SAFETY DATA SHEET

SR534

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, 8:30 AM to 5:30 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: SR534
Synonyms: Acrylic ester
Molecular formula: Proprietary mixture
Chemical family: Mixture
Product use: rubber industry, Plastic materials

2. HAZARDS IDENTIFICATION

Emergency Overview
Color: cloudy
Physical state: liquid
Odor: musty

***Classification of the substance or mixture:**
Skin irritation, Category 2, H315
Serious eye damage, Category 1, H318
Skin sensitisation, Category 1, H317
Chronic aquatic toxicity, Category 2, H411

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

GHS-Labelling

Hazard pictograms:

Signal word: **Danger**

Hazard statements:

H315 : Causes skin irritation.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H411 : Toxic 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:

P261 : Avoid breathing gas/mist/vapours/spray.
P264 : Wash skin thoroughly after handling.
P272 : Contaminated work clothing should not be allowed out of the workplace.
P273 : Avoid release to the environment.
P280 : Wear eye protection/ face protection.
P280 : Wear protective gloves.

Response:

P302 + P352 : IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 : IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 : Immediately call a POISON CENTER or doctor/ physician.
P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention.
P362 : Take off contaminated clothing and wash before reuse.
P391 : Collect spillage.

Disposal:

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

Supplemental information:

Potential Health Effects:

Effects due to processing releases: Irritating to eyes, respiratory system and skin.
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. Possible cross sensitization with other acrylates and methacrylates

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
2-Propenoic acid, 2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]-1,3- propanediyl ester	4986-89-4	>= 30 - < 60 %	H315, H319, H317, H411
2-Propenoic acid, 2-(hydroxymethyl)-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester	3524-68-3	>= 10 - < 30 %	H302, H318, H315, H317, H411
2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester	15625-89-5	>= 10 - < 30 %	H315, H319, H317

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

4. FIRST AID MEASURES

Inhalation:
If inhaled, remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

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

Eyes:
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

Ingestion:
If swallowed, DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

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.
Fire fighting equipment should be thoroughly decontaminated after use.
Do not allow run-off from fire fighting to enter drains or water courses.

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

In case of spill or leak:
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.

7. HANDLING AND STORAGE

Handling

General information on handling:
Do not taste or swallow.
Do not get in eyes, on skin, or on clothing.
Avoid breathing vapor or mist.
Keep container tightly closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Emptied container retains vapor and product residue.
Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

Storage

General information on storage conditions:
Keep in a dry, cool place. Store in closed containers, in a secure area to prevent container damage and subsequent spillage. 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:
The typical shelf-life for this product is 6 months. Inhibitor levels should be maintained.

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:

2-Propenoic acid, 2-(hydroxymethyl)-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (3524-68-3)

US. OARS. WEELs Workplace Environmental Exposure Level Guide

time weighted average	0.082 ppm (1 mg/m3)
Remarks:	Listed

2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (15625-89-5)

US. OARS. WEELs Workplace Environmental Exposure Level Guide

Skin designation **Remarks:**	Can be absorbed through the skin.
time weighted average **Remarks:**	1 mg/m3 Avoid skin or eye contact with liquids or aerosols.
Remarks:	Listed

Only those components with exposure limits are printed in this section. Limits with skin contact designation above have skin contact effect. Air sampling alone is insufficient to accurately quantitate exposure. Measures to prevent significant cutaneous absorption may be required. Limits with a sensitizer designation above mean that exposure to this material may cause allergic reactions.

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 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. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. 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:
Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Avoid natural rubber gloves. Wear chemical goggles, a face shield, and chemical resistant clothing such as a rubber apron when splashing may occur. Rinse immediately if skin is contaminated. Remove contaminated clothing immediately and wash before reuse. Clean protective equipment before reuse. Provide a safety shower at any location where skin contact can occur. Wash thoroughly after handling.

Eye protection:
Where there is potential for eye contact, wear a face shield, chemical goggles, and have eye flushing equipment immediately available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	cloudy
Physical state:	liquid
Odor:	musty
Odor threshold:	No data available
Flash point	> 201 °F (94 °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:	No data available

Specific Gravity (Relative density):	1.152 - 1.172 (77 °F(25 °C))
Vapor pressure:	No data available
Vapor density:	No data available
Boiling point/boiling range:	No data available
Freezing point:	No data available
Evaporation rate:	No data available
Solubility in water:	negligible
Viscosity, dynamic:	350 - 700 mPa.s 77 °F (25 °C) (Method: Brookfield)
Oil/water partition coefficient:	No data available
Thermal decomposition	No data available
Flammability (solid, gas):	Not relevant

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 oxidizing agents
Strong reducing agents
Free radical generators
Inert gas
Oxygen scavenger.
Peroxides

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
Acrylates
Hazardous organic compounds

11. TOXICOLOGICAL INFORMATION

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

Data for SR534

Acute toxicity

Oral:
Acute toxicity estimate 4,091 mg/kg.

