

GPS Safety Summary

Substance Name:

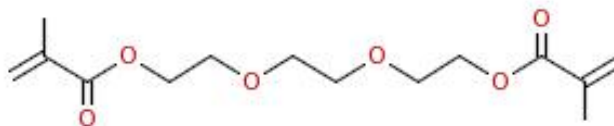
Triethyleneglycol dimethacrylate

1. General Statement

Triethylene glycol dimethacrylate is a high boiling monomer with low vapour pressure which is used in free radical polymerization.

2. Chemical Identity

Name:	Triethylene glycol Dimethacrylate
Brand name:	SR205
Chemical name (IUPAC):	ethane-1,2-diylbis(oxyethane-2,1-diyl) bis(2-methylacrylate)
CAS number(s):	109-16-0
EC number:	203-652-6
Molecular formula:	C ₁₄ H ₂₂ O ₆
Structure:	



3. Use and applications

Triethylene Glycol Dimethacrylate is a difunctional methacrylate monomer which can be used as a comonomer in free radical polymerization.

4. Physical / Chemical properties

Triethylene glycol Dimethacrylate has a low volatility, is a non flammable product with high solubility into water.

Property	Value
Physical state	liquid at 20°C and 1013.25 hPa
Colour	Colourless to slightly yellowish
Odour	Acrylate (slight)
Molecular weight	286.32 g/mol
Density	1.092 g/cm ³
Vapour pressure	0.077 Pa at 20°C
Freezing / boiling points	-88°C / polymerization of the substance prior boiling point at 1013 hPa.

Flammability	Non flammable upon ignition.
Flash point	> 150°C at 1012.25 hPa
Self-ignition temperature	255°C at 1025 hPa
Explosive / oxidizing properties	Not expected based on structure
Water solubility	3600 mg/L at 20°C
Dissociation constant (pK _a)	Not applicable
Octanol-water partition coefficient (Log K _{ow})	2.3 at 20°C

5. Health Effects

Triethylene glycol dimethacrylate is a moderate skin sensitizer.

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 does not cause eye irritation.
Sensitisation	Does cause a moderate allergic skin reaction.
Toxicity after repeated exposure Oral / inhalation / dermal	Does not cause toxicity to internal organs after repeated exposure in animal studies by oral and dermal routes. No data is available by inhalation.
Genotoxicity / Mutagenicity	Based on the available data, it is not possible to conclude on the genotoxicity of Triethylene glycol Dimethacrylate.
Carcinogenicity	Based on the available data, not expected to cause carcinogenic effects.
Reproductive / Developmental Toxicology	Based on the available data, does not cause effects on the reproduction or on the foetal development in animal studies.

6. Environmental Effects

Triethylene glycol Dimethacrylate is readily biodegradable in water and thus assumed to be also biodegradable in soil and sediment.

Effect Assessment	Result
Aquatic Toxicity	Harmful to aquatic life.

Fate and behaviour	Result
Biodegradation	Readily biodegradable.
Bioaccumulation potential	No bioaccumulation in aquatic organisms expected.
PBT / vPvB conclusion	As this substance is not considered to be persistent, 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 a Triethylene glycol Dimethacrylate manufacturing facility or in the various industrial facilities that use the 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: Triethylene glycol Dimethacrylate 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 Triethylene glycol Dimethacrylate. 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	
Organizational	Ensure workers are duly trained to minimize exposure.
Engineering controls	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.
Personal protective equipment	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. In case of insufficient ventilation, wear suitable respiratory equipments.
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)


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Arkema – Photocure Resins – SR 205 – Triethyleneglycol Dimethacrylate – GPS – 2014-12-15 – V0


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 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 to CLP (EC) 1272/2008, implementation of the GHS in the European Union.

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

Classification	
– Skin Sensitization Category 1B	
Labelling	
Hazard pictogram(s)	
– GHS07: Exclamation mark	
Signal word	
– Warning	
Hazard statement(s)	
– H317: May cause an allergic skin reaction	

Classification and labelling according to GHS

Classification	
– Skin Sensitization Category 1B	
– Aquatic acute toxicity Category 3	
Labelling	
Hazard pictogram(s)	
– GHS07: Exclamation mark	
Signal word	
– Warning	
Hazard statement(s)	
– H317: May cause an allergic skin reaction.	
– H402: Harmful to aquatic life.	

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: 2014/12/15
- 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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