

# D (+) LIMONENE FOR SYNTHESIS

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□□ (EU) 2020/878 □□ □□ □□ REACH □□ (EC) 1907/2006 □□ □□

SDS Reference Number: 04416

□□ □□□□: 7/27/2013 □□ □□□□: 4/4/2025 □□ □□: 7/27/2013 □□: 1.0

## □□ 1: □□□□□ □□□ □□ □□

### 1.1. □□□□

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: D (+) LIMONENE FOR SYNTHESIS

EC □□ □□

: 601-096-00-2

EC □□

: 227-813-5

CAS □□

: 5989-27-5

□□ □□

: 04416

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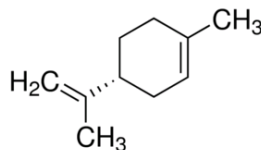
: Organic compound

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: C10H16

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:



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: (+)-Carvone, (+)-p-Mentha-1,8-diene, (R)-4-iso-Propenyl-1-methyl-1-cyclohexene

### 1.2. □□□□ □□ □□□□ □□ □□ □□ □□

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: Laboratory chemicals, Manufacture of substances

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: □□

Adhesive remover

### 1.3. □□□□□□□□ □□□ □□

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### 1.4. □□□□□□

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: + 91 22 6663 6663 (9:00am - 6:00 pm)

## □□ 2: □□□·□□□

### 2.1. □□□·□□□ □□

Regulation (EC) No.1272/2008 [CLP] □□ □□ □□

□□□ □□, □□ 3

H226

□□ □□□/□□ □□□, □□ 2

H315

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H317

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H304

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H410

□□(H) □□ □ EUH □□ □□: 16□ □□.

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## 2.2. □□□□□□ □□ □□□□ □□

□□ (EC) No. 1272/2008 □□ □□ □□ [CLP]

□□ □□ □□□□ (CLP)



□□□ (CLP)

□□·□□ □□ (CLP)

□□ □□ □□ (CLP)

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- : H226 - □□□ □□ □□□.
- : H304 - □□□ □□□ □□□□ □□□□ □□□.
- : H315 - □□□ □□□ □□□.
- : H317 - □□□□□ □□ □□□ □□□ □□□.
- : H410 - □□□ □□□ □□ □□□□□□ □□ □□□.
- : P210 - □·□□□ □□·□□□·□□·□□ □□□□□□ □□□□□□. □□.
- : P273 - □□□□ □□□□ □□□.
- : P280 - □□□□, □□□, □□□, □□□□□ □(□) □□□□□.
- : P301+P310 - □□□□ □□ □□ □□ □□ □□ □□ □(□) □□□□.
- : P303+P361+P353 - □□(□□ □□□□)□ □□□ □□□ □□ □□□□ □□ □□□□. □□□ □□ □□□□.

## 2.3. □□ □□

Contains no PBT and/or vPvB substances ≥ 0.1% assessed in accordance with REACH Annex XIII

## □□ 3: □□□□□ □□ □□□□

### 3.1. □□□□

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□□	□□□□	%
D (+) LIMONENE	CAS □□: 5989-27-5 EC □□: 227-813-5 EC □□ □□: 601-096-00-2	100

## □□ 4: □□□□□□

### 4.1. □□□□ □□

- □□ □□ : Call a physician immediately.
- □□ : □□□ □□□ □□ □□□ □□□□ □□ □□□ □□□ □□□□. Give oxygen or artificial respiration if necessary. If you feel unwell, seek medical advice.
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- □□ : Rinse mouth out with water. If you feel unwell, seek medical advice. Do not induce vomiting. Call a physician immediately.
- First-aid measures for first aider : □□□□ □□□□ □□□ □□ □□ □□□ □□□□ □□□.

### 4.2. □□ □□□□ □□ □□□□ □□ □□□

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- □□ □□□/□□ : □□□ □□□ □□□□. □□. □□□□□ □□ □□□ □□□ □□□.
- □□□/□□ : None under normal conditions.
- □□□/□□ : Risk of lung oedema.

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## 4.3. □□□□ □□ □□ □□ □□ □□ □□

Treat symptomatically.

## □□ 5: □□·□□□ □□□□

### 5.1. □□□ □□□

- □□□ : dry chemical powder, alcohol-resistant foam, carbon dioxide (CO2). Water spray. Dry powder. Foam. Carbon dioxide.
- □□□ : Do not use a heavy water stream.

### 5.2. □□□□□□ □□□ □□ □□□

- □□ : □□□ □□ □□□.
- □□ : May form flammable/explosive vapour-air mixture.
- □□□□ □□□ □□ : Toxic fumes may be released.

