

SAFETY DATA SHEET



TCD alcohol DM (packed)
10660

Version / Revision
Supersedes Version

5 .00
4 .00***

Revision Date
Issuing date

13-Sep-2017
13-Sep-2017

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

1.1. Product identifier

Identification of the
substance/preparation

TCD alcohol DM (packed)

Chemical Name
CAS-No
EC No.

Tricyclodecanedimethanol / Octahydro-4,7-methano-1H-indenedimethanol
26896-48-0 / 26160-83-8
248-096-5 / 247-488-3

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

Use of the Substance /
Preparation
Uses advised against

Intermediate.
None

1.3. Details of the supplier of the safety data sheet

Company/Undertaking
Identification

OXEA GmbH
Rheinpromenade 4A
D-40789 Monheim
Germany

Product Information

Product Stewardship
FAX: +49 (0)208 693 2053
email: psq@oxea-chemicals.com

1.4. Emergency telephone number

Emergency telephone number +44 (0) 1235 239 670 (UK) available 24/7
in USA, call 800 424 9300
outside USA, call 703 527 3887, collect calls accepted available 24/7

SECTION 2: Hazards identification

Europe

2.1. Classification of the substance or mixture

This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation)

Serious eye damage/eye irritation Category 2, H319

Additional information

For full text of Hazard- and EU Hazard-statements see SECTION 16.

2.2. Label elements

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Labelling according to Regulation 1272/2008/EC and its amendments (CLP Regulation).

Hazard pictograms



Signal word

Warning

Hazard statements

H319: Causes serious eye irritation.

Precautionary statements

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.

2.3. Other hazards

PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

USA

2.1. Classification of the substance or mixture

This substance is classified in accordance with paragraph (d) of §1910.1200 (GHS-US classification).

Serious eye damage/eye irritation Category 2A, H319

OSHA Specified Hazards

Not applicable.

2.2. Label elements

Labeling according to §1910.1200 (GHS-US labeling).

Hazard symbol(s)



Signal word

Warning

Hazard statements

H319: Causes serious eye irritation.

Precautionary statements

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Prevention P264: Wash hands thoroughly after handling.
P280: Wear eye protection/face protection.

Response 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.

2.3. Other hazards

None known

SECTION 3: Composition / information on ingredients

3.1. Substances

Component	CAS-No	REACH-No	1272/2008/EC	Concentration (%)
Tricyclodecanedimethanol	26896-48-0	01-2119615403-50** *	Eye Irrit. 2; H319	> 97

Remarks

CAS 26896-48-0 Tricyclodecanedimethanol
CAS 26160-83-8 Octahydro-4,7-methano-1H-indenedimethanol.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

Keep at rest. Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

Eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

Skin

Wash off immediately with plenty of water. When symptoms persist or in all cases of doubt seek medical advice.

Ingestion

Call a physician immediately. Do not induce vomiting without medical advice.

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

Main symptoms

None known.

Special hazard

Lung irritation.

4.3. Indication of any immediate medical attention and special treatment needed

General advice

Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.

Treat symptomatically. If ingested, irrigate the stomach using activated charcoal.

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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

foam, dry chemical, carbon dioxide (CO₂), water spray

Unsuitable Extinguishing Media

Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Under conditions giving incomplete combustion, hazardous gases produced may consist of:

carbon monoxide (CO)

carbon dioxide (CO₂)

Combustion gases of organic materials must in principle be graded as inhalation poisons

Vapours are heavier than air and may spread along floors

5.3. Advice for firefighters

Special protective equipment for firefighters

Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

Precautions for firefighting

Cool containers / tanks with water spray. Dike and collect water used to fight fire. Keep people away from and upwind of fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: For personal protective equipment see section 8. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition.

For emergency responders: Personal protection see section 8.***

6.2. Environmental precautions

Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

6.3. Methods and material for containment and cleaning up

Methods for containment

Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

Methods for cleaning up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

6.4. Reference to other sections

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For personal protective equipment see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms.

Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Advice on the protection of the environment

See Section 8: Environmental exposure controls.

Incompatible products

strong oxidizing agents

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material.

Technical measures/Storage conditions

Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care.

Temperature class

T3

7.3. Specific end use(s)

Formulation
cleaning agent
Intermediate
Polymerization
laboratory chemicals

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits European Union

No exposure limits established.

Exposure limits Germany

No exposure limits established.

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Exposure limits United States of America

No exposure limits established.

8.2. Exposure controls

Appropriate Engineering controls

General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Personal protective equipment

General industrial hygiene practice

Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene measures

When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Eye protection

Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.

