

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision  
Supersedes Version

8  
7.01\*\*\*

Revision Date  
Issuing date

25-Jun-2021  
25-Jun-2021

## 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

Identified uses

Formulation  
cleaning agent  
Intermediate  
Polymerization  
laboratory chemicals

Uses advised against

None

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

Company/Undertaking  
Identification

**OQ Chemicals GmbH**  
Rheinpromenade 4A  
D-40789 Monheim  
Germany

Product Information

Product Stewardship  
FAX: +49 (0)208 693 2053  
email: sc.psq@oq.com

### 1.4. Emergency telephone number

Emergency telephone number +44 (0) 1235 239 670 (UK)  
available 24/7

## SECTION 2: Hazards identification

### 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

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

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

None known

### PBT and vPvB assessment

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

## SECTION 3: Composition / information on ingredients

### 3.1. Substances

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

#### Remarks

CAS 26896-48-0 Tricyclodecanedimethanol  
CAS 26160-83-8 Octahydro-4,7-methano-1H-indenedimethanol.  
For full text of Hazard- and EU Hazard-statements see SECTION 16.

## 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.

#### Skin

Wash off immediately with plenty of water. 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.

#### Ingestion

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



TCD alcohol DM (packed)  
10660

Version / Revision 8

## 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.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### Suitable extinguishing media

foam, dry chemical, carbon dioxide (CO<sub>2</sub>), 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 (CO<sub>2</sub>)

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

# SAFETY DATA SHEET



**TCD alcohol DM (packed)**  
**10660**

**Version / Revision** 8

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

For personal protective equipment see section 8.

## **SECTION 7: Handling and storage**

### 7.1. Precautions for safe handling

Further info may be available in the appropriate Exposure scenarios in the annex to this SDS.

#### 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

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

Intermediate  
Polymerization  
laboratory chemicals  
For specific end use information see the annex of this safety data sheet

## SECTION 8: Exposure controls / personal protection

### 8.1. Control parameters

#### Exposure limits European Union

No exposure limits established

#### Exposure limits UK

No exposure limits established.

#### DNEL & PNEC

#### Tricyclodecanedimethanol, CAS: 26896-48-0 Workers

DN(M)EL - long-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - local effects - Inhalation	Hazard unknown (no further information necessary)
DN(M)EL - acute / short-term exposure - local effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - long-term exposure - local effects - Dermal	Hazard unknown (no further information necessary)
DN(M)EL - acute / short-term exposure - local effects - Dermal	No hazard identified
DN(M)EL - local effects - eyes	low hazard

#### General population

DN(M)EL - long-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - local effects - Inhalation	Hazard unknown (no further information necessary)
DN(M)EL - acute / short-term exposure - local effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - long-term exposure - local effects - Dermal	Hazard unknown (no further information necessary)
DN(M)EL - acute / short-term exposure - local effects - Dermal	No hazard identified
DN(M)EL - long-term exposure - systemic effects - Oral	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Oral	No hazard identified
DN(M)EL - local effects - eyes	low hazard

#### Environment

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

PNEC aqua - freshwater	100,3 µg/l
PNEC aqua - marine water	10,03 µg/l
PNEC aqua - intermittent releases	1,003 mg/l
PNEC STP	44 mg/l
PNEC sediment - freshwater	529,68 µg/kg dw
PNEC sediment - marine water	52,97 mg/kg dw
PNEC Air	No hazard identified
PNEC soil	47 µg/kg dw
Secondary poisoning	No potential for bioaccumulation

## 8.2. Exposure controls

### Special adaptations (REACH)

Not applicable.

### 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.

Equipment should conform to EN 166

#### 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.

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

#### Skin and body protection

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

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

## 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.

## Additional advice

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>. For specific exposure controls see the annex to this safety data sheet.

