

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 and its  
amendment (453/2010)

**Product:** **DI-TERT-DODECYL DISULFIDE**

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SDS No.: 005464-001 (Version 2.0 )

Date 12.12.2012 (*Cancel and replace* : 11.03.2011)

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Identification of the product

**Substance name:** DI-TERT-DODECYL DISULFIDE

REACH Registration Number: The transition time according to REACH Regulation, Article 23, is still not expired.

EC Nr: 248-468-7

CAS-No.: 27458-90-8

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

**Use of the Substance/Mixture :**

Sector of use :	Product category :
<b>SU8,9:</b> Manufacture of bulk, large scale substances (including petroleum products); manufacture of fine chemicals	<b>PC19:</b> Intermediate

### 1.3. Details of the supplier of the safety data sheet

Supplier	Arkema THIOCHIMIE 420 rue d'Estienne d'Orves 92705 Colombes Cedex, France Téléphone : +33 (0)1 49 00 80 80 Télécopie : +33 (0)1 49 00 83 96 <a href="http://www.arkema.com">http://www.arkema.com</a> <a href="mailto:pars-drp-fds@arkema.com">pars-drp-fds@arkema.com</a>
E-mail address	

### 1.4. Emergency telephone number

**+33 1 49 00 77 77**  
European emergency phone number : 112

## 2. HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

**Classification (Regulation (EC) No 1272/2008):**

Chronic aquatic toxicity, 3, H412

**Classification (Directive 67/548/EEC):**

R52/53

**Additional information:**

For the full text of the R, H, EUH-phrases mentioned in this Section, see Section 16.

### 2.2. Label elements

**Label elements (REGULATION (EC) No 1272/2008):**

**Hazardous components which must be listed on the label:**

CAS-No. : 27458-90-8

di-tert-Dodecyl disulphide

**Hazard statements:**

H412 : Harmful to aquatic life with long lasting effects.

**Precautionary statements:**

**Prevention:**

P280 : Wear protective gloves/protective clothing/eye protection/face protection.

P273 : Avoid release to the environment.

**Response:**

P332 + P313 : If skin irritation occurs: Get medical advice/ attention.

**Disposal:**

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

**Special labelling:**

EUH208 Contains: tert-Dodecanethiol. May produce an allergic reaction.

**2.3. Other hazards**

**Potential health effects:**

Skin contact: Slightly irritating to skin. Risk of skin sensitization.

Eye contact: Slightly irritating to eyes.

**Environmental Effects:**

Potentially bioaccumulable Not readily biodegradable.

**Physical and chemical hazards:**

Thermal decomposition giving flammable and toxic products. Formation of toxic products through combustion

Decomposition products: See chapter 10

**Other:**

Results of PBT and vPvB assessment : The transition time according to REACH Regulation, Article 23, is still not expired.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**3.1. Substances**

**Chemical name of the substance<sup>1</sup>:** DI-TERT-DODECYL DISULFIDE

Chemical Name <sup>1</sup>	EC-No.	CAS-No.	Concentration	Classification Directive 67/548/EEC	Classification Regulation (EC) No 1272/2008
di-tert-Dodecyl disulphide	248-468-7	27458-90-8	> 95 %	R53	Aquatic Chronic 4; H413

**Hazardous impurities :**

Chemical Name <sup>1</sup>	EC-No.	CAS-No.	Concentration	Classification Directive 67/548/EEC	Classification Regulation (EC) No 1272/2008
tert-Dodecanethiol	246-619-1	25103-58-6	0,25 - 1%	Xi; R36/38 R43 N; R50/53	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor Acute = 1 M-Factor Chronic = 1

<sup>1</sup>: See chapter 14 for Proper Shipping Name

For the full text of the R, H, EUH-phrases mentioned in this Section, see Section 16.

**4. FIRST AID MEASURES**

**4.1. & 4.2. Description of necessary first-aid measures & Most important symptoms/effects, acute and delayed:**

**General advice:**

Take off immediately all contaminated clothing.

**Inhalation:**

Move to fresh air. Oxygen or artificial respiration if needed. In case of persistent problems : Consult a physician.

**Skin contact:**

Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.

**Eye contact:**

Wash immediately, abundantly and thoroughly with water. If irritation persists, consult an ophthalmologist.

**Ingestion:**

In case of problems : Consult a doctor.

**4.3. Indication of immediate medical attention and special treatment needed, if necessary** : No data available.

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**5. FIREFIGHTING MEASURES**

**5.1. Extinguishing media**

**Suitable extinguishing media:** Water spray, Foam, Dry powder, Carbon dioxide (CO2)

**5.2. Special hazards arising from the substance or mixture:**

Thermal decomposition giving flammable and toxic products :, Hydrogen sulphide, Sulphur oxides, Carbon oxides

**5.3. Advice for firefighters:**

**Specific methods:**

Use water spray to cool unopened containers.

