SARTOMER
ARKEMA GROUP

SAFETY DATA SHEET

CN154

1. PRODUCT AND COMPANY IDENTIFICATION

Company

Arkema Inc.
900 First Avenue
King of Prussia, Pennsylvania 19406

Sartomer

Customer Service Telephone Number: (800) SARTOMER
(Monday through Friday, 8:00 AM to 5:00 PM EST)

Emergency Information

Transportation: CHEMTREC: (800) 424-9300
(24 hrs., 7 days a week)
Medical: Rocky Mountain Poison Center: (866) 767-5089
(24 hrs., 7 days a week)

Product Information

Product name: CN154
Synonyms: EPOXY METHACRYLATE
Molecular formula: Proprietary substance
Chemical family: methacrylates
Product use: Electronics

2. HAZARDS IDENTIFICATION

Emergency Overview

Color: Clear - colourless
Physical state: liquid
Form: viscous
Odor: acrylic-like

***Classification of the substance or mixture:**
Chronic aquatic toxicity, Category 3, H412

*For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labelling

Hazard statements:
H412 : Harmful to aquatic life with long lasting effects.

Supplemental Hazard Statements:

Processing may release vapors and/or fumes which cause eye, skin and respiratory tract irritation.

Precautionary statements:

Prevention:
P273 : Avoid release to the environment.

Disposal:
P501 : Dispose of contents or container to an approved waste disposal plant.

Supplemental information:

Potential Health Effects:
Effects due to processing releases or residual monomer: Irritating to eyes, respiratory system and skin. Possible cross sensitization with other acrylates and methacrylates.
Prolonged or repeated exposure may cause: headache, drowsiness, nausea, weakness, (severity of effects depends on extent of exposure).

Other:
This product may release fume and/or vapor of variable composition depending on processing time and temperature.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
Epoxy methacrylate	Proprietary*	>= 98 - < 100 %	Not classified
Proprietary Additive	Proprietary*	<= 0.5 %	H410
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl-	128-37-0	<= 0.1 %	H400, H410

*The specific chemical identity is withheld because it is trade secret information of Arkema Inc.

**For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1. Description of necessary first-aid measures:

Inhalation:
If inhaled, remove victim to fresh air.

Skin:
In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eyes:
Immediately flush eye(s) with plenty of water.

Ingestion:
If swallowed, DO NOT induce vomiting. Get medical attention. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms/effects, acute and delayed:

For most important symptoms and effects (acute and delayed), see Section 2 (Hazard Statements and Supplemental Information if applicable) and Section 11 (Toxicology Information) of this SDS.

4.3. Indication of immediate medical attention and special treatment needed, if necessary:

Unless otherwise noted in Notes to Physician, no specific treatment noted; treat symptomatically.

5. FIREFIGHTING MEASURES

Extinguishing media (suitable):
Water spray, Carbon dioxide (CO2), Foam, Dry chemical

Protective equipment:
Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand / NIOSH approved or equivalent).

Further firefighting advice:
Fight fire from a protected location.
Cool closed containers exposed to fire with water spray.
Closed containers of this material may explode when subjected to heat from surrounding fire.
Do not allow run-off from fire fighting to enter drains or water courses.
Fire fighting equipment should be thoroughly decontaminated after use.

Fire and explosion hazards:

When burned, the following hazardous products of combustion can occur:
Carbon oxides
Hazardous organic compounds
Polymerization is exothermic and can degenerate into an uncontrolled reaction.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, Emergency procedures, Methods and materials for containment/clean-up:
Prevent further leakage or spillage if you can do so without risk. Ventilate the area. Avoid generation of vapors. Contain and collect spillage with non-combustible absorbent material such as clean sand, earth, diatomaceous earth or non-acidic clay and place into suitable properly labeled containers for prompt disposal. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Protective equipment:
Appropriate personal protective equipment is set forth in Section 8.

