

## GPS Safety Summary

Substance Name:

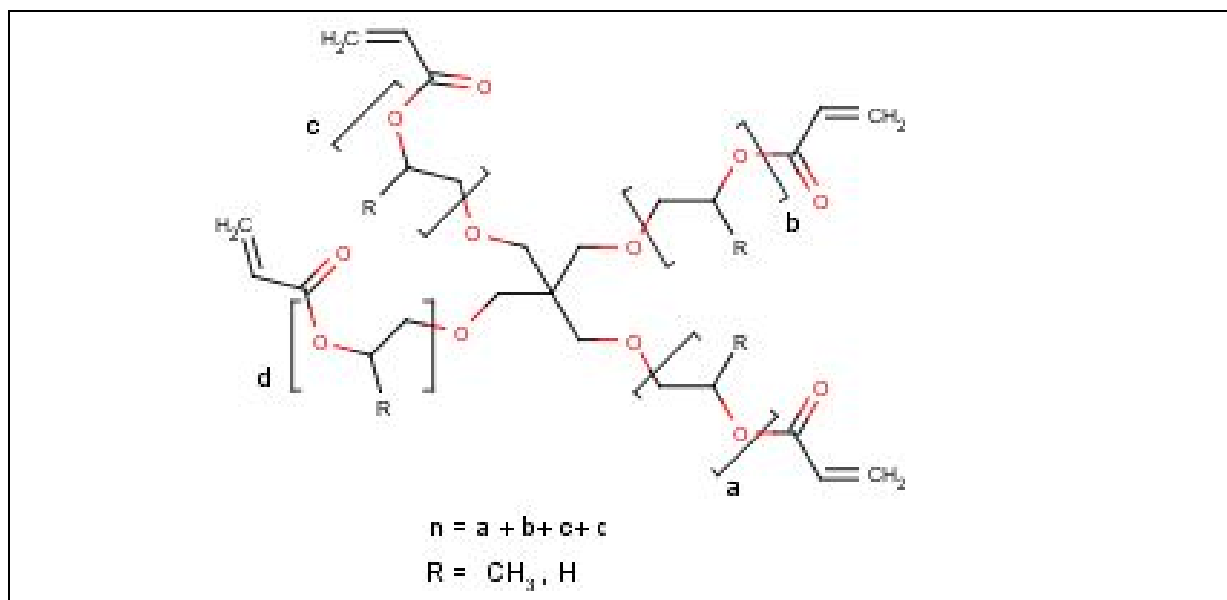
### Alkoxyated pentaerythritol tetraacrylate

#### 1. General Statement

Alkoxyated pentaerythritol tetraacrylate is a multifunctional acrylic monomer which can be polymerised by free radicals. In particular, it is designed for use in ultra violet and electron beam curing applications.

#### 2. Chemical Identity

<b>Name:</b>	Alkoxyated pentaerythritol tetraacrylate
<b>Brand name(s):</b>	SR494
<b>Chemical name (IUPAC):</b>	Esterification products of 2,2-bis(hydroxymethyl)-1,3-propanediol, ethoxylated and propoxylated and prop-2-enoic acid.
<b>CAS number:</b>	144086-02-2
<b>EC number:</b>	604-394-0
<b>Molecular formula:</b>	$C_{17}H_{28}O_{12} (C_3H_6O.C_2H_4O)_n$
<b>Structure:</b>	



#### 3. Use and applications

Alkoxyated Pentaerythritol Tetraacrylate, is a heat resistant, fast curing tetrafunctional acrylate monomer designed for use in ultra violet and electron beam curing applications.

## 4. Physical / Chemical properties

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Alkoxyated Pentaerythritol Tetraacrylate is a non flammable product with very low volatility and moderate solubility in water.

Property	Value
Physical state	Liquid at 20°C and 1013.25 hPa
Colour	Colourless
Odour	Acrylate (slight)
Molecular weight	352-718 g/mol for UVCB components
Relative density	1.1385
Vapour pressure	0.0000667 Pa at 20°C.
Freezing / boiling points	-61.9 to -47.5°C / > 213 °C at 1013 hPa. (polymerisation of the substance)
Flammability	Non flammable upon ignition.
Flash point	> 170°C (polymerisation of the substance)
Self-ignition temperature	408°C at 1013 hPa
Explosive / oxidizing properties	Not expected based on structure
Water solubility	1388 mg/L at 20°C
Dissociation constant (pK <sub>a</sub> )	Not applicable
Octanol-water partition coefficient (Log K <sub>ow</sub> )	76.2% of the components of this UVCB have a Log Kow ranged from 2.17 to 2.61 at 20°C

## 5. Health Effects

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Alkoxyated pentaerythritol tetraacrylate is irritating for eyes.

