

SAFETY DATA SHEET



TPS™ 32

1. PRODUCT AND COMPANY IDENTIFICATION

Company

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

Thio and Fine Chemicals

Customer Service Telephone Number: (800) 628-4453
(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: TPS™ 32
Synonyms: Polysulfide
Molecular formula: (t-C₁₂H₂₅)₂S_x
Chemical family: Polysulfide
Product use: Additive for industrial lubricants

SECTION 2: HAZARDS IDENTIFICATION

Emergency Overview

Color: colourless, yellow
Physical state: liquid
Odor: Slightly acrid

***Classification of the substance or mixture:**

Skin sensitisation, Category 1, H317

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

GHS-Labeling

Hazard pictograms:

Signal word: **Warning****Hazard statements:**

H317 : May cause an allergic skin reaction.

Precautionary statements:**Prevention:**

P261 : Avoid breathing mist or vapours.

P272 : Contaminated work clothing should not be allowed out of the workplace.

P280 : Wear protective gloves.

Response:

P302 + P352 : IF ON SKIN: Wash with plenty of soap and water.

P333 + P313 : If skin irritation or rash occurs: Get medical advice/ attention.

P363 : Wash contaminated clothing before reuse.

Disposal:

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

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	Wt/Wt	GHS Classification**
Polysulfides, di-tert-dodecyl	68425-15-0	<= 100 %	H317

Oxirane	75-21-8	< 0.1 %	H220, H280, H301, H331, H314, H318, H372, H335, H350, H340, H360
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**For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 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 soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. 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 and effects, both 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 any immediate medical attention and special treatment needed:

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

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media (suitable):

Water spray, Carbon dioxide (CO₂), Foam, Dry chemical

Extinguishing media (unsuitable):

A solid stream of water can cause frothing and spattering.

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:

Do not permit water to enter containers.
Material may spatter or foam if contacted with water.
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
Sulphur oxides
Hydrogen sulphide
Hazardous organic compounds

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.

SECTION 7: HANDLING AND STORAGE**Handling****General information on handling:**

Avoid breathing vapor or mist.
Avoid prolonged or repeated contact with skin.
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.

Storage incompatibility – General:

Store separate from:
Acids
Strong oxidizing agents

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Hydrogen peroxide
hypochlorites
Nitric acid

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Guidelines:

Oxirane (75-21-8)

US. ACGIH Threshold Limit Values

Time weighted average 1 ppm

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Reference:
Remarks: 29 CFR 1910.1047

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Short Term Exposure Limit (STEL): 5 ppm

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

OSHA Action level: 0.5 ppm

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Time weighted average 1 ppm

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 for: hydrogen sulfide, ethylene oxide. 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

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and/or its components. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical goggles. Consult OSHA Standard (29 CFR § 1910.1047 - Ethylene Oxide) to determine required type equipment for 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:

Glove materials: Nitrile rubber

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. 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 eye contact may be likely, wear chemical goggles and have eye flushing equipment available.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Color:	colourless, yellow
Physical state:	liquid
Odor:	Slightly acrid
Odor threshold:	No data available
Flash point	307 °F (153 °C) (Method: ASTM D 93)
Auto-ignition temperature:	464 °F (240 °C) (Method: Standard: A15)
Lower flammable limit (LFL):	No data available
Upper flammable limit (UFL):	No data available
pH:	No data available
Density:	1,002.8 kg/m3 (68 °F (20 °C)) (Method: OECD Test Guideline 109)
Specific Gravity (Relative density):	1.0028 (68 °F (20 °C))(Method:OECD Test Guideline 109)
Vapor pressure:	0.000 mmHg (68 °F (20 °C))(Method: OECD Test Guideline 104)

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Boiling point/boiling range:	379 °F (193 °C) (Method: OECD Test Guideline 103)
Melting point/range:	-54 °F (-48 °C)(Method: OECD Test Guideline 102)
Freezing point:	No data available.
Evaporation rate:	No data available
Solubility in water:	0.26 µg/l 68 °F (20 °C) (Method: OECD Test Guideline 105)
Solubility in other solvents: [qualitative and quantitative]	Soluble in hydrocarbons
Viscosity, kinematic:	716.19 mm ² /s 68 °F (20 °C) 130.35 mm ² /s 104 °F (40 °C)
Viscosity, dynamic:	No data available
% Volatiles:	100 %
Oil/water partition coefficient:	No data available.
Thermal decomposition:	> 392 °F (> 200 °C)
Flammability:	See GHS Classification in Section 2 if applicable

SECTION 10: STABILITY AND REACTIVITY

Stability:

The product is stable under normal handling and storage conditions.

Hazardous reactions:

None known.

Materials to avoid:

Acids
Strong oxidizing agents
Hydrogen peroxide
Hypochlorites
Nitric acid

Conditions / hazards to avoid:

To avoid thermal decomposition, do not overheat.

