

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/05/2022

Reviewed on 05/05/2022

1 Identification

- **Product identifier**
- **Trade name:** eTECTX Series Resists
- **Product number:** CRP1002
- **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

Flammable Liquids 3

H226 Flammable liquid and vapor.



GHS08 Health hazard

Specific Target Organ Toxicity - Repeated Exposure 2 H373 May cause damage to organs through prolonged or repeated exposure.



GHS09 Environment

Aquatic Chronic 2

H411 Toxic to aquatic life with long lasting effects.



GHS07

Skin Irritation 2

H315 Causes skin irritation.

Eye Irritation 2A

H319 Causes serious eye irritation.

Sensitization - Skin 1

H317 May cause an allergic skin reaction.

Aquatic Acute 2

H401 Toxic to aquatic life.

- **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 Warning

· Hazard-determining components of labeling:

Proprietary Epoxy Resin
 Proprietary epoxy resin M1
 Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-, (OC-6-11)-hexafluoroantimonate (1-) (1:2)
 Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1)
 Cyclopentanone

· Hazard statements

H226 Flammable liquid and vapor.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H317 May cause an allergic skin reaction.
 H373 May cause damage to organs through prolonged or repeated exposure.
 H401 Toxic to aquatic life.
 H411 Toxic to aquatic life with long lasting effects.

· Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
 P260 Do not breathe dust/fume/gas/mist/vapors/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 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+P235 Store in a well-ventilated place. Keep cool.
 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: consisting of the following components.

· Dangerous components:

	Proprietary Epoxy Resin	25-50%
	☠ Specific Target Organ Toxicity - Repeated Exposure 2, H373; ☠ Skin Irritation 2, H315; Eye Irritation 2A, H319; Sensitization - Skin 1, H317; Aquatic Chronic 4, H413	
	Proprietary epoxy resin M1	25-50%
	☠ Skin Irritation 2, H315; Eye Irritation 2A, H319; Sensitization - Skin 1, H317	
120-92-3	Cyclopentanone	10-40%
	☠ Flammable Liquids 3, H226; ☠ Skin Irritation 2, H315; Eye Irritation 2A, H319	
108-32-7	Propylene carbonate	1-5%
	☠ Skin Irritation 2, H315; Eye Irritation 2A, H319	
89452-37-9	Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-, (OC-6-11)-hexafluoroantimonate (1-) (1:2)	1-5%
	☠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ☠ Sensitization - Skin 1, H317	
71449-78-0	Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1)	1-5%
	☠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ☠ Sensitization - Skin 1, H317	

· Additional Components:

	Proprietary Resin Modifier	5-10%
	Epoxy Compound	<1%
	☠ Eye Damage 1, H318	
96-48-0	gamma-Butyrolactone	<1%
	☠ Eye Damage 1, H318; ☠ Acute Toxicity - Oral 4, H302; Specific Target Organ Toxicity - Single Exposure 3, H336	

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **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 unless instructed to do so by a physician. Wash out mouth with water and keep person at rest. Seek immediate medical attention.

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- **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
- **For safety reasons unsuitable extinguishing agents:**
 - Water with full jet
 - Water
- **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.
- **Advice for firefighters**
- **Protective equipment:** Wear SCBA.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
 - Wear protective equipment. Keep unprotected persons away.
 - Keep away from ignition sources
 - Ensure adequate ventilation
- **Environmental precautions:**
 - Do not allow product to reach sewage system or any drains.
 - Inform respective authorities in case of seepage into water course or sewage system.
 - Do not allow to enter sewers/ surface or ground water.
- **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
- **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.
- **Information about protection against explosions and fires:**
 - Keep ignition sources away - Do not smoke.
 - Protect against electrostatic charges.
 - Use explosion-proof apparatus / fittings and spark-proof tools.

