



SAFETY DATA SHEET

ALKOXYLATED PENTAERYTHRITOL TETRAACRYLATE

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name	ALKOXYLATED PENTAERYTHRITOL TETRAACRYLATE
Product number	48824
Synonyms; trade names	SR 494 LM, SARTOMER SR494LM, LM5401, SARTOMER LM5401
CAS number	144086-02-2

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Surface coating inks Adhesive. Chemical Intermediate
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1.3. Details of the supplier of the safety data sheet

Supplier	Univar Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 sds@univar.com
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1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
Sds No.	48824

SECTION 2: Hazards identification

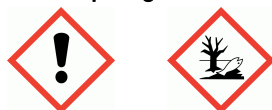
2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Eye Irrit. 2 - H319
Environmental hazards	Aquatic Chronic 2 - H411

2.2. Label elements

Hazard pictograms



Signal word	Warning
Hazard statements	H319 Causes serious eye irritation. H411 Toxic to aquatic life with long lasting effects.

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Precautionary statements	P273 Avoid release to the environment.
	P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
	P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
	P337+P313 If eye irritation persists: Get medical advice/ attention.
	P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name	ALKOXYLATED PENTAERYTHRITOL TETRAACRYLATE
CAS number	144086-02-2
Composition comments	The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information	Show this Safety Data Sheet to the medical personnel.
Inhalation	Move affected person to fresh air at once. Rinse nose and mouth with water. Get medical attention if any discomfort continues.
Ingestion	Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention if any discomfort continues.
Skin contact	Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2. Most important symptoms and effects, both acute and delayed

Eye contact	Causes serious eye irritation.
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4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Polymerises when heated. Polymerises easily with evolution of heat. Containers can burst violently or explode when heated, due to excessive pressure build-up. Toxic to aquatic life with long lasting effects.
Hazardous combustion products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

5.3. Advice for firefighters

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Protective actions during firefighting	Avoid the spillage or runoff entering drains, sewers or watercourses. Contain and collect extinguishing water.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. No smoking, sparks, flames or other sources of ignition near spillage. Provide adequate ventilation. Use explosion-proof electrical equipment. Use only non-sparking tools. Take precautionary measures against static discharges.
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6.2. Environmental precautions

Environmental precautions	Avoid the spillage or runoff entering drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.
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6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Avoid the spillage or runoff entering drains, sewers or watercourses. Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Use explosion-proof electrical equipment. Use only non-sparking tools.
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6.4. Reference to other sections

Reference to other sections	Wear protective clothing as described in Section 8 of this safety data sheet. For waste disposal, see Section 13.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid inhalation of vapours/spray and contact with skin and eyes. Take precautionary measures against static discharges. Ground/bond container and receiving equipment. If ventilation is inadequate, suitable respiratory protection must be worn. Use explosion-proof electrical equipment. Use only non-sparking tools.
Advice on general occupational hygiene	Provide eyewash station and safety shower. Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product. Remove contaminated clothing and protective equipment before entering eating areas. Take off immediately all contaminated clothing and wash it before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions	Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not store in uninhibited state. Protect from freezing and direct sunlight. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Avoid contact with the following materials: Acids. Alkalis. Oxidising agents. Reducing agents. Inert gas. Store at temperatures not exceeding 45°C. Do not store for more than 6 months.
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7.3. Specific end use(s)

Specific end use(s)	The identified uses for this product are detailed in Section 1.2.
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SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

8.2. Exposure controls

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Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Provide eyewash station and safety shower. Use explosion-proof electrical equipment.

Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Wear chemical splash goggles. Contact lenses should not be worn when working with this chemical. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Nitrile rubber. To protect hands from chemicals, gloves should comply with European Standard EN374. Do not use the following: Rubber (natural, latex).

Other skin and body protection

Wear suitable protective clothing as protection against splashing or contamination.

Hygiene measures

Do not eat, drink or smoke when using this product. Wash after use and before eating, smoking and using the toilet. Take off immediately all contaminated clothing and wash it before reuse. Remove contaminated clothing and protective equipment before entering eating areas.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour threshold	No information available.
pH	No information available.
Melting point	- 47.5°C
Initial boiling point and range	> 213°C @ 101.3 kPa
Flash point	> 170°C Closed cup.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	0.0000667 Pa @ 20°C 0.000304 Pa @ 30°C
Vapour density	No information available.

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Relative density	1.1385
Bulk density	No information available.
Solubility(ies)	1.385 g/l water @ 20°C
Partition coefficient	log Kow: 2.17 - 2.61
Auto-ignition temperature	408°C
Decomposition Temperature	No information available.
Viscosity	251 mPa s @ 20°C
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	No information available.

9.2. Other information

Other information	No information available.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	The following materials may react with the product: Acids. Alkalis. Oxidising agents. Reducing agents.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	May polymerise. Avoid heat. Do not store in uninhibited state.
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10.4. Conditions to avoid

Conditions to avoid	Avoid heat, flames and other sources of ignition. Avoid exposure to high temperatures or direct sunlight. Avoid freezing.
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10.5. Incompatible materials

Materials to avoid	Acids. Alkalis. Oxidising agents. Reducing agents. Inert gas.
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10.6. Hazardous decomposition products

Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD ₅₀)	LD ₅₀ > 5000 mg/kg, Oral, Rat OECD 401
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Acute toxicity - dermal

Notes (dermal LD ₅₀)	NOAEL 2000 mg/kg, Dermal, Rat OECD 402
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Skin corrosion/irritation

Animal data	Not irritating. Rabbit OECD 404
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Serious eye damage/irritation

Serious eye damage/irritation Irritating. Rabbit OECD 405

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility This substance has no evidence of toxicity to reproduction. Fertility - NOAEL > 80 mg/kg/day, Oral, Rat

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL > 80 mg/kg, Oral, Rat

Aspiration hazard

Aspiration hazard Not anticipated to present an aspiration hazard, based on chemical structure.