7. HANDLING AND STORAGE

Handling

General information on handling:
Avoid breathing processing vapor or mist.
Handle in accordance with good industrial hygiene and safety practices. These practices include avoiding unnecessary exposure and removal of material from eyes, skin, and clothing.
Viscous materials and those supplied as solids at room temperature may require heating to facilitate handling and transfer from their original containers. This product may be heated to a maximum of 80C/176F for up to 24 hours. Do NOT use localized heat sources such as band heaters or steam. Use hot boxes or hot rooms for heating or melting. Ensure air space (oxygen) is present during product heating/melting. Do not overheat--this may compromise product quality and/or result in an uncontrolled hazardous polymerization. This product should be consumed in its entirety after heating/melting. Avoid re-heating multiple times; this may cause product degradation. If this product freezes, heat it as specified above and mix gently to redistribute the inhibitor.

Storage

General information on storage conditions:
Store out of direct sunlight in a cool well-ventilated place. Keep stabilizer levels constant to avoid explosive polymerization. An air space is required above the liquid in all containers; avoid storage under an oxygen-free atmosphere.

Storage stability – Remarks:
Inhibitor levels should be maintained. The typical shelf-life for this product is 6 months.

Storage incompatibility – General:
Store separate from:
Strong oxidizing agents
Strong reducing agents
Free radical generators
Inert gas

Oxygen scavenger.
Peroxides

Temperature tolerance – Do not store below:
32 °F (0 °C)

Temperature tolerance – Do not store above:
100 °F (38 °C)

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

Engineering controls:
Investigate engineering techniques to reduce exposures below airborne exposure limits or to otherwise reduce exposures. Provide ventilation if necessary to minimize exposures or to control exposure levels to below airborne exposure limits (if applicable see above).If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

Respiratory protection:
Avoid breathing processing vapor or mist. Where airborne exposure is likely or airborne exposure limits are exceeded (if applicable, see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components and substances released during processing. Consult respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure or where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Skin protection:
Processing of this product releases vapors or fumes which may cause skin irritation. Minimize skin contamination by following good industrial hygiene practice. Wearing protective gloves is recommended. Consult glove manufacturer to determine appropriate type glove material for given application. Avoid natural rubber gloves. Wash hands and contaminated skin thoroughly after contact with processing fumes or vapors. Wash thoroughly after handling.

Eye protection:
Use good industrial practice to avoid eye contact. Processing of this product releases vapors or fumes which may cause eye irritation. Where eye contact may be likely, wear chemical goggles and have eye flushing equipment available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Clear - colourless
Physical state:	liquid
Form:	viscous

Odor:	acrylic-like
Odor threshold:	No data available
Flash point	226 °F (108 °C) (Pensky-Martens closed cup)
Auto-ignition temperature:	No data available.
Lower flammable limit (LFL):	No data available
Upper flammable limit (UFL):	No data available
pH:	~ 7
Density:	1.146 g/cm3 (77 °F (25 °C))
Specific Gravity (Relative density):	1.146 (77 °F(25 °C))Water=1 (liquid)
Boiling point/boiling range:	No data available
Melting point/range:	No data available
Freezing point:	No data available
Evaporation rate:	No data available
Solubility in water:	negligible
Refractive index:	1.55 77 °F (25 °C)
Viscosity, dynamic:	4,300 mPa.s 140 °F (60 °C) (Method: Brookfield)
Oil/water partition coefficient:	(No data available)
Thermal decomposition:	No data available
Flammability:	See GHS Classification in Section 2 if applicable

10. STABILITY AND REACTIVITY

Stability:
This material is chemically stable under normal and anticipated storage, handling and processing conditions. However, this material can undergo hazardous polymerization.

Hazardous reactions:
Hazardous polymerisation may occur.
Polymerization is exothermic and can degenerate into an uncontrolled reaction.

Materials to avoid:
Strong reducing agents
Free radical generators
Inert gas
Oxygen scavenger.
Peroxides
Strong oxidizing agents

Conditions / hazards to avoid:
This material polymerizes exothermically in the presence of heat, contamination, oxygen free atmosphere, free radicals, peroxides and inhibitor depletion liberating heat. Avoid direct sunlight. Do NOT expose to ultraviolet light.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products :
Carbon oxides
Methacrylates
Hazardous organic compounds

11. TOXICOLOGICAL INFORMATION

Data on this material and/or its components are summarized below.