### 5.3. □□□□ □□□□ □□□□

- □□ : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
- □□ □□□ : Do not attempt to take action without suitable protective equipment. □□□ □□□□□. Complete protective clothing.

## □□ 6: □□□□□ □□□□

### 6.1. □□□ □□□□ □□ □□□ □□□□ □□□□

- □□ : □□□□ □□□□□. Use special care to avoid static electric charges. No open flames. No smoking. □□□ □□□□ □□ □□□□ □□□ □□□□. □□□ □□□ □□ □□□□□ □□□ □□ □□□ □□ □□□□□.
- □□ □□ : Wear recommended personal protective equipment.
- □□ : Ventilate spillage area. Evacuate unnecessary personnel. □□, □□□□ □□ □□. □□. □□ □□ □□□ □□ □□□□. □□/□/□□/□□□/□□/□□□□ □□□ □□□□.
- □□ □□ : Do not attempt to take action without suitable protective equipment. □□ □□□ □□□ □□ 8: "□□□□ □□ □□□□□"□ □□□□□.
- □□ : Evacuate unnecessary personnel. □□□□ □□□□ □□ □□□□ □□□ □□□□.

### 6.2. □□□ □□□□ □□ □□□ □□□□

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### 6.3. □□ □□ □□ □□

- : □□□□ □□□□□. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak without risks if possible.
- □□ : Take up liquid spill into absorbent material. □□□□ □□□□. On land, sweep or shovel into suitable containers. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. □□ □□□ □□ □□□□□ □□□ □□ □□□ □□.
- □□ □□□□ : Dispose of materials or solid residues at an authorized site.

### 6.4. □□ □□ □□

For further information refer to section 13.

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## □□ 7: □□ □ □□□□

### 7.1. □□□□□□

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- : Handle empty containers with care because residual vapours are flammable.
- : Ensure good ventilation of the work station. No open flames. No smoking. □□□ □□ □□□ □□□□. □□□□ □□□□ □□ □□□ □□□□□. □□/□/□□/□□□/□□□□ □ □□□ □□□□. □, □□□ □□, □□□, □□ □ □ □□ □□□□□□ □□□□□. □□. □□□ □□□□□ □□□□□. □□ □ □□□ □□□ □□□ □ □□. Use explosion-proof equipment. □□ □□□□ □□□□□. □□ □ □□□ □□□ □□□□.
- : □□ □□□ □□ □□ □(□) □□□ □□□□□. □□□ □□□ □□□ □□□ □□□□ □□□. □□ □□ □ □□□ □□□ □□□□□. □ □□□ □□□ □□□ □□□, □□□□ □□□□ □□□. Always wash hands after handling the product.

### 7.2. □□□□ □□□ □□□ □□□ □□ □□

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- : Proper grounding procedures to avoid static electricity should be followed. □□□ □□□□□ □□□□ □. □□□ □□□□□□□□□□□□□□□□□.
- : □□□ □□□ □□□□□□. Store in original container. □□□ □□□ □□□□□□. □□□ □ □□ □□ □□□□ □. □□□□ □□□□□□□. □□□□□ □□ □□□□□□.
- : Heat sources.
- : Store always product in container of same material as original container.

### 7.3. □□ □□ □□

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## □□ 8: □□□□ □ □□□□□

### 8.1. □□ □□ □□

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### 8.2. □□□□

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Ensure good ventilation of the work station.

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Wear recommended personal protective equipment.

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Chemical goggles or safety glasses

#### Skin protection

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Wear a mask

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Protective gloves

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Wear appropriate mask

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## □□ 9: □□□□□ □□

### 9.1. □□□□ □□□□□ □□□ □□ □□

□□□ □□ : □□  
□□ : Colourless to pale yellow.  
□□ : Clear liquid.  
□□□ : 136.24 g/mol  
□□ : Citrus odour.  
□□ □□ : □□□□  
□□□ : □□□□  
□□□ : -74.35 °C  
□□ □□□□ □□□ □□ : 175 – 178 °C  
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□□ □□□ : 0.7 vol %  
□□ □□□ : 6.1 vol %  
□□□ : 48 °C  
□□□□ □□ : 237 °C  
□□ □□ : □□□□  
pH : □□□□  
□□(□□□) : □□□□  
□□□ : □: Immiscible  
□□□: Miscible with ethanol  
□□□: Miscible with ether  
Partition coefficient n-octanol/water (Log Kow) : □□□□  
□□□ : 1.98 mm Hg at 25 °C  
50°C□□□□ □□□ : □□□□  
□□ : 0.841 g/cm<sup>3</sup> at 20 °C  
□□ : □□□□  
20°C□□□□ □□ □□ □□ : 4.7 (Air = 1)  
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### 9.2. □ □□ □□□□

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## □□ 10: □□□ □ □□□

### 10.1. □□□

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### 10.2. □□□ □□□

□□□ □□ □ □□. May form flammable/explosive vapour-air mixture.