Inhalation

Gas or vapour in high concentrations may irritate the respiratory system.

Ingestion

The product irritates mucous membranes and may cause abdominal discomfort if swallowed.

Skin contact

Skin irritation should not occur when used as recommended.

Eye contact

Causes serious eye irritation.

SECTION 12: Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

12.1. Toxicity

Toxicity Toxic to aquatic life with long lasting effects.

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hours: 7.9 mg/l, Brachydanio rerio (Zebra Fish)
OECD 203

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 90.94 mg/l, Daphnia magna
OECD 202
Read-across data.

Acute toxicity - aquatic plants EC₅₀, 72 hours: > 100 mg/l, Pseudokirchneriella subcapitata
NOEC, 72 hours: 58.8 mg/l, Pseudokirchneriella subcapitata
Read-across data.
OECD 201

12.2. Persistence and degradability

Persistence and degradability Not readily biodegradable.

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Biodegradation	- Degradation 27%: 28 days OECD 301F Read-across data.
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12.3. Bioaccumulative potential

Bioaccumulative potential	Potentially bioaccumulating. Based on available data the classification criteria are not met.
Partition coefficient	log Kow: 2.17 - 2.61

12.4. Mobility in soil

Mobility	No information available.
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12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	This substance is not classified as PBT or vPvB according to current EU criteria.
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12.6. Other adverse effects

Other adverse effects	Not determined.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information	Waste is classified as hazardous waste. Do not puncture or incinerate, even when empty. Do not pressurise, cut, weld, drill, grind or otherwise expose containers to heat or sources of ignition. Toxic to aquatic life with long lasting effects. Do not discharge into drains or watercourses or onto the ground.
Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	3082
UN No. (IMDG)	3082
UN No. (ICAO)	3082
UN No. (ADN)	3082

14.2. UN proper shipping name

Proper shipping name (ADR/RID)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ALKOXYLATED PENTAERYTHRITOL TETRAACRYLATE)
Proper shipping name (IMDG)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ALKOXYLATED PENTAERYTHRITOL TETRAACRYLATE)
Proper shipping name (ICAO)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ALKOXYLATED PENTAERYTHRITOL TETRAACRYLATE)
Proper shipping name (ADN)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ALKOXYLATED PENTAERYTHRITOL TETRAACRYLATE)

14.3. Transport hazard class(es)

ADR/RID class	9
ADR/RID classification code	M6
ADR/RID label	9

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IMDG class 9

ICAO class/division 9

ADN class 9

Transport labels



14.4. Packing group

ADR/RID packing group III

IMDG packing group III

ICAO packing group III

ADN packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

EmS F-A, S-F

ADR transport category 3

Emergency Action Code •3Z

Hazard Identification Number 90
(ADR/RID)

Tunnel restriction code (-)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

Commission Regulation (EU) No 2015/830 of 28 May 2015.

This product may impact SEVESO storage regulations.

15.2. Chemical safety assessment

Not applicable.

Inventories

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Canada - DSL/NDSL

All the ingredients are listed or exempt.
DSL

US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

Japan - ENCS

All the ingredients are listed or exempt.
ENCS
ISHL

China - IECSC

All the ingredients are listed or exempt.

New Zealand - NZIOC

All the ingredients are listed or exempt.

SECTION 16: Other information

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Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
 CAS: Chemical Abstracts Service.
 DNEL: Derived No Effect Level.
 IATA: International Air Transport Association.
 IMDG: International Maritime Dangerous Goods.
 Kow: Octanol-water partition coefficient.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 PBT: Persistent, Bioaccumulative and Toxic substance.
 PNEC: Predicted No Effect Concentration.
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
 vPvB: Very Persistent and Very Bioaccumulative.
 IARC: International Agency for Research on Cancer.
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
 cATpE: Converted Acute Toxicity Point Estimate.
 BCF: Bioconcentration Factor.
 BOD: Biochemical Oxygen Demand.
 EC₅₀: 50% of maximal Effective Concentration.
 LOAEC: Lowest Observed Adverse Effect Concentration.
 LOAEL: Lowest Observed Adverse Effect Level.
 NOAEC: No Observed Adverse Effect Concentration.
 NOAEL: No Observed Adverse Effect Level.
 NOEC: No Observed Effect Concentration.
 LOEC: Lowest Observed Effect Concentration.
 DMEL: Derived Minimal Effect Level.
 EL50: Exposure Limit 50
 hPa: Hectopascal
 LL50: Lethal Loading fifty
 OECD: Organisation for Economic Co-operation and Development
 POW: Octanol-water partition coefficient
 SCBA: self-contained breathing apparatus
 STP: Sewage Treatment Plant
 VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
 Aquatic Acute = Hazardous to the aquatic environment (acute)
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

Supplier's information.

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date

20/08/2019

Version number

2.000

Supersedes date

03/06/2016

SDS number

48824

ALKOXYLATED PENTAERYTHRITOL TETRAACRYLATE

SDS status

Approved.

Hazard statements in full

H319 Causes serious eye irritation.

H411 Toxic to aquatic life with long lasting effects.

Signature

J Spenceley