:** New SDS.

· **Version number of previous version:** 1

· **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

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)

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

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

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Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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EU