Di-tert-Dodecyl Polysulfide (TDPS 532)

Version 2.4 Revision Date 2018-11-07

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

Product information

Product Name	:	Di-tert-Dodecyl Polysulfide (TDPS 532)
Material	:	1027455, 1024828, 1058693, 1024565, 1024569, 1024566, 1024567, 1024568, 1024571, 1024570
Use	:	Lubricant Additive
Company	:	Chevron Phillips Chemical Company LP Specialty Chemicals 10001 Six Pines Drive The Woodlands, TX 77380

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)
Transport:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431

Responsible Department	:	Product Safety and Toxicology Group
E-mail address	:	SDS@CPChem.com
Website	:	www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification

:

Not a hazardous substance or mixture.

Labeling

Not a hazardous substance or mixture.

Carcinogenicity:

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

SECTION 3: Composition/information on ingredients

Synonyms : t-Dodecyl polysulfide
tertiary-Dodecyl polysulfide
Di-tert-dodecyl polysulfide

Molecular formula : UVCB

Component	CAS-No.	Weight %
Di-t-Dodecyl Polysulfide	68425-15-0	100

SECTION 4: First aid measures

General advice : No hazards which require special first aid measures.

If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of eye contact : Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

Flash point : 121 - 132 °C (250 - 270 °F)
Method: PMCC

Autoignition temperature : 240 °C (464 °F)

Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Fire and explosion protection	:	Normal measures for preventive fire protection.
Hazardous decomposition products	:	Carbon oxides. Sulfur oxides.

SECTION 6: Accidental release measures

Environmental precautions	:	Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods for cleaning up	:	Wipe up with absorbent material (e.g. cloth, fleece). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage

Handling

Advice on safe handling	:	For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.
Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers	:	Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.
Advice on common storage	:	No materials to be especially mentioned.
Use	:	Lubricant Additive

SECTION 8: Exposure controls/personal protection

Engineering measures

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection	:	Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as:. Air-Purifying Respirator for Dusts and Mists / P100. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.
Hand protection	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Eye protection	:	Eye wash bottle with pure water. Tightly fitting safety goggles.
Skin and body protection	:	Choose body protection according to the amount and concentration of the dangerous substance at the work place. Wear as appropriate:. Protective suit. Safety shoes.
Hygiene measures	:	General industrial hygiene practice.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Form	:	Liquid
Physical state	:	Liquid
Color	:	Yellow
Odor	:	Mildly unpleasant

Safety data

Flash point	:	121 - 132 °C (250 - 270 °F) Method: PMCC
Lower explosion limit	:	No data available
Upper explosion limit	:	No data available
Oxidizing properties	:	no

Autoignition temperature	:	240 °C (464 °F)
Molecular formula	:	UVCB
Molecular weight	:	Not applicable
pH	:	No data available
Melting point/range	:	-48 °C (-54 °F) at 101.30 kPa Method: OECD Test Guideline 102
Boiling point/boiling range	:	193.7 °C (380.7 °F) at 101.30 kPa Method: OECD Test Guideline 103
Vapor pressure	:	0.00 Pa at 20 °C (68 °F) Method: OECD Test Guideline 104
Relative density	:	0.94 - 1.01 at 15.6 °C (60.1 °F)
Water solubility	:	0.260 µg/l at 20 °C (68 °F) Method: OECD Test Guideline 105
Partition coefficient: n-octanol/water	:	log Pow: > 6.2 at 20 °C (68 °F) Method: OECD Test Guideline 117
Solubility in other solvents	:	Medium: Hydrocarbons Soluble Medium: Water Insoluble
Viscosity, kinematic	:	716.19 mm2/s at 20 °C (68 °F) 130.35 mm2/s at 40 °C (104 °F)
Relative vapor density	:	No data available
Evaporation rate	:	< 1

SECTION 10: Stability and reactivity

Chemical stability : This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions : Hazardous reactions: Hazardous polymerization does not occur.

Further information: No hazards to be specially mentioned.

Further information: Stable under recommended storage conditions., No hazards to be specially mentioned.

Conditions to avoid : No data available.

Hazardous decomposition products : Carbon oxides
Sulfur oxides

Other data : No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

Acute oral toxicity

Di-t-Dodecyl Polysulfide : LD50: 19,550 mg/kg
Species: Rat
Method: OECD Test Guideline 401
Information given is based on data obtained from similar substances.

Acute inhalation toxicity

Di-t-Dodecyl Polysulfide : LC50: > 15.5 mg/l
Exposure time: 4 h
Species: Rat
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Information given is based on data obtained from similar substances.

Skin irritation

Di-t-Dodecyl Polysulfide : slight irritation.

Eye irritation

Di-t-Dodecyl Polysulfide : slight irritation.

Sensitization

Di-t-Dodecyl Polysulfide : Did not cause sensitization on laboratory animals.