Data for Epoxy methacrylate (Proprietary)

Acute toxicity

Oral:
Practically nontoxic. (rat) LD50 > 5,000 mg/kg.

Skin Irritation:
Not irritating. (rabbit) Irritation Index: < 1. (4 h)

Eye Irritation:
Not irritating. (in vitro assay)

Skin Sensitization:
Not a sensitizer. LLNA: Local Lymph Node Assay. (mouse) No skin allergy was observed.

Repeated dose toxicity
Subchronic oral administration to rat / No adverse systemic effects reported.

Genotoxicity

Assessment in Vitro:

No genetic changes were observed in laboratory tests using: bacteria, animal cells, human cells

Developmental toxicity
Exposure during pregnancy. oral (rat) / No birth defects were observed.

12. ECOLOGICAL INFORMATION

Chemical Fate and Pathway
Data on this material and/or a similar material are summarized below.

Data for Epoxy methacrylate (Proprietary)

Stability in water:
Half-life 37 d (68 °F (20 °C)) (@pH 4)

Biodegradation:
Not readily biodegradable. (28 d) biodegradation 21 %

Octanol Water Partition Coefficient:
log Pow: = 4.63

Data for Proprietary Additive (Proprietary)

Biodegradation:
Not readily biodegradable. (28 d) < 10 %

Octanol Water Partition Coefficient:
log Pow: 10.9, at 77 °F (25 °C) (Method: calculated)

Data for Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl- (128-37-0)

Biodegradation:
Not readily biodegradable. (aerobic, 28 d) biodegradation 4.5 %

Bioaccumulation:
Bioaccumulable 56 d BCF = 280 - 2,500 (Cyprinus carpio (Carp))

Octanol Water Partition Coefficient:
log Pow: = 5.1

Ecotoxicology
Data on this material and/or its components are summarized below.

Data for Epoxy methacrylate (Proprietary)

Aquatic toxicity data:
No effect up to the limit of solubility. Poecilia reticulata (guppy) 96 h LC50 > 100 mg/l (Nominal concentration, Water accommodated fraction was tested.)

Aquatic invertebrates:
No effect up to the limit of solubility. Daphnia magna (Water flea) 48 h EC50 > 100 mg/l (Nominal concentration, Water accommodated fraction was tested., data for a similar material)

Algae:

No effect up to the limit of solubility. Pseudokirchneriella subcapitata (green algae) 72 h EC10 >= 1.1 mg/l (Measured value)

Microorganisms:
Activated sludge 3 h EC50 (Respiration inhibition) > 100 mg/l

Data for Proprietary Additive (Proprietary)

Aquatic toxicity data:
Harmful. Danio rerio (zebra fish) 96 h LD50 = 70.7 mg/l (Water accommodated fraction was tested.)

Algae:
Harmful. Desmodesmus subspicatus (green algae) 72 h EL50 (Growth inhibition) 97 mg/l

Microorganisms:
Activated sludge 3 h EC50 (Respiration inhibition) > 1,000 mg/l

Chronic toxicity to aquatic invertebrates:
Very toxic. Daphnia magna (Water flea) 21 d NOEC 0.1 mg/l

Chronic toxicity to aquatic plants:
Harmful. Desmodesmus subspicatus (green algae) 72 h EC10 (Growth inhibition) 15.4 mg/l

Data for Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl- (128-37-0)

Aquatic toxicity data:
No effect up to the limit of solubility. Brachydanio rerio (zebrafish) 96 h LC50 > 1.1 mg/l

Aquatic invertebrates:
Very toxic. Daphnia magna (Water flea) 48 h EC50 = 0.48 mg/l

Algae:
No effect up to the limit of solubility. Desmodesmus subspicatus (green algae) 72 h EC50 > 0.42 mg/l

Microorganisms:
No effect up to the limit of solubility. Activated sludge 30 min EC0 = 1,000 mg/l

