GPS Safety Summary

Substance Name:

DIPROPYLENE GLYCOL DIACRYLATE

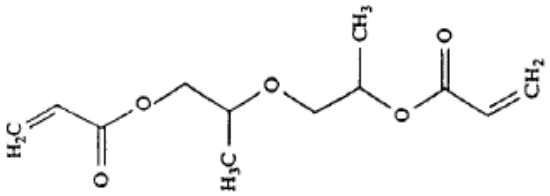
1. General Statement

DPGDA is a difunctional acrylate monomer which can be polymerised by free radicals. In particular, DPGDA is designed for use in ultra violet and electron beam curing applications.

2. Chemical Identity

Name:	DIPROPYLENE GLYCOL DIACRYLATE
Brand names:	SR 508; SR 508 E; SR 508 S; SR 508 TF
Chemical name (IUPAC):	Oxybis(methyl-2,1-ethanediyl) diacrylate
CAS number:	57472-68-1
ES number:	260-754-3
Molecular formula:	$C_{12}H_{18}O_5$

Structure (optional)**:**



3. Use and applications

SR 508 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	242 g/mol
Density	1.0499 g/cm3 at 20°C
Vapour pressure	0.00085 hPa at 20°C
Freezing / boiling points	-86°C / 104°C at 2,05 hPa
Flammability (optional) H statement in case classified	Non flammable upon ignition.
Flash point	137°C at 1013.25 hPa
Self-ignition temperature	240°C at 1013.25 hPa
Explosive / oxidizing properties	Not expected based on structure
Water solubility	5,2 g/L
Dissociation constant (pK_a)	Not applicable
Octanol-water partition coefficient (Log K_{ow})	0.01 - 0.39 at 24°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. Skin contact causes eye damage. May be irritating for respiratory tract.
Sensitisation	May cause an allergic skin reaction.
Toxicity after repeated exposure Oral / inhalation / dermal	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	Similar materials did not cause effects on the reproduction or on the foetal development in animal studies.

6. Environmental Effects

DPGDA will not hydrolyze in water. However it is readily biodegradable in water.

As DPGDA is readily biodegradable in water, it is assumed that DPGDA is also biodegradable in soil and sediment and thus can be considered as non persisting in soil and sediment.

Based upon a calculated log Koc adsorption of DPGDA to solid soil phase is not expected.

After evaporation or exposure to the air, DPGDA will be rapidly degraded by photochemical processes.

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, bioaccumulative nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulative (vPvB).

7. Exposure

7.1 Human health

***Workplace*:**

Exposure can occur either in an DPGDA manufacturing facility or in the various industrial facilities that use DPGDA. Those working with DPGDA 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 (e-SDS).

Consumer:

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

7.2 Environment

DPGDA is readily biodegradable and will therefore be degraded within the wastewater treatment process. If released to surface water, DPGDA 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

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
Environmental 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 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.

Classification	
According to REGULATION (EC) no 1272/2008, the pure substance is classified: - Skin Corrosion/Irritation; Category 2. - Serious Eye Damage/Eye Irritation; Category 1. - Skin Sensitization; Category 1.	
Signal word	
- Danger	
Pictogram	
- GHS 05	
- GHS07: Exclamation mark	
Hazard statement	
- H315 - Causes skin irritation - H317 - May cause an allergic skin reaction - H318 - Causes serious eye damage	

Alternative classification according to Globally Harmonized System (GHS)
— H303: May be harmful if swallowed — H315 - Causes skin irritation — H317 - May cause an allergic skin reaction — H318 - Causes serious eye damage — H401: Toxic 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: 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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