GPS Safety Summary

Substance Name:
BISPHENOL A EPOXY DIACRYLATE

1. General Statement

CN 104 is an epoxy acrylate oligomer for use in UV and EB curing composition.

2. Chemical Identity

Name:	BISPHENOL A EPOXY DIACRYLATE
Brand names:	CN 104
Chemical name (IUPAC):	4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid
CAS number:	55818-57-0
ES number:	500-130-2
Molecular formula:	Non applicable UVCB
Structure:	

3. Use and applications

CN 104 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	>=430 – <=822 g/mol
Density	1.195 g/cm^3 at 20°C
Vapour pressure	0.0001 Pa at 20°C
Freezing / boiling points	< -110°C – starts to decompose at about 220°C

Flammability (optional) H statement in case classified	non flammable
Flash point	> 130°C at 1013.25 hPa
Self-ignition temperature	465°C
Explosive / oxidizing properties	Not expected based on structure
Water solubility	82 mg/l – 484 mg/l at 20°C
Dissociation constant (pK_a)	Not applicable
Octanol-water partition coefficient (Log K_{ow})	1.6 - 3 (16.2% area HPLC RI detection) 3 - 3.8 (83.6% area HPLC RI detection)

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	Does not cause Eye / Skin irritation.
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 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	Based on the available test data, does not cause effects on the reproduction or on the foetal development in animal studies.

6. Environmental Effects

Bisphenol A Epoxy Diacrylate hydrolyses in water and is inherently biodegradable. It can be assumed that Bisphenol A Epoxy Diacrylate is also biodegradable in soil and sediment and thus can be considered as non persisting in soil and sediment.

Effect Assessment	Result
Aquatic Toxicity	Does not cause toxicity to aquatic life

Fate and behaviour	Result
Biodegradation	Inherently 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

Consumers:

Since the consumer is not exposed directly to the unreacted monomer of Bisphenol A Epoxy Diacrylate, an exposure to the consumer is negligible.

Worker:

Exposure can occur either in a Bisphenol A Epoxy Diacrylate manufacturing facility or in the various industrial facilities that use Bisphenol A Epoxy Diacrylate. Those working with Bisphenol A Epoxy Diacrylate 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

According to the biodegradation value (42%) obtained after 28 days of incubation with domestic activated sludge (OECD 301F), Bisphenol A Epoxy Diacrylate will be degraded within the wastewater treatment process. Similarly, Bisphenol A Epoxy Diacrylate will also not remain in the environment in case of release into surface water. 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
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: – Skin Sensitization; Category 1.	
Signal word	
– Warning	
Pictogram	
– GHS07: Exclamation mark	
Hazard statement	
– H317 - May cause an allergic skin reaction	
Alternative classification according to Globally Harmonized System (GHS)	
–	

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

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