### 10.3. □□ □□□ □□□

No dangerous reactions known under normal conditions of use.

### 10.4. □□□ □ □□

Open flame. Overheating. □□□□. □. Sparks. □□□ □□□ □□□ □□□□. □□, □□□, □□□□ □□ □□□□□□.

### 10.5. □□□ □ □□

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## 10.6. □□□ □□□□ □□□□

May release flammable gases.

## □□ 11: □□□ □□ □□

### 11.1. □□ (EC) No 1272/2008 □□□□, □□□ □□□ □□ □□

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### 11.2. □□ □□ □□

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## □□ 12: □□□ □□□ □□

### 12.1. □□

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### 12.2. □□□ □ □□□

#### D (+) LIMONENE FOR SYNTHESIS (5989-27-5)

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#### D (+) LIMONENE (5989-27-5)

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### 12.3. □□ □□□

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### 12.4. □□ □□□

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### 12.5. PBT □ vPvB □□ □□

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### 12.6. □□□ □□ □□

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### 12.7. □□ □□ □□

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## □□ 13: □□□ □□□□

### 13.1. □□□ □□□

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: Disposal must be done according to official regulations.

: Dispose of contents/container in accordance with licensed collector's sorting instructions.

: Disposal must be done according to official regulations.

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Disposal must be done according to official regulations.

: Handle empty containers with care because residual vapours are flammable. □□ □ □□□ □□□ □□

□ □ □□. Do not re-use empty containers.

## □□ 14: □□□ □□□ □□

ADR / IMDG / IATA / ADN / RID □□ □□

### 14.1. UN □□ □□ ID □□

UN-□□ (ADR)

: UN 2052

UN-□□ (IMDG)

: UN 2052

UN-□□ (IATA)

: UN 2052

UN-□□ (ADN)

: UN 2052

UN-□□ (RID)

: UN 2052

### 14.2. UN □□ □□□

□□ □□□ (ADR)

: □□□□

□□ □□□ (IMDG)

: DIPENTENE

□□ □□□ (IATA)

: Dipentene

□□ □□□ (ADN)

: □□□□

□□ □□□ (RID)

: □□□□

□□ □□ □□ (ADR) (ADR)

: UN 2052 □□□□, 3, III, (D/E), □□□ □□

□□ □□ □□ (IMDG)

: UN 2052 DIPENTENE, 3, III, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS (43°C c.c.)

□□ □□ □□ (IATA)

: UN 2052 Dipentene, 3, III, ENVIRONMENTALLY HAZARDOUS

□□ □□ □□ (ADN)

: UN 2052 □□□□, 3, III, □□□ □□

□□ □□ □□ (RID)

: UN 2052 □□□□, 3, III, □□□ □□

### 14.3. □□□□□ □□□ □□

#### ADR

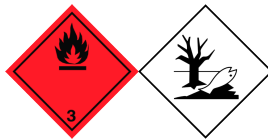
□□□□□ □□□ □□ (ADR)

: 3

□□ □□ (ADR)

: 3

:



#### IMDG

□□□□□ □□□ □□ (IMDG)

: 3

□□ □□ (IMDG)

: 3

:



#### IATA

□□□□□ □□□ □□ (IATA)

: 3

□□ □□ (IATA)

: 3

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## ADN

□□□□□ □□□ □□ (ADN)  
 □□ □□ (ADN)

: 3  
 : 3  
 :



## RID

□□□□□ □□□ □□ (RID)  
 □□ □□ (RID)

: 3  
 : 3  
 :



## 14.4. □□□□

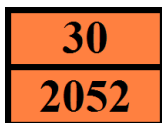
□□ □□ (ADR) : III  
 □□ □□(IMDG) : III  
 □□ □□ (IATA) : III  
 □□ □□(ADN) : III  
 □□ □□(RID) : III

## 14.5. □□ □□□

□□□ □□ : □□  
 □□□□□□ : □□  
 EmS-No. (□□) : F-E  
 EmS-No. (□□) : S-E  
 □ □□ □□□□ : □□ □□ □□ □□

