



# SAFETY DATA SHEET

DOW BENELUX B.V.

Safety Data Sheet according to Reg. (EU) 2020/878

**Product name:** DOWTHERM™ T Heat Transfer Fluid

**Revision Date:** 31.10.2022

**Version:** 11.0

**Print Date:** 01.11.2022

**Date of last issue:** 16.09.2022

DOW BENELUX B.V. encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier

**Product name:** DOWTHERM™ T Heat Transfer Fluid

**Chemical name of the substance:** Benzene, C14-30-alkyl derivatives

**CASRN:** 68855-24-3

**EC-No.:** 272-472-8

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

**Identified uses:** Heat transfer fluid. Intended as a heat transfer fluid for closed-loop systems. For industrial use only. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

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

#### COMPANY IDENTIFICATION

DOW BENELUX B.V.

HERBERT H.DOWWEG 5

HOEK

4542 NM TERNEUZEN

NETHERLANDS

**Customer Information Number:**

(31) 115 67 2626

SDSQuestion@dow.com

### 1.4 EMERGENCY TELEPHONE NUMBER

**24-Hour Emergency Contact:** 31-(0)115 694982

**Local Emergency Contact:** 00 31 115 69 4982

**The phone number of the national poisoning information center (NVIC). Only for the purpose of informing medical personnel in case of acute intoxications:** 088 755 8000

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

Long-term (chronic) aquatic hazard - Category 4 - H413

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

## 2.2 Label elements

### Labelling according to Regulation (EC) No 1272/2008:

#### Hazard statements

H413 May cause long lasting harmful effects to aquatic life.

#### Precautionary statements

P273 Avoid release to the environment.

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

## 2.3 Other hazards

This product contains no substances assessed to be PBT or vPvB at levels of 0.1% or higher.

#### Endocrine disrupting properties

Environment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Human Health: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

This product is a substance.

CASRN / EC-No. / Index-No.	REACH Registration Number	Concentration	Component	Classification: REGULATION (EC) No 1272/2008
CASRN 68855-24-3 EC-No. 272-472-8 Index-No. -	-	100,0%	Benzene, C14-30- alkyl derivatives	Aquatic Chronic 4; H413  Acute toxicity estimate Acute oral toxicity: > 15 800 mg/kg Acute dermal toxicity: > 7 940 mg/kg

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

Note

This substance can also be described as Benzene, mono-C10-13-alkyl derivatives, distillation residues (CASRN: 84961-70-6) and Benzene, mono-C10-14-alkyl derivatives, fractionation bottoms (CASRN: 85117-41-5).

---

## SECTION 4: FIRST AID MEASURES

---

### 4.1 Description of first aid measures

#### General advice:

First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

**Inhalation:** Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

**Skin contact:** Wash off with plenty of water.

**Eye contact:** Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

**Ingestion:** Rinse mouth with water. No emergency medical treatment necessary.

### 4.2 Most important symptoms and effects, both acute and delayed:

Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

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

**Notes to physician:** No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

---

## SECTION 5: FIREFIGHTING MEASURES

---

### 5.1 Extinguishing media

**Suitable extinguishing media:** Water fog or fine spray.. Dry chemical fire extinguishers.. Carbon dioxide fire extinguishers.. Foam.. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective..

**Unsuitable extinguishing media:** Do not use direct water stream.. May spread fire..

### 5.2 Special hazards arising from the substance or mixture

**Hazardous combustion products:** During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating..

Combustion products may include and are not limited to: Hydrocarbons.. Carbon monoxide.. Carbon dioxide..

**Unusual Fire and Explosion Hazards:** Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.. Liquid mist of this product can burn.. Flammable concentrations of vapor can accumulate at temperatures above flash point; see Section 9..

### 5.3 Advice for firefighters

**Fire Fighting Procedures:** Keep people away. Isolate fire and deny unnecessary entry.. Do not use direct water stream. May spread fire.. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.. Avoid accumulation of water. Product may be carried across water surface spreading fire or contacting an ignition source.. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage.. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS..

**Special protective equipment for firefighters:** Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves).. If protective equipment is not available or not used, fight fire from a protected location or safe distance..