## SECTION 9: Physical and chemical properties

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

<b>Appearance</b>	Very viscous				
<b>Colour</b>	colourless				
<b>Odour</b>	mild				
<b>Odour threshold</b>	No data available				
<b>pH</b>	neutral				
<b>Melting point/range</b>	18 °C (Pour point)				
<b>Method</b>	DIN ISO 3016				
<b>Boiling point/range</b>	334,5 °C @ 1013 hPa				
<b>Method</b>	OECD 103				
<b>Flash point</b>	191 °C @ 1013 hPa				
<b>Method</b>	ISO 2719				
<b>Evaporation rate</b>	No data available				
<b>Flammability (solid, gas)</b>	Does not apply, the substance is a liquid				
<b>Lower explosion limit</b>	No data available				
<b>Upper explosion limit</b>	No data available				
<b>Vapour pressure</b>					
Values [hPa]	Values [kPa]	Values [atm]	@ °C	@ °F	Method
< 1	< 0,1	< 0,001	20	68	
<b>Vapour density</b>	No data available				
<b>Relative density</b>		@ °C	@ °F	Method	
Values		20	68	DIN 51757	
1,136					
<b>Solubility</b>	11 g/l @ 20 °C, in water, OECD 105				
<b>log Pow</b>	1,2 - 2,1 (measured), OECD 117				
<b>Autoignition temperature</b>	270 °C @ 1013 hPa				
<b>Method</b>	EU A.15				
<b>Decomposition temperature</b>	No data available				
<b>Viscosity</b>	52600 mPa*s @ 40 °C				
	14100000 mPa*s @ 20 °C				
<b>Method</b>	dynamic, OECD 114				
<b>Explosive properties</b>	Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties				
<b>Oxidizing properties</b>	Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties				

### 9.2. Other information

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

**Molecular weight** 196,28  
**Molecular formula** C<sub>12</sub> H<sub>20</sub> O<sub>2</sub>  
**log K<sub>oc</sub>** 1,226 calculated  
**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

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



# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

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

## **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

<b>Sensitization</b>				
<b>Tricyclodecanedimethanol (26896-48-0)</b>				
Target Organ Effects	Species	Evaluation	Method	
Skin	guinea pig	not sensitizing	OECD 406	in vivo

## **Tricyclodecanedimethanol, CAS: 26896-48-0**

### **Assessment**

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

<b>Subacute, subchronic and prolonged toxicity</b>				
<b>Tricyclodecanedimethanol (26896-48-0)</b>				
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

<b>Carcinogenicity, Mutagenicity, Reproductive toxicity</b>					
<b>Tricyclodecanedimethanol (26896-48-0)</b>					
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	rat, parental		OECD 422, Oral	

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

	mg/kg/d				
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

## Tricyclodecanedimethanol, CAS: 26896-48-0

### Target Organ Systemic Toxicant - Single exposure

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
Oncorhynchus mykiss (rainbow trout)	96h	LC50: 100,3 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	NOEC: 100 mg/l	OECD 201

### Terrestrial toxicity

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

<b>Tricyclodecanedimethanol (26896-48-0)</b>				
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 (domestic), non-adapted, aerobic, OECD 301 B, Not readily biodegradable.

#### **Abiotic Degradation**

### Tricyclodecanedimethanol (26896-48-0)

Type	Result	Method
Hydrolysis	not expected	
Photolysis	No data available	

## 12.3. Bioaccumulative potential

### Tricyclodecanedimethanol (26896-48-0)

Type	Result	Method
log Pow	1,2 - 2,1	measured, OECD 117
BCF	5,866	calculated

## 12.4. Mobility in soil

### Tricyclodecanedimethanol (26896-48-0)

Type	Result	Method
Adsorption/Desorption	Koc: 16,81	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

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

## 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

#### ADR/RID

Not restricted

#### ADN

Not restricted

#### 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

## SECTION 15: Regulatory information

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

#### Regulation 1272/2008, Annex VI

not listed

#### DI 2012/18/EU (Seveso III)

Category not subject

#### DI 1999/13/EC (VOC Guideline)

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

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

## 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)

## National regulatory information Great Britain

### **Releases to air (Pollution Inventory Substances)**

not subject

### **Releases to water (Pollution Inventory Substances)**

not subject

### **Releases to sewer (Pollution Inventory Substances)**

not subject

### **The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 No. 758 \*\*\***

Component	Status
Tricyclodecanedimethanol CAS: 26896-48-0	The substance will not be pre-registered.***

For details and further information please refer to the original regulation

## **15.2. Chemical safety assessment**

The Chemical Safety Report (CSR) has been generated. For Exposure Scenarios see the annex.