**Special protective actions for fire-fighters:**

In the event of fire, wear self-contained breathing apparatus. Complete suit protecting against chemicals

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**6. ACCIDENTAL RELEASE MEASURES**

**6.1. Personal precautions, protective equipment and emergency procedures:**

Keep away from heat and sources of ignition. Do not smoke. Avoid contact with skin and eyes and inhalation of vapours. Use personal protective equipment. In case of insufficient ventilation, wear suitable respiratory equipment

**6.2. Environmental precautions:**

Do not release into the environment. Do not let product enter drains.

**6.3. Methods and materials for containment and cleaning up:**

**Recovery:**

Pump into a labelled inert emergency tank. Absorb the remainder with an inert absorbent material. Shovel or sweep up. Shovel into suitable container for disposal. After cleaning, flush away traces with water. Dilute with water. Recover waste water for processing later.

**Elimination:** See chapter 13

**6.4. Reference to other sections:** None.

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**7. HANDLING AND STORAGE**

**7.1. Precautions for safe handling:**

**Technical measures/Precautions:**

Storage and handling precautions applicable to products: Liquid. Provide appropriate exhaust ventilation at machinery. Provide showers, eye-baths. Provide self-contained breathing apparatus nearby. Well ventilate empty vats and tanks before entering.

**Safe handling advice:**

Keep well away from naked flames. Remove all sources of ignition. Only use safety equipment.

**Hygiene measures:**

When using do not eat, drink or smoke. Do not get in eyes, on skin, or on clothing.  
Wash hands after handling. Remove contaminated clothing and protective equipment before entering eating areas.

**7.2. Conditions for safe storage, including any incompatibilities:**

Keep tightly closed in a dry, cool and well-ventilated place. Store away from heat and ignition sources. Store in insulated containers. Provide a catch-tank in a bunded area. Provide earthing and safe electrical equipment.

**Incompatible products:**

Strong oxidizing agents, strong bases, Powerful reducer, Alkali metals

**Packaging material:**

**Recommended:** Stainless steel, Lined metallic drums.

**To be avoided:** Copper and copper alloys

7.3. **Specific end uses:** None.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. **Control parameters:**

**Exposure Limit Values** Not relevant

#### **Derived No Effect Level (DNEL):**

The transition time according to REACH Regulation, Article 23, is still not expired.

#### **Predicted No Effect Concentration (PNEC):**

The transition time according to REACH Regulation, Article 23, is still not expired.

### 8.2. **Exposure controls:**

**General protective measures:** Provide sufficient air exchange and/or exhaust in work rooms.

#### **Personal protective equipment:**

Respiratory protection: In case of insufficient ventilation, wear suitable respiratory equipment.  
Hand protection: Gloves (synthetic rubber, Neoprene)  
Protective gloves complying with EN 374.  
Eye/face protection: Safety glasses.  
Skin and body protection: At the workplace : Combination with delayed penetration  
Intervention at incident: anti-acid suit

**Environmental exposure controls:** See chapter 6

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. **Information on basic physical and chemical properties**

#### **Appearance:**

**Physical state (20°C):** liquid  
**Colour:** Light yellow.  
**Odour:** sulphurous  
**Olfactory threshold:** No data available.  
**pH:** No data available.  
**Melting point/range:** No data available.  
**Boiling point/boiling range :** 321 °C  
**Flash point:** 118 °C  
**Evaporation rate:** No data available.  
**Flammability (solid, gas):** No data available.  
**Vapour pressure:** No data available.  
**Vapour density:** No data available.  
**Density:** 0,911 g/cm3  
**Water solubility:** No data available.  
**Partition coefficient: n-octanol/water:** log Kow : 12,46 (calculated)  
**Partition coefficient: n-octanol/water:** TERT-DODECANETHIOL : log Kow : > 6,2 , at 20 °C (OECD Test Guideline 117)  
**Autoignition temperature:** No data available.  
**Decomposition temperature:** No data available.  
**Viscosity:** No data available.  
**Explosive properties:**  
Explosivity: Not relevant (due to the chemical structure)  
**Oxidizing properties:** Not relevant (due to the chemical structure)

### 9.2. **Other data:** None.

## 10. STABILITY AND REACTIVITY

### 10.1. & 10.2. **Reactivity & Chemical stability:**

This material is chemically stable under normal and anticipated storage, handling and processing conditions.

### 10.3. **Possibility of hazardous reactions:** No data available.

### 10.4. **Conditions to avoid:**

Keep away from heat and sources of ignition. To avoid thermal decomposition, do not overheat.