Hazardous decomposition products:

Thermal decomposition giving flammable and toxic products

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Carbon oxides
Sulphur oxides
Hydrogen sulphide
Hazardous organic compounds

SECTION 11: TOXICOLOGICAL INFORMATION

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

Data for Polysulfides, di-tert-dodecyl (68425-15-0)**Acute toxicity****Oral:**

No deaths occurred. (rat) LD0 > 2,500 mg/kg.

Dermal:

No deaths occurred. (rat) LD0 > 2,000 mg/kg.

Skin Irritation:

Causes mild skin irritation. (rabbit)

Eye Irritation:

Causes mild eye irritation. (rabbit)

Skin Sensitization:

Not a sensitizer. Guinea pig maximization test. No skin allergy was observed.

May cause an allergic skin reaction. LLNA: Local Lymph Node Assay. (mouse) Skin allergy was observed. Weak skin sensitizer

Repeated dose toxicity

Subchronic oral administration to rat / No adverse effects reported.

Genotoxicity**Assessment in Vitro:**

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

Genetic changes were observed in laboratory tests using: animal cells

Genotoxicity**Assessment in Vivo:**

No genetic changes were observed in a laboratory test using: rats

Developmental toxicity

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

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

SECTION 12: ECOLOGICAL INFORMATION**Chemical Fate and Pathway**

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

Data for Polysulfides, di-tert-dodecyl (68425-15-0)**Biodegradation:**

Not readily biodegradable. (28 d) biodegradation 0 %

Bioaccumulation:

Does not bioaccumulate. 14 d (Cyprinus carpio (Carp))

Octanol Water Partition Coefficient:

log Pow: > 6.2, at 162 °F (72 °C) pH = 7

Ecotoxicology

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

Data for Polysulfides, di-tert-dodecyl (68425-15-0)**Aquatic invertebrates:**

No effect up to the limit of solubility. Daphnia (water flea) 48 h NOEC < 0.1 mg/l (Water accommodated fraction was tested.)

Algae:

No effect up to the limit of solubility. Pseudokirchneriella subcapitata (green algae) 72 h EL50 > 100 mg/l (Water accommodated fraction was tested.)

Microorganisms:

Growth inhibition / Pseudomonas putida 72 h NOEC = 10.000 mg/l

Chronic toxicity to fish:

No effect up to the limit of solubility Pimephales promelas (fathead minnow) 32 d NOEC > 0.00084 mg/l

Chronic toxicity to aquatic invertebrates:

No effect up to the limit of solubility Reproduction Test / Daphnia magna (Water flea) 21 d NOEC > 0.00079 mg/l

Chronic toxicity to aquatic plants:

No effect up to the limit of solubility. Growth inhibition / Pseudokirchneriella subcapitata (green algae) 72 d NOEC > 0.08 mg/l (Water accommodated fraction was tested.)

SECTION 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

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

SECTION 14: TRANSPORT INFORMATION

US Department of Transportation (DOT): not regulated

International Maritime Dangerous Goods Code (IMDG): not regulated

SECTION 15: REGULATORY INFORMATION
Chemical Inventory Status

US. Toxic Substances Control Act	TSCA	The components of this product are all on the Active 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)	All components of this product are listed or exempted
Japan. ENCS - Existing and New Chemical Substances Inventory	ENCS (JP)	All components of this product are listed or exempted
Korea. Korean Existing Chemicals Inventory (KECI)	KECI (KR)	All components of this product are listed or exempted
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	PICCS (PH)	All components of this product are listed or exempted
Japan. ISHL - Inventory of Chemical Substances	ISHL (JP)	All components of this product are listed or exempted
Australian Inventory of Industrial Chemicals	AU AIICL	All components of this product are listed or exempted
Taiwan Chemical Substance Inventory (TCSI)	TCSI	All components of this product are listed or exempted

United States – Federal Regulations
SARA Title III – Section 302 Extremely Hazardous Chemicals:

<u>Chemical name</u>	<u>CAS-No.</u>	<u>SARA Reportable Quantities</u>	<u>SARA Threshold Planning Quantity</u>
Oxirane	75-21-8	10 lbs	1000 lbs

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

<u>Chemical name</u>	<u>CAS-No.</u>	<u>Reportable quantity</u>
Oxirane	75-21-8	10 lbs

United States – State Regulations

California Prop. 65
WARNING! This product contains a chemical known to the State of California to cause cancer.

<u>Chemical name</u>	<u>CAS-No.</u>
Oxirane	75-21-8

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

<u>Chemical name</u>	<u>CAS-No.</u>
Oxirane	75-21-8

SECTION 16: OTHER INFORMATION

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

- H220 Extremely flammable gas.
- H280 Contains gas under pressure; may explode if heated.
- H301 Toxic if swallowed.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H331 Toxic if inhaled.
- H335 May cause respiratory irritation.
- H340 May cause genetic defects.
- H350 May cause cancer.
- H360 May damage fertility or the unborn child.
- H372 Causes damage to organs through prolonged or repeated exposure.

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Latest Revision(s):

Reference number: 200005570
Date of Revision: 11/22/2022
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Product code: 001832

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