## **SECTION 16: Other information**

### **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:

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

[http://echa.europa.eu/documents/10162/13632/information\\_requirements\\_r20\\_en.pdf](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 OQ 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 OQ homepage ([www.chemicals.oq.com](http://www.chemicals.oq.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. OQ 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**

# Annex to the extended Safety Data Sheet (eSDS)

## Exposure scenario identification

- 1 Formulation & (re)packing of substances and mixtures
- 2 Use in Cleaning Products
- 3 Use in Cleaning Products
- 4 Use in Cleaning Products
- 5 Use as Intermediate and in Polymerisation
- 6 Use in laboratories
- 7 Use in laboratories

## Number of the ES 1

Short title of the exposure scenario

**Formulation & (re)packing of substances and mixtures**

## List of use descriptors

### Sector of uses [SU]

SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

### Process categories [PROC]

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

# SAFETY DATA SHEET



**TCD alcohol DM (packed)**  
**10660**

**Version / Revision** 8

PROC3: Use in closed batch process (synthesis or formulation)  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC14: production of preparations or articles by tableting, compression, extrusion, pelettisation  
PROC15: Use as laboratory reagent  
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

## **Environmental release categories [ERC]**

ERC2: Formulation of preparations (mixtures)

## **Product characteristics**

Refer to attached safety data sheets

## **Processes and activities covered by the exposure scenario**

Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

## **Further explanations**

Industrial use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

## **Contributing Scenarios**

<b>Number of the contributing scenario</b>	<b>1</b>
<b>Contributing exposure scenario controlling environmental exposure for ERC 2</b>	

## **Further specification**

assessment tool used: Chesar 2.2 Specific Environmental Release Categories [SPERC] release factors for (Sp)ERC were modified

### **Product characteristics**

Covers percentage substance in the product up to 100 % (unless stated differently).

### **Amounts used**

Daily amount per site: 1.1 to

Annual amount per site: 11 to

Fraction of Regional tonnage used locally: 1

### **Environment factors not influenced by risk management**

River flow rate: 18000 m<sup>3</sup>/d

### **Other given operational conditions affecting environmental exposure**

Indoor/Outdoor use

### **Technical conditions and measures at process level (source) to prevent release**

Release fraction to air from process: 1%

Release fraction to wastewater from process: 0.15%

Release fraction to soil from process: 0.01%

### **Conditions and measures related to municipal sewage treatment plant**

Size of municipal sewage system/ treatment plant (m<sup>3</sup>/d): 2000

The minimum grade of elimination in the sewage plant is (%): 0,228

### **Conditions and measures related to external treatment of waste for disposal**

none

### **Conditions and measures related to external recovery of waste**

none

# SAFETY DATA SHEET



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10660

Version / Revision 8

**Number of the contributing scenario** 2  
**Contributing exposure scenario controlling worker exposure for PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 14, PROC 15**

### Further specification

Qualitative approach used to conclude safe use.

### Product characteristics

Covers percentage substance in the product:  $\geq 10\%$

### Frequency and duration of use

Frequency and duration of use 8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor and outdoor use

### Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

### Conditions and measures related to personal protection, hygiene and health evaluation

Full skin coverage with appropriate light-weight barrier material. Wear suitable gloves (tested to EN374) and eye protection.

## Exposure estimation and reference to its source

### Environment

PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 0.082 mg/l; RCR: 0.821
Fresh Water (Sediment)	PEC: 0.435 mg/kg dw; RCR: 0.821
Marine Water (Pelagic)	PEC: 0.008 mg/l; RCR: 0.821
Marine Water (Sediment)	PEC: 0.043 mg/kg dw; RCR: $< 0.01$
Agricultural Soil	PEC: 0.008 mg/kg dw; RCR: 0.176
Sewage Treatment Plant (Effluent)	PEC: 0.82 mg/l; RCR: 0.019

### Human exposure prediction (oral, dermal, inhalative)

Oral exposure is not expected to occur.

### Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as  $M(\text{site})$  [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

### associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

## Number of the ES 2

Short title of the exposure scenario

### Use in Cleaning Products



# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

## List of use descriptors

### Sector of uses [SU]

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

### Process categories [PROC]

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC10: Roller application or brushing

PROC11: Non industrial spraying

PROC15: Use as laboratory reagent

### Environmental release categories [ERC]

ERC8a: Wide dispersive indoor use of processing aids in open systems

### Product characteristics

Refer to attached safety data sheets

### Processes and activities covered by the exposure scenario

Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

### Further explanations

Professional use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

## Contributing Scenarios

### Number of the contributing scenario

1

### Contributing exposure scenario controlling environmental exposure for ERC 8a

#### Further specification

assessment tool used:, Chesar 2.2.

#### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

#### Amounts used

daily wide dispersive use: 1.65E-6 to/d

Amounts used (EU): 3 to/a

#### Environment factors not influenced by risk management

River flow rate: 18000 m<sup>3</sup>/d

#### Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

#### Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 100 %

Release fraction to wastewater from process: 100 %

Release fraction to soil from process: 0%

#### Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/ treatment plant (m<sup>3</sup>/d): 2000

The minimum grade of elimination in the sewage plant is (%): 0.228

#### Conditions and measures related to external treatment of waste for disposal

none

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

Conditions and measures related to external recovery of waste  
none

**Number of the contributing scenario** 2  
**Contributing exposure scenario controlling worker exposure for PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 15**

#### Further specification

Qualitative approach used to conclude safe use.

#### Product characteristics

Covers percentage substance in the product:  $\geq 10\%$

#### Frequency and duration of use

8 h (full shift)

#### Other given operational conditions affecting workers exposure

Indoor and outdoor use

#### Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

#### Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

### Exposure estimation and reference to its source

#### Environment

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 1,11E-4 mg/l; RCR: < 0,01
Fresh Water (Sediment)	PEC: 5.86E-4 mg/kg dw; RCR: < 0.01
Marine Water (Pelagic)	PEC: 1.114E-5 mg/l; RCR: < 0.01
Marine Water (Sediment)	PEC: 5.881E-5 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 9.464E-6 mg/kg dw; RCR: < 0.01
Sewage Treatment Plant (Effluent)	PEC: 8.231E-4 mg/l; RCR: < 0.01

#### Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as  $M(\text{site})$  [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

#### associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

### Number of the ES 3

Short title of the exposure scenario

### Use in Cleaning Products

#### List of use descriptors

# SAFETY DATA SHEET



**TCD alcohol DM (packed)**  
**10660**

**Version / Revision** 8

## Sector of uses [SU]

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

## Process categories [PROC]

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC11: Non industrial spraying

PROC15: Use as laboratory reagent

## Environmental release categories [ERC]

ERC8d: Wide dispersive outdoor use of processing aids in open systems

## Product characteristics

Refer to attached safety data sheets

## Processes and activities covered by the exposure scenario

Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

## Further explanations

Professional use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

## Number of the contributing scenario

1

## Contributing exposure scenario controlling environmental exposure for ERC 8d

### Further specification

assessment tool used:, Chesar 2.2.

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

### Amounts used

daily wide dispersive use: 1.65E-6 to/d

Fraction of EU tonnage used in region: 10%

### Environment factors not influenced by risk management

River flow rate: 18000 m<sup>3</sup>/d

### Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

### Technical conditions and measures at process level (source) to prevent release

Release fraction to air from wide dispersive use (regional only): 100 %

Release fraction to wastewater from wide dispersive use: 100 %

Release fraction to soil from wide dispersive use (regional only): 20%

### Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/ treatment plant (m<sup>3</sup>/d): 2000

The minimum grade of elimination in the sewage plant is (%): 0.228

### Conditions and measures related to external treatment of waste for disposal

none

### Conditions and measures related to external recovery of waste

none

## Number of the contributing scenario

2

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

## Contributing exposure scenario controlling worker exposure for PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 15

### Further specification

Qualitative approach used to conclude safe use.