## 14.6. □□□□ □□ □□ □□□□

□□ □□ : F1  
 □□ □□ (ADR) : 51  
 □□□(ADR) : E1  
 □□□(ADR) : P001, IBC03, LP01, R001  
 □□ □□(ADR) : MP19  
 □□ □□ □□ □□ □□(ADR) : T2  
 □□□ □□ □□ □□□□ □□ (ADR) : TP1  
 □□ □□(ADR) : LGBF  
 □□ □□□□ □□ : FL  
 □□ □□(ADR) : 3  
 □□ □□ □□ □□ - □□(ADR) : V12  
 □□ □□ □□ □□ - □□(ADR) : S2  
 □□ □□ □□(Kemler □□) : 30  
 Orange plates (□□□□□□) :



□□ □□ □□ (ADR) : D/E  
 EAC □□ : 3Y

□□ □□ :  
 □□ □□(IMDG) : 5 L

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□□□(IMDG) : E1  
 □□ □□ (IMDG) : P001, LP01  
 IBC □□ □□(IMDG) : IBC03  
 □□ □□ (IMDG) : T2  
 □□ □□ □□ (IMDG) : TP1  
 □□ □□ (IMDG) : A  
 □□□ (IMDG) : 43°C c.c.  
 □□□ □□□□ (IMDG) : Colourless liquid with a lemon-like odour. Flashpoint: 43°C c.c. Explosive limits: 0.7% to 6.1%.  
 Immiscible with water.

MFAG-□□ : 128

□□ □□  
 PCA □□ □□(IATA) : E1  
 PCA □□ □□(IATA) : Y344  
 PCA □□ □□ □□ □□□(IATA) : 10L  
 PCA □□ □□(IATA) : 355  
 PCA □□ □□□(IATA) : 60L  
 CAO □□ □□(IATA) : 366  
 CAO □□ □□□(IATA) : 220L  
 ERG □□(IATA) : 3L

□□ □□ □□  
 □□ □□(ADN) : F1  
 □□□(ADN) : 5 L  
 □□□(ADN) : E1  
 □□ □□(ADN) : PP, EX, A  
 □□(ADN) : VE01  
 □□ □□/□□□ □□(ADN) : 0

□□ □□  
 □□ □□(RID) : F1  
 □□ □□(RID) : 5L  
 □□□(RID) : E1  
 □□ □□ (RID) : P001, IBC03, LP01, R001  
 □□ □□ □□ □□ □□(RID) : MP19  
 □□□ □□ □□ □□□□ □□ (RID) : T2  
 □□□ □□ □□ □□□□ □□ □□ (RID) : TP1  
 RID □□□ □□ □□(RID) : LGBF  
 □□ □□(RID) : 3  
 □□ □□ □□ □□ - □□(RID) : W12  
 □□ □□□ : CE4  
 □□□ □□ □□ (RID) : 30

**14.7. □□□□□□(IMO) □□ □□ □□ □□**

□□□□

**□□ 15: □□ □□□□**

**15.1. □□, □□ □□□□ □□□□ □□□□ □□ □□ □□/□□**

EU □□

REACH □□□ XVII (□□ □□)

EU restriction □□ (REACH Annex XVII)	
□□ □□	□□ □□
3(a)	D (+) LIMONENE FOR SYNTHESIS
3(b)	D (+) LIMONENE FOR SYNTHESIS
3(c)	D (+) LIMONENE FOR SYNTHESIS

# D (+) LIMONENE FOR SYNTHESIS

□□□□□□□□

□□ (EU) 2020/878 □□ □□ □□ REACH □□ (EC) 1907/2006 □□ □□

EU restriction □□ (REACH Annex XVII)	
□□ □□	□□ □□
40.	D (+) LIMONENE FOR SYNTHESIS

## REACH □□□ XIV (□□ □□)

REACH □□□ XIV (□□ □□) □ □□□□ □□

## REACH □□ □□ □□ (SVHC)

REACH □□ □□ □□ □□ □□ □□□□ □□

## PIC □□ (□□□□□□)

PIC □□□ □□□□ □□ (□□ EU 649/2012)

## POP □□ (□□□□ □□ □□□□)

POP □□□ □□□□ □□ (□□ EU 2019/1021)

## Ozone Regulation (2024/590)

Not listed on the Ozone Depletion list (Regulation EU 2024/590)

## □□□□ □□ (428/2009)

Contains no substance subject to the COUNCIL REGULATION (EC) for the control of dual-use items

## □□ □□□□ □□ (2019/1148)

□□□ □□□□ □□ (□□ □□□□□ □□ □ □□□ □□ □□ EU 2019/1148) □ □□□ □□ □□□□ □□

## □□ □□□□ □□ (273/2004)

□□ □□□□ □□□ □□□ □□□□ □□ (□□ □ □□□□ □□□ □□ □□□ □□ □□□ □□ □□ □□ □□ □□ EC 273/2004)

□□ □□

□□

VOC ordinance (ChemVOCFarbV) :

WGK : WGK 2, □□□ □□□ □□ (Classification according to AwSV; ID □□ 87).