---

## SECTION 6: ACCIDENTAL RELEASE MEASURES

---

**6.1 Personal precautions, protective equipment and emergency procedures:** Isolate area. Keep upwind of spill. Ventilate area of leak or spill. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

**6.2 Environmental precautions:** Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

**6.3 Methods and materials for containment and cleaning up:** Small spills: Absorb with materials such as: Non-combustible material. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

**6.4 Reference to other sections:** References to other sections, if applicable, have been provided in the previous sub-sections.

---

## SECTION 7: HANDLING AND STORAGE

---

**7.1 Precautions for safe handling:** Avoid contact with eyes, skin, and clothing. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

**7.2 Conditions for safe storage, including any incompatibilities:** Do not store in: Opened or unlabeled containers. Store away from incompatible materials. See STABILITY AND REACTIVITY section. Avoid contact with air (oxygen). Store in tightly closed container. See Section 10 for more specific information. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact.

**7.3 Specific end use(s):** See the technical data sheet on this product for further information.

---

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

---

### 8.1 Control parameters

If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

### 8.2 Exposure controls

**Engineering controls:** Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

### Individual protection measures

**Eye/face protection:** Use safety glasses (with side shields). Safety glasses (with side shields) should be consistent with EN 166 or equivalent.

#### Skin protection

**Hand protection:** Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Use chemical resistant gloves classified under Standard EN374: Protective gloves against chemicals and micro-organisms. Examples of preferred glove barrier materials include: Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Styrene/butadiene rubber. Viton. Examples of acceptable glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). When prolonged or frequently repeated contact may occur, a glove with a protection class of 4 or higher (breakthrough time greater than 120 minutes according to EN 374) is recommended. When only brief contact is expected, a glove with a protection class of 1 or higher (breakthrough time greater than 10 minutes according to EN 374) is recommended. Glove thickness alone is not a good indicator of the level of protection a glove provides against a chemical substance as this level of protection is also highly dependent on the specific composition of the material that the glove is fabricated from. The thickness of the glove must, depending on model and type of material, generally be more than 0.35 mm to offer sufficient protection for prolonged and frequent contact with the substance. As an exception to this general rule it is known that multilayer laminate gloves may offer prolonged protection at thicknesses less than 0.35 mm. Other glove materials with a thickness of less than 0.35 mm may offer sufficient protection when only brief contact is expected. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

**Other protection:** Wear clean, body-covering clothing.

**Respiratory protection:** Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.

Use the following CE approved air-purifying respirator: Organic vapor cartridge, type A (boiling point >65 °C, meeting standard EN 14387).

### Environmental exposure controls

See SECTION 7: Handling and storage and SECTION 13: Disposal considerations for measures to prevent excessive environmental exposure during use and waste disposal.

---

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

---

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state	Liquid.
Color	Yellow
Odor	Odorless
Odor Threshold	Odorless
pH	Not applicable
Melting point/freezing point	
Melting point/range	Not applicable to liquids
Freezing point	< -40 °C <i>Literature</i> Pour point
Boiling point or initial boiling point and boiling range	
Boiling point (760 mmHg)	> 320 °C <i>ASTM D86</i> (@ 1 atmosphere)
Flash point	<b>closed cup</b> >170 °C <i>ASTM D 93</i>
Flammability (solid, gas)	Not applicable to liquids
Flammability (liquids)	Not expected to be a static-accumulating flammable liquid.
Lower explosion limit	Not determined
Upper explosion limit	Not determined
Vapor Pressure	< 0,01 mmHg at 20 °C <i>Measured</i>
Relative Vapor Density (air = 1)	Not determined
Relative Density (water = 1)	0,86 - 0,89 at 15 °C <i>Literature</i>
Solubility(ies)	
Water solubility	0,001 g/L <i>Literature</i>
Partition coefficient: n-octanol/water	not determined
Auto-ignition temperature	375 °C <i>ASTM D2155</i>
Decomposition temperature	No test data available
Kinematic Viscosity	12 - 27 mm <sup>2</sup> /s at 40 °C <i>ASTM D7042</i>
Particle characteristics	
Particle size	Not applicable, liquid

### 9.2 Other information

<b>Molecular weight</b>	318 g/mol <i>Literature</i>
<b>Explosive properties</b>	No data available
<b>Oxidizing properties</b>	No data available
<b>Evaporation Rate (Butyl Acetate = 1)</b>	< 0,1 <i>Estimated.</i>

NOTE: The physical data presented above are typical values and should not be construed as a specification.