Dermal:
Acute toxicity estimate 3,902 mg/kg.

Data for 2,2-Bis[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate (4986-89-4)

Acute toxicity

Skin Irritation:
Causes skin irritation. (Rabbit) (6 h) (tested in a mixture with similar substance(s))

Causes skin irritation. (Rabbit) (6 h) (Repeated skin exposure, tested in a mixture with similar substance(s))

Eye Irritation:
Causes serious eye damage. (Rabbit) (tested in a mixture with similar substance(s))

Skin Sensitization:
May cause an allergic skin reaction. Guinea pig maximization test. (Guinea pig) Weak skin sensitizer
Possible cross sensitization with other acrylates and methacrylates

Repeated dose toxicity
Repeated oral administration to Rat / affected organ(s): stomach / signs: tissue damage, irritation, inflammation, hyperplasia / (tested in a mixture with similar substance(s))

Reproductive effects
Reproductive/Developmental Effects Screening Assay. oral (Rat) / No toxicity to reproduction / (tested in a mixture with similar substance(s))

Other information
Possible cross sensitization with other acrylates and methacrylates

Human experience
Skin contact:
Skin allergy was observed.. Isolated case reports after exposure to a mixture containing this substance.

Data for 2-(Hydroxymethyl)-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate (3524-68-3)

Acute toxicity

Inhalation:
No deaths occurred. (Rat) 8 h LC0 (saturated vapor)

Fatal if inhaled., Inhalation of vapours due to thermal decomposition:

Skin Irritation:
Causes skin irritation. (Rabbit) (24 h) (tested in a mixture with similar substance(s))

Causes severe skin burns. (Rabbit) (24 h) (occluded exposure, tested in a mixture with similar substance(s))

Eye Irritation:
Causes serious eye damage. (Rabbit) (tested in a mixture with similar substance(s))

Skin Sensitization:
May cause allergic skin reaction. Guinea pig maximization test. (Guinea pig) Skin allergy was observed. (Strong sensitizer, tested in a mixture with similar substance(s))

Repeated dose toxicity
Subchronic dermal administration to rat and mouse / affected organ(s): Skin / signs: Hyperplasia, inflammation / (tested in a mixture with similar substance(s))

Chronic dermal administration to Mouse / affected organ(s): kidney, testes / signs: tissue damage, changes in organ structure or function, atrophy / (tested in a mixture with similar substance(s))

Repeated oral administration to Rat / affected organ(s): stomach / signs: tissue damage, irritation, inflammation, hyperplasia / (tested in a mixture with similar substance(s))

Carcinogenicity
Chronic dermal administration to Mouse / affected organ(s): spleen, lymph node / signs: Increased incidence of tumors was reported.

Chronic dermal administration to Mouse / signs: No increase in tumor incidence was reported.

Six months dermal administration to Transgenic Activated (Tg.Ac) hemizygous mouse / affected organ(s): skin / signs: Increased incidence of tumors was reported.

Genotoxicity

Assessment in Vitro:
Both positive and negative responses for genetic changes were observed in laboratory tests using: tested in a mixture with similar substance(s), animal cells, bacteria

Genotoxicity

Assessment in Vivo:
Both positive and negative responses for genetic changes were observed in laboratory tests using: mice, tested in a mixture with similar substance(s)

Developmental toxicity

Exposure during pregnancy. dermal application (Rat) / Equivocal response. (at doses that produce effects in mothers, tested in a mixture with similar substance(s))

Reproductive effects

Reproductive/Developmental Effects Screening Assay. oral (Rat) / No toxicity to reproduction / (tested in a mixture with similar substance(s))

Other information
Possible cross sensitization with other acrylates and methacrylates

Human experience
Skin contact:
Allergic reactions, irritation, dermatitis. Possible cross sensitization with other acrylates and methacrylates (liquid or aerosol)

Human experience
Eye contact:
Reported irritation of conjunctiva. (liquid or aerosol)

Data for Trimethylolpropane triacrylate (15625-89-5)

Acute toxicity

Inhalation:
No deaths occurred. (Rat) 6 h LC0 > 0.55 mg/l. (vapor)

Skin Irritation:
Causes mild skin irritation. (Rabbit) Irritation Index: 2.2 - 3.8 / 8. (4 h)

Causes skin irritation. (Rabbit) (6 h) (Repeated skin exposure)

Eye Irritation:
Causes serious eye irritation. (Rabbit) Irritation Index: 44/110.