### Product characteristics

Covers percentage substance in the product:  $\geq 10\%$

### Frequency and duration of use

8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor and outdoor use

### Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

### Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

## Exposure estimation and reference to its source

### Environment

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 1.11E-4 mg/l; RCR: < 0.01
Fresh Water (Sediment)	PEC: 5.86E-4 mg/kg dw; RCR: < 0.01
Marine Water (Pelagic)	PEC: 1.114E-5 mg/l; RCR: < 0.01
Marine Water (Sediment)	PEC: 5.881E-5 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 9.464E-6 mg/kg dw; RCR: < 0.01
Sewage Treatment Plant (Effluent)	PEC: 8.231E-4 mg/l; RCR: < 0.01

### Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as  $M(\text{site})$  [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

### associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

## Number of the ES 4

Short title of the exposure scenario

## Use in Cleaning Products

### List of use descriptors

### Sector of uses [SU]

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

# SAFETY DATA SHEET



**TCD alcohol DM (packed)**  
**10660**

**Version / Revision** 8

## Process categories [PROC]

PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional controlled exposure

PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC7: Industrial spraying

PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC10: Roller application or brushing

PROC13: Treatment of articles by dipping and pouring

PROC15: Use as laboratory reagent

## Environmental release categories [ERC]

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

## Product characteristics

Refer to attached safety data sheets

## Processes and activities covered by the exposure scenario

Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

## Further explanations

Industrial use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

## Contributing Scenarios

<b>Number of the contributing scenario</b>	<b>1</b>
<b>Contributing exposure scenario controlling environmental exposure for ERC 4</b>	

## Further specification

assessment tool used: Chesar 2.2, Specific Environmental Release Categories [SPERC], release factors for (Sp)ERC were modified.

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

### Amounts used

Daily amount per site: 0.15 to

Annual amount per site: 3 to

Fraction of Regional tonnage used locally: 1

### Environment factors not influenced by risk management

River flow rate: 18000 m<sup>3</sup>/d

### Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

### Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 100 %

Release fraction to wastewater from process: 1.1 %

Release fraction to soil from process: 5%

### Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/ treatment plant (m<sup>3</sup>/d): 2000

The minimum grade of elimination in the sewage plant is (%): 2000 3

### Conditions and measures related to external treatment of waste for disposal

none

### Conditions and measures related to external recovery of waste

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

none

**Number of the contributing scenario** 2  
**Contributing exposure scenario controlling worker exposure for**  
**PROC 1, PROC 2, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13, PROC 15**

#### Further specification

Qualitative approach used to conclude safe use.

#### Product characteristics

Covers percentage substance in the product:  $\geq 10\%$

#### Frequency and duration of use

8 h (full shift)

#### Other given operational conditions affecting workers exposure

Indoor and outdoor use

#### Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

#### Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

### Exposure estimation and reference to its source

#### Environment

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 0.082 mg/l; RCR: 0.821
Fresh Water (Sediment)	PEC: 0.435 mg/kg dw; RCR: 0.821
Marine Water (Pelagic)	PEC: 0.008 mg/l; RCR: 0.821
Marine Water (Sediment)	PEC: 0.043 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 0.01 mg/kg dw; RCR: 0.223
Sewage Treatment Plant (Effluent)	PEC: 0.823 mg/l; RCR: 0.019

#### Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as  $M(\text{site})$  [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

#### associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

### Number of the ES 5

Short title of the exposure scenario

**Use as Intermediate and in Polymerisation**

#### List of use descriptors

# SAFETY DATA SHEET



**TCD alcohol DM (packed)**  
**10660**

**Version / Revision** 8

## Sector of uses [SU]

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites  
SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

## Process categories [PROC]

PROC1: Use in closed process, no likelihood of exposure  
PROC2: Use in closed, continuous process with occasional controlled exposure  
PROC3: Use in closed batch process (synthesis or formulation)  
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises  
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)  
PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities  
PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities  
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)  
PROC15: Use as laboratory reagent

## Environmental release categories [ERC]

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles  
ERC6c: Industrial use of monomers for manufacture of thermoplastics  
ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

## Product characteristics

Refer to attached safety data sheets

## Processes and activities covered by the exposure scenario

Use as an intermediate (not related to Strictly Controlled Conditions). Includes incidental exposures during recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

Manufacture of polymers from monomers in continuous and batch processes, including sparging, discharging and reactor maintenance and immediate polymer product formation (i.e. compounding, pelletisation, product off-gassing)

## Further explanations

Industrial use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

## Contributing Scenarios

**Number of the contributing scenario**

**1**

**Contributing exposure scenario controlling environmental exposure for  
ERC 4 ERC 6a ERC 6c**

## Further specification

assessment tool used: Chesar 2.2, release factors for (Sp)ERC were modified, Specific Environmental Release Categories [SPERC].

### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

### Amounts used

Daily amount per site: 14 to

Annual amount per site: 1400 to

Fraction of Regional tonnage used locally: 1

### Environment factors not influenced by risk management

River flow rate: 18000 m<sup>3</sup>/d

### Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

### Technical conditions and measures at process level (source) to prevent release

# SAFETY DATA SHEET



**TCD alcohol DM (packed)**  
**10660**

Version / Revision 8

Release fraction to air from process: 0.02 %  
Release fraction to wastewater from process: 0.012 %  
Release fraction to soil from process: 0.1%

**Conditions and measures related to municipal sewage treatment plant**

Size of industrial sewage treatment plant (m<sup>3</sup>/d): 2000  
The minimum grade of elimination in the sewage plant is (%): 0.228

**Conditions and measures related to external treatment of waste for disposal**

none

**Conditions and measures related to external recovery of waste**

none

**Number of the contributing scenario**

2

**Contributing exposure scenario controlling worker exposure for PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 15**

**Further specification**

Qualitative approach used to conclude safe use.

**Product characteristics**

Covers percentage substance in the product:  $\geq 10$  %

**Frequency and duration of use**

8 h (full shift)

**Other given operational conditions affecting workers exposure**

Indoor and outdoor use

**Organisational measures to prevent /limit releases, dispersion and exposure**

Regular cleaning of equipment and work area  
Supervision in place to check that the RMMs in place are being used correctly and OCs followed.  
Training for staff on good practice  
Good standard of personal hygiene  
Minimization of manual phases  
Work procedures minimizing of splashes and spills  
Avoidance of contact with contaminated tools and objects

**Conditions and measures related to personal protection, hygiene and health evaluation**

Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

**Exposure estimation and reference to its source**

**Environment**

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 0.084 mg/l; RCR: 0.836
Fresh Water (Sediment)	PEC: 0.443 mg/kg dw; RCR: 0.836
Marine Water (Pelagic)	PEC: 0.008 mg/l; RCR: 0.836
Marine Water (Sediment)	PEC: 0.044 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 0.009 mg/kg dw; RCR: 0.182
Sewage Treatment Plant (Effluent)	PEC: 0.009 mg/l; RCR: 0.182

**Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES**

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as  $M(\text{site})$  [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

**associated uses:**

Should consumer uses be associated with this exposure scenario, please contact OQ for further details



# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

## Number of the ES 6

Short title of the exposure scenario

### Use in laboratories

#### List of use descriptors

##### Sector of uses [SU]

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

##### Process categories [PROC]

PROC10: Roller application or brushing

PROC15: Use as laboratory reagent

##### Environmental release categories [ERC]

ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

##### Product characteristics

Refer to attached safety data sheets

##### Processes and activities covered by the exposure scenario

Use of small quantities within laboratory settings, including material transfers and equipment cleaning

##### Further explanations

Industrial use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

## Number of the contributing scenario 1

### Contributing exposure scenario controlling environmental exposure for ERC 4

#### Further specification

assessment tool used: Chesar 2.2, Specific Environmental Release Categories [SPERC], release factors for (Sp)ERC were modified.

##### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

##### Amounts used

Daily amount per site: 0.002 to

Annual amount per site: 0.05 to

Fraction of Regional tonnage used locally: 1

##### Environment factors not influenced by risk management

River flow rate: 18000 m<sup>3</sup>/d

##### Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

##### Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 100 %

Release fraction to wastewater from process: 50 %

Release fraction to soil from process: 5%

##### Organisational measures to prevent/limit release from site

none

##### Conditions and measures related to municipal sewage treatment plant

Size of industrial sewage treatment plant (m<sup>3</sup>/d): 2000

The minimum grade of elimination in the sewage plant is (%): 2000 3

##### Conditions and measures related to external treatment of waste for disposal

none

##### Conditions and measures related to external recovery of waste

none

# SAFETY DATA SHEET



TCD alcohol DM (packed)  
10660

Version / Revision 8

**Number of the contributing scenario** 2  
**Contributing exposure scenario controlling worker exposure for PROC 10, PROC 15**

### Further specification

Qualitative approach used to conclude safe use.