---

## **SECTION 10: STABILITY AND REACTIVITY**

---

**10.1 Reactivity:** No data available

**10.2 Chemical stability:** Thermally stable at typical use temperatures.

**10.3 Possibility of hazardous reactions:** Polymerization will not occur.

**10.4 Conditions to avoid:** No data available

**10.5 Incompatible materials:** Avoid contact with oxidizing materials.

**10.6 Hazardous decomposition products:** Decomposition products depend upon temperature, air supply and the presence of other materials..

---

## **SECTION 11: TOXICOLOGICAL INFORMATION**

---

*Toxicological information appears in this section when such data is available.*

### **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

#### **Information on likely routes of exposure**

Ingestion, Inhalation, Skin contact, Eye contact.

**Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)**

#### **Acute oral toxicity**

##### **Information for the Product:**

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

Based on product testing:  
LD50, Rat, > 15 800 mg/kg

##### **Information for components:**

##### **Benzene, C14-30-alkyl derivatives**

LD50, Rat, > 15 800 mg/kg

---

**Acute dermal toxicity****Information for the Product:**

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Based on product testing:  
LD50, Rabbit, > 7 940 mg/kg

**Information for components:****Benzene, C14-30-alkyl derivatives**

LD50, Rabbit, > 7 940 mg/kg

**Acute inhalation toxicity****Information for the Product:**

At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material may cause respiratory irritation and other effects. Excessive exposure to solvent(s) may cause respiratory irritation and central nervous system depression. Signs and symptoms of excessive exposure may include: Increased respiratory rate. Headache. Dizziness. Incoordination. Nausea and/or vomiting. Loss of appetite. Unconsciousness.

The LC50 has not been determined.

**Information for components:****Benzene, C14-30-alkyl derivatives**

The LC50 has not been determined.

**Skin corrosion/irritation****Information for the Product:**

Based on product testing:  
Prolonged contact may cause moderate skin irritation with local redness.

**Information for components:****Benzene, C14-30-alkyl derivatives**

Prolonged contact may cause moderate skin irritation with local redness.

**Serious eye damage/eye irritation****Information for the Product:**

Based on product testing:  
May cause slight eye irritation.

**Information for components:****Benzene, C14-30-alkyl derivatives**

May cause slight eye irritation.

### Sensitization

#### Information for the Product:

For skin sensitization:

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant information found.

#### Information for components:

##### Benzene, C14-30-alkyl derivatives

Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:

No relevant data found.

### Specific Target Organ Systemic Toxicity (Single Exposure)

#### Information for the Product:

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

#### Information for components:

##### Benzene, C14-30-alkyl derivatives

Evaluation of available data suggests that this material is not an STOT-SE toxicant.

### Aspiration Hazard

#### Information for the Product:

Based on available information, aspiration hazard could not be determined.

#### Information for components:

##### Benzene, C14-30-alkyl derivatives

Based on available information, aspiration hazard could not be determined.

**Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)**

### Specific Target Organ Systemic Toxicity (Repeated Exposure)

#### Information for the Product:

In animals, effects have been reported on the following organs:

Central nervous system.

#### Information for components:

**Benzene, C14-30-alkyl derivatives**

In animals, effects have been reported on the following organs:  
Central nervous system.

**Carcinogenicity**

**Information for the Product:**

No relevant data found.

**Information for components:**

**Benzene, C14-30-alkyl derivatives**

No relevant data found.

**Teratogenicity**

**Information for the Product:**

No relevant data found.

**Information for components:**

**Benzene, C14-30-alkyl derivatives**

No relevant data found.

**Reproductive toxicity**

**Information for the Product:**

No relevant data found.

**Information for components:**

**Benzene, C14-30-alkyl derivatives**

No relevant data found.

**Mutagenicity**

**Information for the Product:**

No relevant data found.

**Information for components:**

**Benzene, C14-30-alkyl derivatives**

No relevant data found.