Hand protection

Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Suitable material	nitrile rubber
Reference substance	Di-(2-ethylhexyl)-phthalate
Evaluation	according to EN 374: level 6
Glove thickness	approx 0,55 mm
Break through time	> 480 min
Suitable material	polyvinylchloride
Reference substance	Di-(2-ethylhexyl)-phthalate
Evaluation	Information derived from practical experience
Glove thickness	approx 0.8 mm

Skin and body protection

Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

Environmental exposure controls

If possible use in closed systems. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

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Appearance Very viscous
Colour colourless
Odour mild
Odour threshold No data available
pH neutral
Melting point/range 18 °C (Pour point) @ 1013 hPa***
Boiling point/range 334,5 °C @ 1013 hPa
Flash point 191 °C
Method ISO 2719
Evaporation rate No data available
Flammability (solid, gas) Does not apply, the substance is a liquid
Lower explosion limit No data available
Upper explosion limit No data available

Vapour pressure

Values [hPa]	Values [kPa]	Values [atm]	@ °C	@ °F	Method
< 1	< 0,1	< 0,001	20	68	

Vapour density No data available

Relative density

Values	@ °C	@ °F	Method
1,136	20	68	DIN 51757

Solubility 11 g/l @ 20 °C, in water, OECD 105***

log Pow <= 2,1 (measured), OECD 117

Autoignition temperature 270 °C

Method EU A.15

Decomposition temperature No data available

Viscosity 52600 mPa*s @ 40 °C
14100000 mPa*s @ 20 °C

Method dynamic, OECD 114

Oxidizing properties Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties

Explosive properties Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties

9.2. Other information

Molecular weight 196,28

Molecular formula C₁₂ H₂₀ O₂

Refractive index 1,520 @ 50 °C

Surface tension 58,9 mN/m (1 g/l @ 20°C (68°F)), OECD 115

SECTION 10: Stability and Reactivity

10.1. Reactivity

The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

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Hazardous polymerisation does not occur.

10.4. Conditions to avoid

Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

10.5. Incompatible materials

strong oxidizing agents.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure Skin contact, Eye contact, Ingestion

Acute toxicity				
Tricyclodecanedimethanol (26896-48-0)				
Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	2250 mg/kg	rat, female	OECD 401
Dermal	LD50	> 10000 mg/kg	rat, male/female	OECD 402

Tricyclodecanedimethanol, CAS: 26896-48-0

Assessment

Based on available data, the classification criteria are not met for:

Acute oral toxicity

Acute dermal toxicity

For acute inhalation toxicity, no data are available

Irritation and corrosion

Tricyclodecanedimethanol (26896-48-0)				
Target Organ Effects	Species	Result	Method	
Skin	rabbit	No skin irritation	US Fed. Reg. 187	24h
Eyes	rabbit	irritating	US Fed. Reg. 187	

Tricyclodecanedimethanol, CAS: 26896-48-0

Assessment

The available data lead to the classification given in section 2

Based on available data, the classification criteria are not met for:

skin irritation/corrosion

For respiratory irritation, no data are available

Sensitization

Tricyclodecanedimethanol (26896-48-0)				
Target Organ Effects	Species	Evaluation	Method	
Skin	guinea pig	not sensitizing	OECD 406	

Tricyclodecanedimethanol, CAS: 26896-48-0

Assessment

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Based on available data, the classification criteria are not met for:
Skin sensitization
For respiratory sensitization, no data are available

Subacute, subchronic and prolonged toxicity				
Tricyclodecanedimethanol (26896-48-0)				
Type	Dose	Species	Method	
Subacute toxicity	NOAEL: 600 mg/kg/d (28d)	rat, male/female	OECD 422	Oral
Subchronic toxicity	NOAEL: 1000 mg/kg/d (90d)	rat, male/female	OECD 408	Oral

Tricyclodecanedimethanol, CAS: 26896-48-0

Assessment

Based on available data, the classification criteria are not met for:
STOT RE

Carcinogenicity, Mutagenicity, Reproductive toxicity					
Tricyclodecanedimethanol (26896-48-0)					
Type	Dose	Species	Evaluation	Method	
Mutagenicity		CHO (Chinese Hamster Ovary) cells	negative	OECD 473 (Chromosomal Aberration)	In vitro study
Mutagenicity		CHO (Chinese Hamster Ovary) cells	negative	OECD 476 (Mammalian Gene Mutation)	In vitro study
Mutagenicity		Salmonella typhimurium	negative	OECD 471 (Ames)	In vitro study
Reproductive toxicity	NOAEL 600 mg/kg/d	rat, parental		OECD 422, Oral	
Reproductive toxicity	NOAEL 600 mg/kg/d	rat, 1. Generation, male/female		OECD 422, Oral	
Developmental Toxicity	NOAEL 600 mg/kg/d	rat, parental		OECD 422, Oral	
Developmental Toxicity	NOAEL 600 mg/kg/d	rat, 1. Generation, male/female		OECD 422, Oral	
Developmental Toxicity	NOAEL 500 mg/kg/d	rat		OECD 414, Oral	Maternal toxicity
Developmental Toxicity	NOAEL 1000 mg/kg/d	rat		OECD 414, Oral	Developmental toxicity

Tricyclodecanedimethanol, CAS: 26896-48-0

CMR Classification

The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B

Evaluation

In vitro tests did not show mutagenic effects
Animal testing did not show any effects on fertility
In the absence of specific alerts no cancer testing is required***