### Product characteristics

Covers percentage substance in the product:  $\geq 10\%$

### Frequency and duration of use

8 h (full shift)

### Other given operational conditions affecting workers exposure

Indoor and outdoor use

### Organisational measures to prevent /limit releases, dispersion and exposure

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

### Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

## Exposure estimation and reference to its source

### Environment

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 0.062 mg/l; RCR: 0.622
Fresh Water (Sediment)	PEC: 0.33 mg/kg dw; RCR: 0.622
Marine Water (Pelagic)	PEC: 0.006 mg/l; RCR: 0.622
Marine Water (Sediment)	PEC: 0.039 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 0.006 mg/kg dw; RCR: 0.133
Sewage Treatment Plant (Effluent)	PEC: 0.624 mg/l; RCR: 0.014

### Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as  $M(\text{site})$  [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

### associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

## Number of the ES 7

Short title of the exposure scenario

## Use in laboratories

## List of use descriptors

### Sector of uses [SU]

# SAFETY DATA SHEET



**TCD alcohol DM (packed)**  
**10660**

**Version / Revision** 8

SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

## Process categories [PROC]

PROC10: Roller application or brushing  
PROC15: Use as laboratory reagent

## Environmental release categories [ERC]

ERC8a: Wide dispersive indoor use of processing aids in open systems

## Product characteristics

Refer to attached safety data sheets

## Processes and activities covered by the exposure scenario

Use of small quantities within laboratory settings, including material transfers and equipment cleaning

## Further explanations

Professional use

Human health hazard assessment:

For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

## Contributing Scenarios

<b>Number of the contributing scenario</b>	<b>1</b>
<b>Contributing exposure scenario controlling environmental exposure for ERC 8a</b>	

### Further specification

assessment tool used: Chesar 2.2.

#### Product characteristics

Covers percentage substance in the product up to 100 % (unless stated differently).

#### Amounts used

Daily amount per site:  $\leq 2.75E-7$  to

Fraction of EU tonnage used in region: 0.1

#### Environment factors not influenced by risk management

River flow rate: 18000 m<sup>3</sup>/d

#### Other given operational conditions affecting environmental exposure

Indoor/Outdoor use

#### Technical conditions and measures at process level (source) to prevent release

Release fraction to air from process: 100 %

Release fraction to wastewater from process: 100 %

Release fraction to soil from process: 0%

#### Conditions and measures related to municipal sewage treatment plant

Size of municipal sewage system/ treatment plant (m<sup>3</sup>/d): 2000

The minimum grade of elimination in the sewage plant is (%): 0.228

#### Conditions and measures related to external treatment of waste for disposal

none

#### Conditions and measures related to external recovery of waste

none

<b>Number of the contributing scenario</b>	<b>2</b>
<b>Contributing exposure scenario controlling worker exposure for PROC 10, PROC 15</b>	

### Further specification

Qualitative approach used to conclude safe use.

#### Product characteristics

Covers percentage substance in the product:  $\geq 10$  %

#### Frequency and duration of use

# SAFETY DATA SHEET



**TCD alcohol DM (packed)**  
**10660**

**Version / Revision** 8

8 h (full shift)

**Other given operational conditions affecting workers exposure**

Indoor and outdoor use

**Organisational measures to prevent /limit releases, dispersion and exposure**

Regular cleaning of equipment and work area

Supervision in place to check that the RMMs in place are being used correctly and OCs followed.

Training for staff on good practice

Good standard of personal hygiene

Minimization of manual phases

Work procedures minimizing of splashes and spills

Avoidance of contact with contaminated tools and objects

**Conditions and measures related to personal protection, hygiene and health evaluation**

Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

## Exposure estimation and reference to its source

### Environment

Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 4.237 mg/l; RCR: < 0.01
Fresh Water (Sediment)	PEC: 2.238E-4 mg/kg dw; RCR: < 0.01
Marine Water (Pelagic)	PEC: 4.278E-6 mg/l; RCR: < 0.01
Marine Water (Sediment)	PEC: 2.259E-5 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 2.629E-6 mg/kg dw; RCR: < 0.01
Sewage Treatment Plant (Effluent)	PEC: 1.372E-4 mg/l; RCR: < 0.01

### Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as  $M(\text{site})$  [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

#### associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details

## List of use descriptors

### Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Usage of release factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as  $M(\text{site})$  [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

#### associated uses:

Should consumer uses be associated with this exposure scenario, please contact OQ for further details