Chronic toxicity to fish:
Very toxic. Oryzias latipes 30 d NOEC = 0.053 mg/l

Chronic toxicity to aquatic invertebrates:
Very toxic. Daphnia magna (Water flea) 21 d NOEC (reproduction) = 0.069 mg/l

Chronic toxicity to aquatic plants:
Very toxic. Desmodesmus subspicatus (green algae) 72 h ErC10 = 0.4 mg/l

13. DISPOSAL CONSIDERATIONS

Waste disposal:
Disposal via incineration is recommended. Dispose of in accordance with federal, state and local regulations. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits. Note: Chemical additions to, processing of, or otherwise altering this material may make this waste management information incomplete, inaccurate, or otherwise inappropriate. Furthermore, state and local waste

disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

Take appropriate measures to prevent release to the environment.

14. TRANSPORT INFORMATION

US Department of Transportation (DOT): not regulated

International Maritime Dangerous Goods Code (IMDG): not regulated

15. REGULATORY INFORMATION

Chemical Inventory Status

US. Toxic Substances Control Act	TSCA	The components of this product are all on the TSCA Inventory.
Canadian Domestic Substances List (DSL)	DSL	All components of this product are on the Canadian DSL
China. Inventory of Existing Chemical Substances in China (IECSC)	IECSC (CN)	Conforms to
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	Conforms to
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	Conforms to
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	Conforms to
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	Does not conform
Australia Inventory of Chemical Substances (AICS)	AICS	Conforms to
Taiwan. Existing Chemicals Inventory (MOL No. 10302023691)	TCSI	Conforms to

United States – Federal Regulations

SARA Title III – Section 302 Extremely Hazardous Chemicals:
The components in this product are either not SARA Section 302 regulated or regulated but present in negligible concentrations.

SARA Title III - Section 311/312 Hazard Categories:
Reactivity Hazard

SARA Title III – Section 313 Toxic Chemicals:
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - Reportable Quantity (RQ):

The components in this product are either not CERCLA regulated, regulated but present in negligible concentrations, or regulated with no assigned reportable quantity.

United States – State Regulations

New Jersey Right to Know

No components are subject to the New Jersey Right to Know Act.

Pennsylvania Right to Know

Chemical name	CAS-No.
Epoxy methacrylate	Proprietary

California Prop. 65
This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive defects.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

Latest Revision(s):

Reference number:	200004072
Date of Revision:	09/23/2019
Date Printed:	09/23/2019

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Arkema has implemented a Medical Policy regarding the use of Arkema products in Medical Devices applications that are in contact with the body or circulating bodily fluids (http://www.arkema.com/en/social-responsibility/responsible-product-management/medical-device-policy/index.html) Arkema has designated Medical grades to be used for such Medical Device applications. Products that have not been designated as Medical grades are not authorized by Arkema for use in Medical Device applications that are in contact with the body or circulating bodily fluids. In addition, Arkema strictly prohibits the use of any Arkema products in Medical Device applications that are implanted in the body or in contact with bodily fluids or tissues for greater than 30 days. The Arkema trademarks and the Arkema name shall not be used in conjunction with customers' medical devices, including without limitation, permanent or temporary implantable devices , and customers shall not represent to anyone else, that Arkema allows, endorses or permits the use of Arkema products in such medical devices.

It is the sole responsibility of the manufacturer of the medical device to determine the suitability (including biocompatibility) of all raw materials, products and components, including any medical grade Arkema products, in order to ensure that the final end-use product is safe for its end use; performs or functions as intended; and complies with all applicable legal and regulatory requirements (FDA or other national drug agencies) It is the sole responsibility of the manufacturer of the medical device to conduct all necessary tests and inspections and to evaluate the medical device under actual end-use requirements and to adequately advise and warn purchasers, users, and/or learned intermediaries (such as physicians) of pertinent risks and fulfill any postmarket surveillance obligations. Any decision regarding the appropriateness of a particular Arkema material in a particular medical device should be based on the judgment of the manufacturer, seller, the competent authority, and the treating physician.