Skin Sensitization:
May cause an allergic skin reaction. Repeated skin exposure. (Guinea pig) Skin allergy was observed. (Strong sensitizer)

Not a sensitizer. Mouse ear swelling assay. No skin allergy was observed

Repeated dose toxicity
Repeated dermal administration to rat, mouse, rabbit / affected organ(s): skin / signs: Local irritation / No adverse systemic effects reported.

Genotoxicity

Assessment in Vitro:
Both positive and equivocal responses have been reported in tests using: bacteria

Genetic changes were observed in laboratory tests using: animal cells

Genotoxicity

Assessment in Vivo:
No genetic changes were observed in a laboratory test using: mice

Developmental toxicity

Exposure during pregnancy. Oral (Rat) / No birth defects were observed.

Human experience
Skin contact:
Skin: Skin allergy was observed. Sensitization described in isolated cases. (based on reports of occupational exposure to workers)

12. ECOLOGICAL INFORMATION

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

Data for 2-Propenoic acid, 2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]-1,3- propanediyl ester (4986-89-4)

Biodegradation:
Not readily biodegradable. (28 d) biodegradation 6 - 14 % / present as a component of the test mixture

Data for 2-Propenoic acid, 2-(hydroxymethyl)-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (3524-68-3)

Biodegradation:
Not readily biodegradable. (28 d) 6 - 14 % / present as a component of the test mixture

Octanol Water Partition Coefficient:
Pow 1.4 - 2.2

Data for 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (15625-89-5)

Biodegradation:
Readily biodegradable. (28 d) biodegradation 86 %

Octanol Water Partition Coefficient:
log Pow = 0.67

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

Data for 2-Propenoic acid, 2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]-1,3- propanediyl ester (4986-89-4)

Aquatic toxicity data:
Toxic. Cyprinus carpio (Carp) 96 h LC50 3.2 mg/l (present as a component of the test mixture)

Aquatic invertebrates:
Harmful. Daphnia magna (Water flea) 48 h EC50 = 13 mg/l (present as a component of the test mixture)

Algae:
Harmful. Pseudokirchneriella subcapitata (green algae) 72 h ErC50 = 12 mg/l (present as a component of the test mixture)

Data for 2-Propenoic acid, 2-(hydroxymethyl)-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (3524-68-3)

Aquatic toxicity data:
Toxic. carp 96 h LC50 3.2 mg/l (present as a component of the test mixture)

Aquatic invertebrates:
Harmful. Daphnia magna (Water flea) 48 h EC50 = 13 mg/l (present as a component of the test mixture)

Algae:
Harmful. Pseudokirchneriella subcapitata (green algae) 72 h ErC50 = 12 mg/l (present as a component of the test mixture)

Data for 2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester (15625-89-5)

Aquatic toxicity data:
Toxic. Leuciscus idus (Golden orfe) 96 h LL50 = 1.47 mg/l

Aquatic invertebrates:
Harmful. Daphnia magna (Water flea) 48 h EC50 = 19.9 mg/l

Algae:
Toxic. Desmodesmus subspicatus (green algae) 96 h EC50 = 4.86 mg/l

Microorganisms:
Activated sludge 30 min EC20 (Respiration inhibition) = 625 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)

UN Number	:	3082
Proper shipping name	:	Environmentally hazardous substances, liquid, n.o.s.
Technical name	:	(Pentaerythritol tetraacrylate, Pentaerythritol triacrylate)
Class	:	9
Packaging group	:	III
Marine pollutant	:	yes

International Maritime Dangerous Goods Code (IMDG)

UN Number	:	3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical name	:	(PENTAERYTHRITOL TETRAACRYLATE, PENTAERYTHRITOL TRIACRYLATE)
Class	:	9

Packaging group	:	III
Marine pollutant	:	yes
Flash point	:	> 201 °F (94 °C) Pensky-Martens closed cup

15. REGULATORY INFORMATION

Chemical Inventory Status

EU. EINECS	EINECS	Conforms to
United States TSCA Inventory	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)	Conforms to
Australia Inventory of Chemical Substances (AICS)	AICS	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, Acute Health 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.
2-Propenoic acid, 2,2-bis[[(1-oxo-2-propenyl)oxy]methyl]-1,3- propanediyl ester	4986-89-4
2-Propenoic acid, 2-(hydroxymethyl)-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester	3524-68-3
2-Propenoic acid, 2-ethyl-2-[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester	15625-89-5

California Prop. 65
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Chemical Name	CAS-No.
Benzene, methyl-	108-88-3

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Latest Revision(s):

Reference number:	000000078177
Date of Revision:	11/25/2014
Date Printed:	11/25/2014

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