□□ □□ □□ (12. BImSchV) : □□ □□ □□ (12. BImSchV) □ □□ □□ □□

□□□□

SZW-lijst van kankerverwekkende stoffen : □□□ □□□□ □□□□□.

SZW-lijst van mutagene stoffen : □□□ □□□□ □□□□□.

SZW-lijst van reprotoxische stoffen – Borstvoeding : □□□ □□□□ □□□□□.

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : □□□ □□□□ □□□□□.

SZW-lijst van reprotoxische stoffen – Ontwikkeling : □□□ □□□□ □□□□□.

□□□□

Class for fire hazard : □□ II-1

Store unit : 5 liter

□□ □□ □□ □□ : R10 <H226;H304;H315;H317;H410>; □□□ □□ □□□ □□ □□ □□ □□□□ □□□□

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: Act of 25 February 2011 on chemical substances and their mixtures (J. o L. No. 63, item 322 as amended; consolidated text J. o L. 2019, item 1225).  
 Act of 14 December 2012 on waste (J. o L. 2013, item 322 as amended; consolidated text J. o L. 2020, item 797).  
 The announcement of Marshal of the Sejm of the Republic of Poland dated 19 October 2016 concerning the consolidated text announcement of the decree on the management of packaging and packaging waste (J. o L. 2016, item 1863 as amended).  
 Decree of the Minister of Environment of 14 December 2014 on the catalogue of waste (J. o L. 2014, item 1923).  
 Act of 19 August 2011 on the Carriage of Dangerous Goods (J. o L. 2011 No. 227, item 1367 as amended; consolidated text J. o L. 2020, item 154).  
 Regulation of the Minister of Family, Labour and Social Policy of 12 June 2018 on the highest permissible concentration and intensity of noxious agents for health at work environment (J. o L. item 1286 as amended).  
 The announcement of Minister of Health dated 9 September 2016 concerning the consolidated text announcement of the decree of the Minister of Health of 30 December 2004 on health and safety at work related to exposure to chemical agents at work (J. o L. of 16 September 2016, item 1488)  
 Regulation of the Minister of Health of 2 February 2011 on tests and measurements of the noxious agents for health at work environment (J. o L. No. 33, item 166 as amended).  
 Regulation of the Minister of Environment of 9 December 2003 on particularly hazardous substances to the environment (J. o L. No. 217, item 2141).  
 ADR Agreement: Government Statement of 13 March 2023 on the entry into force of amendments to Annexes A and B to the Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), signed in Geneva on 30 September 1957 (J. o. L. 2023, item 891)

## 15.2. □□ □□ □□□ □□

No chemical safety assessment has been carried out

## □□ 16: □ □□ □□□□

□□ □ □□□□:	
ACGIH	American Conference of Government Industrial Hygienists
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	□□ □□ □
BOD	Biochemical oxygen demand (BOD)
CAS □□	□□□□ □□ □□ □□(CAS)
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
COD	□□□ □□ □□□
CSA	□□ □□ □□□ □□
DMEL	Derived Minimal Effect level
DNEL	□□ □□□ □□
EC □□	□□ □□□ □□
EC50	Median effective concentration
ED	□□□ □□□□
EN	□□ □□
EWC	European waste catalogue

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IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
Log Kow	Partition coefficient n-octanol/water (Log Kow)
Log Pow	Partition coefficient n-octanol/water (Log Pow)
MAK	maximum workplace concentration
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
N.O.S.	Not Otherwise Specified
OECD	Organisation for Economic Co-operation and Development
OEL	□□□ □□ □□
OSHA	Occupational Safety & Health Administration
PBT	Persistent Bioaccumulative Toxic
PNEC	□□ □□□ □□
PPE	□□ □□□
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	□□□□□□□□
STP	Sewage treatment plant
TF	□□□ □□
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
TWA	Time Weighted Average
COV	Volatile Organic Compounds
vPvB	Very Persistent and Very Bioaccumulative
UFI	□□ □□ □□□

□H□ □ EUH□ □□:	
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□□□ □□ 3	□□□ □□, □□ 3
□□ □□□ 1	□□ □□□, □□ 1
□□ □□□ 2	□□ □□□/□□ □□□, □□ 2
□□ □□□ 1	□□ □□□, □□ 1
H226	□□□ □□ □ □□.
H304	□□□ □□□ □□□□ □□□□ □ □□.
H315	□□□ □□□ □□□.

