

## GPS Safety Summary

Substance Name:

### **Tripropyleneglycol diacrylate**

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

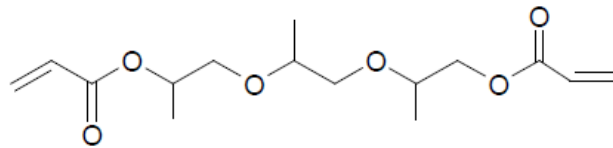
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TPGDA is a difunctional acrylic monomer which can be polymerised by free radicals. In particular it is used in U.V & E.B cured coatings, inks and adhesives.

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

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<b>Name:</b>	Tripropylene glycol diacrylate
<b>Brand names:</b>	SR 306
<b>Chemical name (IUPAC):</b>	2-[2-(2-(acryloyloxy)-1-methylethoxy)-1-methylethoxy]-methylethyl acrylate
<b>CAS number(s):</b>	42978-66-5
<b>ES number (optional):</b>	256-032-2
<b>Molecular formula (optional):</b>	C <sub>15</sub> H <sub>24</sub> O <sub>6</sub>
<b>Structure (optional):</b>	



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

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SR 306 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	300 g/mol
Density	1,04 g/cm <sup>3</sup> at 20°C
Vapour pressure	0.000044 hPa at 20°C
Freezing / boiling points	< - 20°C / > 120°C at 1013.25 hPa (Decomposition)
Flammability (optional) H statement in case classified	Non flammable upon ignition.
Flash point	> 153°C at 1013.25 hPa
Self-ignition temperature	214°C at 1000 hPa
Explosive / oxidizing properties	Not expected based on structure
Water solubility	4.0 g/l at 20°C
Dissociation constant (pK <sub>a</sub> )	Not applicable
Octanol-water partition coefficient (Log K <sub>ow</sub> )	2 at 25°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	Causes skin irritation. Causes eye irritation. May causes respiratory irritation
Sensitisation	May cause an allergic skin reaction.
Toxicity after repeated exposure Oral / inhalation / dermal	After repeated exposure by dermal route the prominent effect is local irritation. 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 data is available.
Toxicity for reproduction	Does not cause effects on the reproduction or on the foetal development in animal studies. Similar materials don't cause effects on the reproduction or on the foetal development in animal studies.

## 6. Environmental Effects

Due to its chemical structure, TPGDA has a low potential for hydrolysis. However, TPGDA is partly biodegradable (but not readily biodegradable according to OECD criteria). Based upon a calculated log K<sub>oc</sub> adsorption of TPGDA to solid soil phase is not expected.

Effect Assessment	Result
Aquatic Toxicity	Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.
Fate and behaviour	Result
Biodegradation	Moderately/partially biodegradable.
Bioaccumulation potential	Accumulation in organisms is not to be expected.
PBT / vPvB conclusion	This substance is not considered to be persistent, bioaccumulative nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulative (vPvB).

## 7. Exposure

### 7.1 Human health

#### **Consumer exposure:**

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

#### **Workplace:**

Exposure can occur either in a TPGDA manufacturing facility or in the various industrial facilities that use TPGDA. Those working with TPGDA 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

As described earlier, TPGDA is used in industrial settings and exposure of the environment is assessed for the manufacture, formulation and use. There are no direct customer uses for unreacted TPGDA. Based on the results of the risk assessment, all uses are adequately controlled with regard to the environment.

## 8. Risk Management recommendations

Human health measures	
Eye/Face protection	Safety glasses with side-shields
Skin protection	Long sleeved clothing
Hand protection	Gloves: nitrile rubber > 0,5mm,(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.
Environment 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 substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the eSDS. 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.

Classification
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><li>– Specific Target Organ Toxicity (Single Exposure); Category 3.</li><li>– Chronic Aquatic Toxicity; Category 2.</li></ul>
Signal word
– Warning

Pictogram	
— GHS07: Exclamation mark	
— GHS09: Environment	
Hazard statement	
<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> <li>— H335 - May cause respiratory irritation</li> <li>— H411 - Toxic to aquatic life with long lasting effects</li> </ul>	
Alternative classification according to Globally Harmonized System (GHS)	
<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> <li>— H335 - May cause respiratory irritation</li> <li>— H411 - Toxic to aquatic life with long lasting effects</li> </ul>	

## 10. Contact Information within Company

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

- Date of issue: 2013/03/11
- Date of revision:

## 12. Disclaimer

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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