Repeated dose toxicity

Di-t-Dodecyl Polysulfide : Species: Rat, Male and female
Sex: Male and female
Application Route: oral gavage
Dose: 50, 250, 1000 mg/kg
Exposure time: (28 Days)
Number of exposures: daily
NOEL: 1,000 mg/kg
Method: OECD Test Guideline 407

No adverse effects expected

Genotoxicity in vitro

Di-t-Dodecyl Polysulfide : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Guideline 473
Result: negative

Test Type: Mouse lymphoma assay
Metabolic activation: with and without metabolic activation
Method: OECD Guideline 476
Result: positive

Genotoxicity in vivo

Di-t-Dodecyl Polysulfide : Test Type: Micronucleus test
Species: Rat
Cell type: Bone marrow
Route of Application: Oral
Method: Mutagenicity (micronucleus test)
Result: negative

Reproductive toxicity

Di-t-Dodecyl Polysulfide : No adverse effects expected

Developmental Toxicity

Di-t-Dodecyl Polysulfide : Species: Rat
Application Route: oral gavage
Dose: 50, 250, 1000 mg/kg bw
Number of exposures: daily
Test period: GD6 - 15
Method: OECD Guideline 414
NOAEL Teratogenicity: 1,000 mg/kg
NOAEL Maternal: 1,000 mg/kg
Animal testing did not show any effects on fetal development.

Di-tert-Dodecyl Polysulfide (TDPS 532)
Aspiration toxicity : No aspiration toxicity classification.

CMR effects

Di-t-Dodecyl Polysulfide : Mutagenicity: In vivo tests did not show mutagenic effects
Teratogenicity: Animal testing did not show any effects on fetal development.

Di-tert-Dodecyl Polysulfide (TDPS 532)
Further information : No data available.

SECTION 12: Ecological information

Toxicity to fish

Di-t-Dodecyl Polysulfide : LL50: > 100 mg/l
Exposure time: 96 h
Species: Danio rerio (Zebra Fish)
static test Method: OECD Test Guideline 203
No toxicity at the limit of solubility.

Toxicity to daphnia and other aquatic invertebrates

Di-t-Dodecyl Polysulfide : NOEC: < 0.1 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
static test Method: Directive 67/548/EEC, Annex V, C.2.
No toxicity at the limit of solubility.

Toxicity to algae

Di-t-Dodecyl Polysulfide : NOEC: < 0.08 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Growth inhibition Method: OECD Test Guideline 201
No toxicity at the limit of solubility.

Toxicity to bacteria

Di-t-Dodecyl Polysulfide : NOEC: 10,000 mg/l
Exposure time: 72 h
Species: Pseudomonas putida
Growth inhibition

Toxicity to fish (Chronic toxicity)

Di-t-Dodecyl Polysulfide : NOEC: 0.84 µg/l
Exposure time: 33 d
Species: Pimephales promelas (fathead minnow)
semi-static test
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

Di-t-Dodecyl Polysulfide : NOEC: 0.79 µg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
semi-static test
Method: OECD Test Guideline 211

Biodegradability

Di-t-Dodecyl Polysulfide	:	aerobic 0 % Testing period: 28 d Method: OECD Test Guideline 301F

Bioaccumulation

Di-t-Dodecyl Polysulfide	:	Species: Cyprinus carpio (Carp) Exposure time: 14 d Method: OECD Test Guideline 305 Does not bioaccumulate.

Results of PBT assessment

Di-t-Dodecyl Polysulfide	:	No conclusion can be reached based on available information. Further testing proposed.
Additional ecological information	:	May cause long lasting harmful effects to aquatic life.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard

Di-t-Dodecyl Polysulfide	:	This product has no known ecotoxicological effects.

Long-term (chronic) aquatic hazard

Di-t-Dodecyl Polysulfide	:	This product has no known ecotoxicological effects.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product	:	The product should not be allowed to enter drains, water courses or the soil.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
UN3334, AVIATION REGULATED LIQUID, N.O.S., (DI-TERT-DODECYL POLYSULFIDES), 9, III

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

National legislation

SARA 311/312 Hazards	:	No SARA Hazards
CERCLA Reportable Quantity	:	This material does not contain any components with a CERCLA RQ.
SARA 302 Reportable Quantity	:	This material does not contain any components with a SARA 302 RQ.
SARA 302 Threshold Planning Quantity	:	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 304 Reportable Quantity	:	This material does not contain any components with a section 304 EHS RQ.

SARA 313 Components : 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.

Clean Air Act

Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know : No components are subject to the Pennsylvania Right to Know Act.

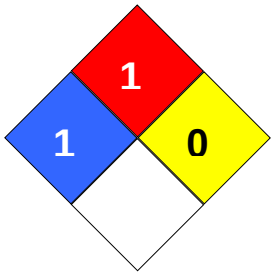
California Prop. 65 Components : This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

Europe REACH	:	On the inventory, or in compliance with the inventory
Switzerland CH INV	:	On the inventory, or in compliance with the inventory
United States of America (USA) TSCA	:	On TSCA Inventory
Canada DSL	:	All components of this product are on the Canadian DSL
Australia AICS	:	On the inventory, or in compliance with the inventory
New Zealand NZIoC	:	Not in compliance with the inventory
Japan ENCS	:	On the inventory, or in compliance with the inventory
Korea KECI	:	On the inventory, or in compliance with the inventory
Philippines PICCS	:	On the inventory, or in compliance with the inventory
China IECSC	:	On the inventory, or in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 1
Fire Hazard: 1
Reactivity Hazard: 0



Further information

Legacy SDS Number : 168720

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and	TSCA	Toxic Substance Control Act

	New Chemical Substances		
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		