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- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:**
 Store in a cool location.
 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 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.
- **Control parameters**

Components with limit values that require monitoring at the workplace:	
Proprietary epoxy resin M1	
ACGIH TLV TWA	Short-term value: 10 mg/m ³
OSHA PEL TWA	Short-term value: 5 mg/m ³ Inhalable particulate
89452-37-9 Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-, (OC-6-11)-hexafluoroantimonate (1-)] (1:2)	
ACGIH TLV TWA	Long-term value: 0.5 mg/m ³
NIOSH IDLH	Long-term value: 50 mg/m ³
OSHA PEL	Long-term value: 0.5 mg/m ³
71449-78-0 Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1)	
	ACGIH TLV TWA: Long-term value: 0.5 mg/m ³
NIOSH IDLH	Long-term value: 50 mg/m ³
OSHA PEL	Long-term value: 0.5 mg/m ³

- **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 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

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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** 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:	Liquid
· Color:	Clear to light yellow
· Odor:	Sweet
· Odor threshold:	Not determined.

· **pH-value:** Not determined.

· **Change in condition**

· Melting point/Melting range:	Undetermined.
· Boiling point/Boiling range:	130 °C (266 °F)

· **Flash point:** 30 °C (86 °F)

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

· **Ignition temperature:** 430 °C (806 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

· **Explosion limits:**

· Lower:	Not determined.
· Upper:	Not determined.

· **Vapor pressure:** Not determined.

· **Density:** Not determined.

· **Relative density** Not determined.

· **Vapor density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

· **Water:** Water miscible No

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

· **Viscosity:**

· **Dynamic:** Not determined.

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Kinematic:	Not determined.
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· Other information	No further relevant information available.
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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** Exothermic polymerization.
- **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
 Danger of toxic pyrolysis products.
 Corrosive gases/vapors
 Antimony oxide

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

 · **LD/LC50 values that are relevant for classification:**
Proprietary epoxy resin M1

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

Epoxy Compound

Oral	LD50	8030 mg/kg (Rat)
Dermal	LD50	4248 mg/kg (Rat)
Inhalative	LC50/4 h	> 5.3 mg/l (Rat)

Proprietary Epoxy Resin

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

Proprietary epoxy resin M1

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

108-32-7 Propylene carbonate

Oral	LD50	>29000 mg/kg (Rat)
Dermal	LD50	>20,000 mg/kg (rabbit)

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· **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.

[3-(2,3-epoxypropoxy)propyl]trimethoxysilane (CAS 2530-83-8):

This material was weakly mutagenic in the Ames test, mouse lymphoma assay, and an in vitro sister chromatid exchange test; however results of in vivo genotoxicity studies have shown mixed results. Repeated exposure of rats or rabbits to this material did not result in an increase in sister chromatid exchange, while single exposures of mice to a hydrosylate of this materials resulted in a significant increase in micronucleated polychromatic erythrocytes. The potential relevance to humans is unknown; however, it is unlikely that this material presents a significant genotoxic hazard, in that it lacks any local tumorigenic response the the chronic recurrent application to mouse skin.

Formaldehyde, polymer with (chloromethyl)oxirane and 4,4'-(1-methylethylidene)bis[phenol] CAS 28906-96-9:

This material was mutagenic in the Ames bacterial assay and showed a positive result in a mammalian cell chromosomal aberration test.

· **Primary irritant effect:**

· **on the skin:** Irritant to skin and mucous membranes.

· **on the eye:** Irritating effect.

· **Sensitization:** Sensitization possible through skin contact.

· **Experience with humans:** No further relevant information available.

· **Additional toxicological information:**

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

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

None of the ingredients are listed.

· **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:**

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)

Epoxy Compound

EC50/48 h 30 mg/l (daphnia magna)

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EC50/72 h	255 mg/l (Desmodesmus subscipatus (green algae))
LC50/96 h	55 mg/l (Cyprinus carpio (common carp))
120-92-3 Cyclopentanone	
EC50/48 h	3600 mg/l (Ceriodaphnia dubia (water flea))
	100 mg/l (daphnia magna)
EC50/72 h	>100 mg/l (scenedesmus subspicatus)
LC50/48 hr	2950 mg/L (golden orfe)
LC50/96 h	>100 mg/l (fish)
Proprietary Epoxy Resin	
LC50/96 h	>0.31 mg/l (algae)
	>0.31 mg/l (Water flea)
NOEC/96 h	≥0.99 mg/l (algae)
108-32-7 Propylene carbonate	
EC50/17 h	>10000 mg/l (Pseudomonas putida)
EC50/48 h	>500 mg/l (daphnia magna)
EC50/72 h	>500 mg/l (scenedesmus subspicatus)
LC50/96 h	2200 mg/l (Leuciscus idus)

- **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.
- **Ecotoxic effects:**
- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:**
 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
- **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.

