

## GPS Safety Summary

**Substance Name:**

### **TRIMETHYLOLPROPANE TRIACRYLATE**

#### **1. General Statement**

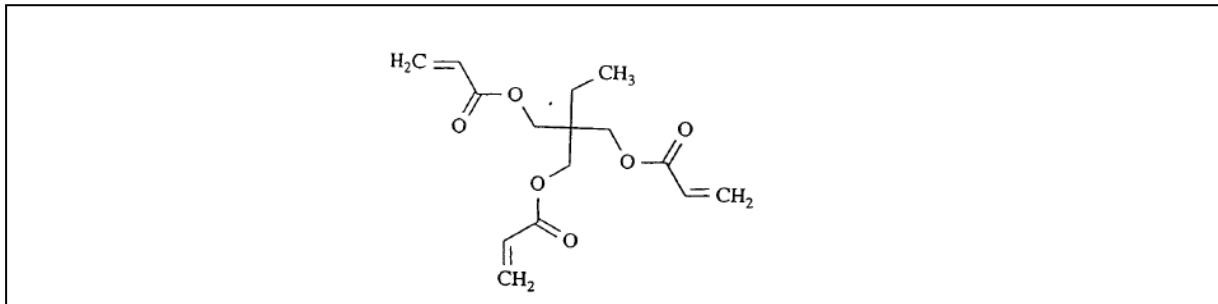
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TMPTA is a trifunctional acrylic monomer which can be polymerised by free radicals. In particular it is used in U.V & E.B cured coatings, inks and adhesives.

#### **2. Chemical Identity**

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<b>Name:</b>	TRIMETHYLOLPROPANE TRIACRYLATE
<b>Brand names:</b>	SR 351; SR 351 M
<b>Chemical name (IUPAC):</b>	2-ethyl-2-[[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate
<b>CAS number:</b>	15625-89-5
<b>ES number:</b>	239-701-3
<b>Molecular formula:</b>	C <sub>15</sub> H <sub>20</sub> O <sub>6</sub>
<b>Structure (optional):</b>	



#### **3. Use and applications**

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SR 351 is used as a reactive component in formulated coatings and inks that are cured using either Ultra Violet Light or Electron Beam radiation.

Typical applications of such coatings and inks include:-

- Furniture and Floor coatings on wooden substrates
- Coatings for plastic substrates as in automotive applications
- Overprint varnishes for publications and packaging items.
- Offset, Screen, Flexo and Inkjet printing inks for a variety of substrates including paper, plastic metal and glass

## 4. Physical / Chemical properties

Property	Value
Physical state	Liquid at 20°C and 1013.25 hPa
Form	
Particle size	Not applicable
Colour	colourless
Odour	Characteristic
Molecular weight	296 g/mol
Density	1,1 g/cm <sup>3</sup> at 20°C
Vapour pressure	< 0.1 Pa at 20°C
Freezing / boiling points	< - 20°C / 390°C at 1013.25 hPa
Flammability (optional) H statement in case classified	Non flammable
Flash point	194°C
Self-ignition temperature	385°C at 1013.25 hPa
Explosive / oxidizing properties	Not expected based on structure
Water solubility	500 mg/L at 20°C
Dissociation constant (pK <sub>a</sub> )	Not applicable
Octanol-water partition coefficient (Log K <sub>ow</sub> )	0.67 at 23°C

## 5. Health Effects

### 5.1 Consumer

Not applicable

### 5.2 Worker

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	Does not cause acute toxicity.
Irritation / corrosion Skin / eye/ respiratory tract	Skin contact causes irritation. Eye contact causes irritation. May be irritating for respiratory tract.
Sensitisation	May cause an allergic skin reaction.
Toxicity after repeated exposure Oral / inhalation / dermal	Does not cause toxicity to internal organs after repeated exposure in animal studies by dermal route. Similar materials did not cause toxicity to internal organs after repeated exposure in animal studies by oral route.
Genotoxicity / Mutagenicity	Based on the available test data, not expected to cause genetic effects.
Carcinogenicity	No reliable data is available.
Toxicity for reproduction	Does not cause effects on the reproduction or on the foetal development in animal studies.

## 6. Environmental Effects

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TMPTA is practically stable in water, as it is not hydrolysed. However, it is readily biodegradable in water and it can be assumed that TMPTA is also biodegradable in soil and sediment and thus as non persisting in soil and sediment.

TMPTA has a low adsorption potential and is thus of low mobility in soil.

Effect Assessment	Result
Aquatic Toxicity	Toxic to aquatic organisms.

Fate and behaviour	Result
Biodegradation	Readily biodegradable.
Bioaccumulation potential	Accumulation in organisms is not to be expected.
PBT / vPvB conclusion	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

## 7. Exposure

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### 7.1 Human health

#### **Workplace exposure:**

Exposure can occur either in an TMPTA manufacturing facility or in the various industrial facilities that use TMPTA. Those working with TMPTA 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).

#### **Consumer exposure:**

Since the consumer is not exposed directly to the unreacted monomer of TMPTA, an exposure to the consumer is negligible.

### 7.2 Environment

TMPTA is readily biodegradable and will therefore be degraded within the wastewater treatment process. If released to surface water, TMPTA is rapidly biodegraded and will not remain in the environment. Furthermore, the substance does not accumulate in the food chain. Hence, no risk from the substance to the environment is to be expected and all identified uses of the substance are considered to be safe for the environment.

## 8. Risk Management recommendations

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Human health measures	
Eye/Face protection	Safety glasses with side-shields
Skin protection	Long sleeved clothing

Hand protection	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.
Respiratory protection	When using concentrated chemicals always make sure that there is adequate ventilation.
Organizational measures	Ensure workers are duly trained to minimize exposure.
Engineering control	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>Environment protective measures</b>	
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 substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the e-SDS. 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 CLP (EC) 1272/2008, implementation of the GHS in the European Union.

<b>Classification</b>	
According to REGULATION (EC) no 1272/2008, the pure substance is classified:	
<ul style="list-style-type: none"> <li>– Skin Corrosion/Irritation; Category 2.</li> <li>– Serious Eye Damage/Eye Irritation; Category 2.</li> <li>– Skin Sensitization; Category 1.</li> </ul>	
<b>Signal word</b>	
– Warning	
<b>Pictogram</b>	
– GHS07: Exclamation mark	
<b>Hazard statement</b>	
<ul style="list-style-type: none"> <li>– H315 - Causes skin irritation</li> <li>– H317 - May cause an allergic skin reaction</li> <li>– H319 - Causes serious eye irritation</li> </ul>	

### Alternative classification according to Globally Harmonized System (GHS)

- H315 - Causes skin irritation
- H317 - May cause an allergic skin reaction
- H319 - Causes serious eye irritation
- H401: Toxic to aquatic life

## 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: 3012/03/11
- 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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