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Does not cause acute toxicity after oral and dermal exposure. No data is available by inhalation.
Irritation / corrosion Skin / eye / respiratory tract	Skin contact does not cause skin irritation. Eye contact causes eye irritation. No data is available on respiratory tract irritation.
Sensitisation	Not skin sensitising.
Toxicity after repeated exposure Oral / inhalation / dermal	No data is available.
Genotoxicity / Mutagenicity	Based on the available data, not expected to cause genetic effects.
Carcinogenicity	No data is available.
Reproductive / Developmental Toxicity	No data is available.

## 6. Environmental Effects

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Alkoxyated pentaerythritol tetraacrylate is considered as inherently biodegradable based on an analogue structure. It is assumed to be also biodegradable in soil and sediments.

### GPS Safety Summary

Effect Assessment	Result
Aquatic Toxicity	Toxic to aquatic life with long lasting effects.

Fate and behaviour	Result
Biodegradation	Inherently biodegradable.
Bioaccumulation potential	No bioaccumulation in aquatic organisms expected.
PBT / vPvB conclusion	As this substance is not considered to be bioaccumulative, it is not classified PBT. This substance is considered to be neither very persistent nor very bioaccumulative (vPvB).

## 7. Exposure

### 7.1 Human health

**Workplace exposure:** Exposure can occur either in an Alkoxyated pentaerythritol tetraacrylate manufacturing facility or in the various industrial facilities that use this substance. Those working with the substance in industrial operations could be exposed during maintenance, sampling, testing, or other procedures. Each industrial facility should have a thorough training program for employees and appropriate work processes and safety equipment in place to limit unnecessary exposure. Safety showers and eye-wash stations should be accessible nearby. Workers should follow the safety measures recommended in the Extended Safety Data Sheet (eSDS).

### 7.2 Environment

**Environmental exposure:** The substance is used in industrial settings and exposure of the environment is assessed for the manufacture, formulation and use. There are no direct consumer uses for the substance. Based on the results of risk assessment, all uses are adequately controlled with regard to the environment.

## 8. Risk Management recommendations

Human health protective measures	
<b>Organizational</b>	Ensure workers are duly trained to minimize exposure.
<b>Engineering controls</b>	Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.
<b>Personal protective equipment</b>	<b>Eye/Face protection:</b> Safety glasses with side-shields.
	<b>Skin protection:</b> Long sleeved clothing.
	<b>Hand protection:</b> Gloves: nitrile rubber > 0,5 mm,(suitable gloves tested to EN374). Replace gloves immediately when torn or any change in appearance (dimension, colour, flexibility, etc) is noticed.
	<b>Respiratory protection:</b> When using concentrated chemicals always make sure that there is adequate ventilation.

### Environmental protective measures

Do not allow material to contaminate ground water system.

All effluent releases that may include the substance must be directed to a (municipal) waste water treatment plant that removes the substance from the final releases to the receiving water.

## 9. Regulatory Information / Classification and Labelling

### 9.1 Regulatory Information



This substance has been registered under:

- EU Regulation EC 1907/2006 (REACH)

### 9.2 Classification and labelling



Under GHS (Globally Harmonized System of classification and labelling of chemicals), substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and safety data sheets. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use. Substances registered for REACH are classified according to Regulation (EC) 1272/2008, implementation of the GHS in the European Union.

#### Classification and labelling according to Regulation (EC) n° 1272/2008

Classification	
– Eye Irritation Category 2 – Aquatic Chronic Toxicity Category 2	
Labelling	
Hazard pictogram(s)	
– GHS07: Exclamation mark	
– GHS09: Environment	
Signal word	
– Warning	
Hazard statement(s)	
– H319: Causes serious eye irritation. – H411: Toxic to aquatic life with long lasting effects.	

#### Classification and labelling according to GHS

Classification
– Eye Irritation Category 2A – Aquatic Acute Toxicity Category 2 – Aquatic Chronic Toxicity Category 2

Labelling	
Hazard pictogram(s)	
– GHS07: Exclamation mark	
– GHS09: Environment	
Signal word	
– Warning	
Hazard statement(s)	
– H319: Causes serious eye irritation.	
– H411: Toxic to aquatic life with long lasting effects.	

## 10. Contact Information within Company

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For further information on this substance or product safety summary in general, please contact:

- **ICCA portal where the GPS Safety Summary is posted:**  
<http://www.icca-chem.org/en/Home/ICCA-initiatives/global-product-strategy/>

## 11. Date of Issues / Revision

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- Date of issue: 2014/12/15
- Date of revision:

## 12. Disclaimer

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The information contained in this paper is intended as advice only and whilst the information is provided in utmost good faith and has been based on the best information currently available, is to be relied upon at the user's own risk.

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