**10.5. Incompatible materials to avoid:**

Strong oxidizing agents, Strong bases., Powerful reducers, Alkali metals

**10.6. Hazardous decomposition products:**

Thermal decomposition giving flammable and toxic products, Hydrogen sulphide, Sulphur oxides, Carbon oxides

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**11. TOXICOLOGICAL INFORMATION**

All available data on this product and/or the components quoted in section 3 and/or the analogue substances/metabolites have been taken into account for the hazard assessment.

**11.1. Information on toxicological effects:**

**Acute toxicity:**

**Ingestion:** **Slightly harmful by ingestion**  
Through analogy with a comparable product :

DI-TERT-DODECYL TRISULPHIDE :

- In animals : No mortality/mouse: 12.5 ml/kg

**Dermal:** **Slightly harmful in contact with skin**  
Through analogy with a comparable product :

DI-TERT-DODECYL TRISULPHIDE :

- In animals : No mortality/in rat: 2.000 mg/kg (Method: OECD Test Guideline 402)

**Local effects ( Corrosion / Irritation / Serious eye damage ):**

**Skin contact:** **Slightly irritating to skin.**  
Through analogy with a comparable product :

DI-TERT-DODECYL TRISULPHIDE :

- In animals : Mild skin irritation (OECD Test Guideline 404, rabbit)

**Eye contact:** **Slightly irritating to eyes.**  
Through analogy with a comparable product :

DI-TERT-DODECYL TRISULPHIDE :

- In animals : Mild eye irritation (OECD Test Guideline 405, rabbit)

**Respiratory or skin sensitization:**

**Inhalation:** No data available.

**Skin contact:** **Not a skin sensitizer**  
Through analogy with a comparable product :  
• In animals : No skin allergy was observed (Method: OECD Test Guideline 406 Guinea pig maximization test)  
Traces of :

TERT-DODECANETHIOL :

- In animals : Weak sensitizing effects by skin contact. (Method : OECD Test Guideline 429 LLNA: Local Lymph Node Assay, mouse)

**CMR effects :**

**Mutagenicity:** **Not genotoxic**

**In vitro**

Inactive in genotoxic in vitro tests  
Ames test in vitro:  
In vitro chromosomal abnormality test on human lymphocytes:  
In vitro gene mutations test on mammalian cells:

**Carcinogenicity:** No data available.

**Reproductive toxicity:**

**Fertility:** **Based on the available data, the substance is not suspected of having reprotoxic potential.**

**Foetal development:** **Based on the available data, the substance is not suspected of having developmental toxicity potential.**  
Through analogy with a comparable product :

DI(TERT-DODECYL) PENTASULPHIDE :  
• In animals : Exposure during pregnancy: Absence of toxic effects for foetal development. (Method: OECD Test Guideline 414, rat, By oral route)  
NOAEL: 1.000 mg/kg  
Maternal concentration without effect: 1.000 mg/kg

**Specific target organ toxicity :**

**Single exposure :** No data available.

**Repeated exposure:** **The substance or mixture is not classified as specific target organ toxicant, repeated exposure.**  
Through analogy with a comparable product :

DI(TERT-DODECYL) PENTASULPHIDE :  
• In animals : By oral route: No adverse effects reported.  
NOAEL= 1000 mg/kg/d (Method: OECD Test Guideline 407, rat, 28 Days)

**Aspiration hazard:** Not applicable

**12. ECOLOGICAL INFORMATION**

Ecotoxicology Assessment: There is no data available for this product. Take maximum precautions when handling. From its composition, it must be considered as: Toxic to aquatic life with long lasting effects.

**12.1. Toxicity :**

**Fish:** **Through analogy with a compound of the same family : , No effect up to the limit of solubility**

DI(TERT-DODECYL) PENTASULPHIDE :  
LC50, 96 h (Danio rerio (zebra fish)) : > 100 mg/l (Method: OECD Test Guideline 203, pH: 7,7 - 8,0,  
Test substance: Active ingredient) Water accommodated fraction was tested.  
LOEC : 100 mg/l

**Aquatic invertebrates:** **According to its composition, can be considered as : , Harmful to daphnia.**

DI(TERT-DODECYL) PENTASULPHIDE :  
NOEC, 48 h (Daphnia) : < 0,1 mg/l (Method: Directive 67/548/EEC, Annex V, C.2., pH: 8,2,  
Immobilization, Test substance: Active ingredient)

TERT-DODECANETHIOL :  
EC50, 48 h (Daphnia magna (Water flea)) : 0,16 mg/l (Method: OECD Test Guideline 202, pH: 7,9 - 8,0, Test substance: Active ingredient)