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Target Organ Systemic Toxicant - Single exposure

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Based on available data, the classification criteria are not met for:
STOT SE***

Target Organ Systemic Toxicant - Repeated exposure

Based on available data, the classification criteria are not met for:
STOT RE***

Aspiration toxicity

Due to the viscosity, this product does not present an aspiration hazard

Note

Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link:

<http://echa.europa.eu/information-on-chemicals/registered-substances>.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity			
Tricyclodecanedimethanol (26896-48-0)			
Species	Exposure time	Dose	Method
Fish (fresh water)***	96h	LC50: > 100 mg/l	OECD 203
Daphnia magna (Water flea)	48h	EC50: > 100 mg/l	OECD 202
Pseudokirchneriella subcapitata	72h	EC50: > 100 mg/l (Growth rate)	OECD 201
Activated sludge (bacteriae)	3 h	EC50: 2400 mg/l	OECD 209

Long term toxicity			
Tricyclodecanedimethanol (26896-48-0)			
Type	Species	Dose	Method
Aquatic toxicity***	Pseudokirchneriella subcapitata***	EC50: 100 mg/l/3d***	OECD 201***

Terrestrial toxicity				
Tricyclodecanedimethanol (26896-48-0)				
Species	Exposure time	Dose	Type	Method
Eisenia fetida / Eisenia andrej***	28 d***	LC50: > 1000 mg/kg soil dw***	Parental mortality***	OECD 222***
Eisenia fetida / Eisenia andrej***	56 d***	NOEC: 59 mg/kg soil dw***	Reproduction***	OECD 222***
Eisenia fetida / Eisenia andrej***	56 d***	EC10: 39 mg/kg soil dw***	Reproduction***	OECD 222***
Soil microorganism***	28 d***	NOEC: 320 mg/kg soil dw***	Nitrogen transformation***	OECD 216***

12.2. Persistence and degradability

Tricyclodecanedimethanol, CAS: 26896-48-0

Biodegradation

0 % (28*** d), activated sludge, non-adapted, aerobic, OECD 301 B, Not readily biodegradable.***

Abiotic Degradation		
Tricyclodecanedimethanol (26896-48-0)		
Type	Result	Method

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Hydrolysis	not expected	
Photolysis***	No data available***	

12.3. Bioaccumulative potential

Tricyclodecanedimethanol (26896-48-0)		
Type	Result	Method
log Pow***	<= 2,1***	measured, OECD 117***
BCF***	0,768***	calculated***

12.4. Mobility in soil

Tricyclodecanedimethanol (26896-48-0)		
Type	Result	Method
Adsorption/Desorption	Koc: 16,81 @ 20 °C	calculated
Surface tension	58,9 mN/m (1 g/l @ 20°C (68°F))	OECD 115
Distribution to environmental compartments***	no data available***	

12.5. Results of PBT and vPvB assessment

Tricyclodecanedimethanol, CAS: 26896-48-0

PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

12.6. Other adverse effects

Tricyclodecanedimethanol, CAS: 26896-48-0

No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product Information

Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Hazardous waste according to European Waste Catalogue (EWC)

Uncleaned empty packaging

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

SECTION 14: Transport information

Section 14.1 - 14.6

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ICAO-TI / IATA-DGR Not restricted

IMDG Not restricted

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code not applicable

ADR/RID Not restricted

SECTION 15: Regulatory information

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

DI 2012/18/EU (Seveso III)

Category not subject

DI 1999/13/EC (VOC Guideline)

Component	Status
Tricyclodecanedimethanol CAS: 26896-48-0	not subject

International Inventories

Octahydro-4,7-methano-1H-indenedimethanol, CAS: 26160-83-8

DSL (CA)
IECSC (CN)
EC-No. 2474883 (EU)
ENCS (4)-641 (JP)
ISHL (4)-641 (JP)
PICCS (PH)
TCSI (TW)

Tricyclodecanedimethanol, CAS: 26896-48-0

AICS (AU)
DSL (CA)
IECSC (CN)
EC-No. 2480965 (EU)
ENCS (4)-641 (JP)
ISHL (4)-641 (JP)
KECI 2001-3-1986 (KR)
PICCS (PH)
TSCA (US)
NZIoC-NZ May be used as single component chemical
TCSI (TW)

SECTION 16: Other information

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

H319: Causes serious eye irritation.

Abbreviations

A table of terms and abbreviations can be found under the following link:

http://echa.europa.eu/documents/10162/13632/information_requirements_r20_en.pdf

Training advice

For effective first-aid, special training / education is needed.

Sources of key data used to compile the datasheet

Information contained in this safety data sheet is based on Oxea owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

Further information for the safety data sheet

Changes against the previous version are marked by ***. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the Oxea homepage (www.oxea-chemicals.com).

Disclaimer

For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. Oxea makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

End of Safety Data Sheet