## 11.2 Information on other hazards

### Endocrine disrupting properties

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### Information for components:

#### Benzene, C14-30-alkyl derivatives

The substance is not considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

---

## SECTION 12: ECOLOGICAL INFORMATION

---

*Ecotoxicological information appears in this section when such data is available.*

### 12.1 Toxicity

#### **Acute toxicity to aquatic invertebrates**

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

EC50, Daphnia magna (Water flea), 48 Hour, 600 mg/l

### 12.2 Persistence and degradability

**Biodegradability:** Biodegradation may occur under aerobic conditions (in the presence of oxygen).

### 12.3 Bioaccumulative potential

**Bioaccumulation:** Bioconcentration potential is high (BCF > 3000 or Log Pow between 5 and 7).

### 12.4 Mobility in soil

No relevant data found.

### 12.5 Results of PBT and vPvB assessment

This substance has not been assessed for persistence, bioaccumulation and toxicity (PBT).

**12.6 Endocrine disrupting properties** The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

#### Benzene, C14-30-alkyl derivatives

The substance is not considered to have endocrine disrupting properties according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

### 12.7 Other adverse effects

This substance is not on the Montreal Protocol list of substances that deplete the ozone layer.

---

## SECTION 13: DISPOSAL CONSIDERATIONS

---

### 13.1 Waste treatment methods

This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 2008/98/EC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water.

The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. Contact the authorized waste disposal services.

---

## SECTION 14: TRANSPORT INFORMATION

---

### Classification for ROAD and Rail transport (ADR/RID):

- |                                   |   |
|-----------------------------------|---|
| 14.1 UN number or ID number       | Not applicable  |
| 14.2 UN proper shipping name      | Not regulated for transport                                       |
| 14.3 Transport hazard class(es)   | Not applicable  |
| 14.4 Packing group                | Not applicable  |
| 14.5 Environmental hazards        | Not considered environmentally hazardous based on available data. |
| 14.6 Special precautions for user | No data available.  |

### Classification for INLAND waterways (ADNR/ADN):

Consult your Dow contact before transporting by inland waterway

### Classification for SEA transport (IMO-IMDG):

- |  |   |
|--|---|
| 14.1 UN number or ID number                                  | Not applicable  |
| 14.2 UN proper shipping name                                 | Not regulated for transport                                 |
| 14.3 Transport hazard class(es)                              | Not applicable  |
| 14.4 Packing group   | Not applicable  |
| 14.5 Environmental hazards                                   | Not considered as marine pollutant based on available data. |
| 14.6 Special precautions for user                            | No data available.  |
| 14.7 Maritime transport in bulk according to IMO instruments | Consult IMO regulations before transporting ocean bulk      |

### Classification for AIR transport (IATA/ICAO):

- |                              |                             |
|------------------------------|-----------------------------|
| 14.1 UN number or ID number  | Not applicable              |
| 14.2 UN proper shipping name | Not regulated for transport |

- 14.3 Transport hazard class(es) Not applicable  
14.4 Packing group Not applicable  
14.5 Environmental hazards Not applicable  
14.6 Special precautions for user No data available.

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

---

## SECTION 15: REGULATORY INFORMATION

---

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

#### REACH Regulation (EC) No 1907/2006

This product has been registered, according to Regulation (EC) No. 1907/2006 (REACH)., The aforementioned indications of the REACH registration status are provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. It is the buyer's/user's responsibility to ensure that his/her understanding of the regulatory status of this product is correct.

#### REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)

Conditions of restriction for the following entries should be considered:  
Number on list 3

#### Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Listed in Regulation: Not applicable

ABM (Algemene Beoordelingsmethodiek): Please contact our product stewardship specialist via the Customer Information contact details in Section 1 for information on the assessment of substances and preparations within the context of the implementation of the water discharge policy.

#### 15.2 Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture.

---

## SECTION 16: OTHER INFORMATION

---

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

H413 May cause long lasting harmful effects to aquatic life.

**Revision**

Identification Number: 74886 / A281 / Issue Date: 31.10.2022 / Version: 11.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

**Legend**

Aquatic Chronic	Long-term (chronic) aquatic hazard
-----------------	------------------------------------

**Full text of other abbreviations**

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

**Information Source and References**

This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

DOW BENELUX B.V. urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no

warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

NL