**Aquatic plants:** **Through analogy with a compound of the same family : , No effect up to the limit of solubility**

DI(TERT-DODECYL) PENTASULPHIDE :  
NOEC, 72 h (Pseudokirchneriella subcapitata) : < 0,08 mg/l (Method: OECD Test Guideline 201, pH: 7,2 - 7,7, Growth inhibition)

TERT-DODECANETHIOL :  
ErC50, 72 h (Pseudokirchneriella subcapitata) : > 100 mg/l (Method: OECD Test Guideline 201, Growth inhibition) > Solubility in water

**12.2. Persistence and degradability :**

**Biodegradation (In water):** **Through analogy with a comparable product : , Not readily biodegradable.**

DI(TERT-DODECYL) PENTASULPHIDE :  
Aerobic primary degradation: 0 % after 28 d (Method: OECD Test Guideline 301 F)

TERT-DODECANETHIOL :  
Aerobic primary degradation: Biochemical oxygen demand 0 % after 28 d (Method: OECD Test Guideline 301 D)

**12.3. Bioaccumulative potential :**

**Bioaccumulation:** **According to its structure, can be considered as : Potentially bioaccumulable.**  
Partition coefficient: n-octanol/water: log Kow : 12,46 (Method: calculated)

TERT-DODECANETHIOL :  
Partition coefficient: n-octanol/water: log Kow : > 6,2 , at 20 °C (Method: OECD Test Guideline 117)

**12.4. Mobility in soil - Distribution among environmental compartments:** No data available.

#### 12.5. Results of PBT and vPvB assessment :

The transition time according to REACH Regulation, Article 23, is still not expired.

#### 12.6. Other adverse effects: None known.

### 13. DISPOSAL CONSIDERATIONS

#### 13.1. Waste treatment:

**Disposal of product:** Destroy the product by incineration (in accordance with local and national regulations). Destroy absorbed product by incineration at an approved waste disposal site only in accordance with local and national regulations.

**Disposal of packaging:**

### 14. TRANSPORT INFORMATION

Regulation	UN number	Proper shipping name	Class	Label	PG	Environmentally hazardous	Other information
ADR							not regulated
ADNR							not regulated
RID							not regulated
IATA Cargo	3334	Aviation regulated liquid, n.o.s. (Di-tert-dodecyl disulfide)	9	9MI		no	
IATA Passenger	3334	Aviation regulated liquid, n.o.s. (Di-tert-dodecyl disulfide)	9	9MI		no	
IMDG						no	not regulated

### 15. REGULATORY INFORMATION

Safety data sheets: according to Regulation (EC) No. 1907/2006 and its amendment (453/2010)

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

#### 15.2. Chemical Safety Assessment:

The transition time according to REACH Regulation, Article 23, is still not expired.

#### INVENTORIES:

EINECS: Conforms to  
TSCA: Conforms to  
AICS: Conforms to  
DSL: All components of this product are on the Canadian DSL list.  
ENCS (JP): Conforms to  
KECI (KR): Conforms to  
PICCS (PH): Conforms to  
IECSC (CN): Conforms to  
NZIOC: Conforms to

### 16. OTHER INFORMATION

#### Full text of R, H, EUH-phrases referred to under sections 2 and 3

R36/38 Irritating to eyes and skin.  
R43 May cause sensitization by skin contact.  
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
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.  
H413 May cause long lasting harmful effects to aquatic life.

**Update:**

Safety datasheet sections which have been updated:		Type:
2	Classification and labelling	Revisions
15	Transport information, Inventories	Revisions

**Thesaurus:**

NOAEL : No Observed Adverse Effect Level (NOAEL)  
LOAEL : Lowest Observed Adverse Effect Level (LOAEL)  
bw : Body weight  
food : oral feed  
dw : Dry weight  
vPvB : very Persistent and very Bioaccumulative  
PBT : Persistent, Bioaccumulative and Toxic

This information applies to the PRODUCT AS SUCH and conforming to specifications of ARKEMA. In case of formulations or mixtures, it is necessary to ascertain that a new danger will not appear. The information contained is based on our knowledge of the product, at the date of publishing and it is given quite sincerely. Users are advised of possible additional hazards when the product is used in applications for which it was not intended. This sheet shall only be used and reproduced for prevention and security purposes. The references to legislative, regulatory and codes of practice documents cannot be considered as exhaustive. It is the responsibility of the person receiving the product to refer to the totality of the official documents concerning the use, the possession and the handling of the product. It is also the responsibility of the handlers of the product to pass on to any subsequent persons who will come into contact with the product (usage, storage, cleaning of containers, other processes) the totality of the information contained within this safety data sheet and necessary for safety at work, the protection of health and the protection of environment.

**NB: In this document the numerical separator of the thousands is the "." (point), the decimal separator is "," (comma).**