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14 Transport information

· UN-Number	UN1866
· DOT, ADR, IMDG, IATA	
· UN proper shipping name	Resin solution
· DOT	RESIN SOLUTION
· ADR, IATA	RESIN SOLUTION, MARINE POLLUTANT
· IMDG	
· Transport hazard class(es)	
· DOT	
	
· Class	3 Flammable liquids
· Label	3
· ADR, IMDG, IATA	
	
· Class	3 Flammable liquids
· Label	3
· Packing group	III
· DOT, ADR, IMDG, IATA	
· Environmental hazards:	Product contains environmentally hazardous substances: Formaldehyde, polymer with (chloromethyl)oxirane and 4,4'-(1-methylethylidene)bis[phenol]
· Marine pollutant:	Yes
· Special precautions for user	Warning: Flammable liquids
· Hazard identification number (Kemler code):	30
· EMS Number:	F-E,S-D
· Stowage Category	A
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 60 L On cargo aircraft only: 220 L
· ADR	
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

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- | | |
|--|--|
| <ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) | 5L
Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml |
| <ul style="list-style-type: none"> · UN "Model Regulation": | UN 1866 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):
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None of the ingredients are listed.

· Section 313 (Specific toxic chemical listings):
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89452-37-9	Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-, (OC-6-11)-hexafluoroantimonate (1-) (1:2)
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71449-78-0	Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1)
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- **TSCA (Toxic Substances Control Act):**

This product is intended solely for export per 40 CFR §720.30(e) of the Toxic Substances Control Act (TSCA).

- **Proposition 65**

- **Chemicals known to cause cancer:**

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects and other reproductive harm.

71-43-2	benzene
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- **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.

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

None of the ingredients are listed.

- **Massachusetts State Right To Know List**

120-92-3	Cyclopentanone
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- **New Jersey State Right To Know List**

120-92-3	Cyclopentanone
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· Pennsylvania Hazardous Substances List

120-92-3 Cyclopentanone

- **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 GHS07 GHS08 GHS09

- **Signal word** Warning
- **Hazard-determining components of labeling:**
 - Proprietary Epoxy Resin
 - Proprietary epoxy resin MI
 - Sulfonium, (thiodi-4,1-phenylene) bis[diphenyl-, (OC-6-11)-hexafluoroantimonate (1-) (1:2)
 - Sulfonium, diphenyl[4-(phenylthio)phenyl]-, (OC-6-11)-hexafluoroantimonate(1-) (1:1)
 - Cyclopentanone

· Hazard statements

- H226 Flammable liquid and vapor.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H317 May cause an allergic skin reaction.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H401 Toxic to aquatic life.
- H411 Toxic to aquatic life with long lasting effects.

· Precautionary statements

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P260 Do not breathe dust/fume/gas/mist/vapors/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 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+P235 Store in a well-ventilated place. Keep cool.
- 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.

US

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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
- **Contact:** Tom Cole, EHS Manager (tcole@kayakuAM.com)

- **Revision History:**

The manufacturer's information in Section 1, the product hazard information in Section 2 and the component hazard information in Section 3 have been updated.

- **Date of preparation / last revision** 05/05/2022 / 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)

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

Flammable Liquids 3: Flammable liquids – Category 3

Skin Irritation 2: Skin corrosion/irritation – Category 2

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

Sensitization - Skin 1: Skin sensitisation – Category 1

Specific Target Organ Toxicity - Repeated Exposure 2: Specific target organ toxicity (repeated exposure) – Category 2

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

Aquatic Acute 2: Hazardous to the aquatic environment - acute aquatic hazard – Category 2

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

Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4