

**Safety Data Sheet dated 29/9/2013, version 1**

**Supersedes previous Safety Data Sheet dated 18/03/2011**

**In compliance with the requirement of the Regulation (EC) N°1907/2006**

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

### 1.1. Product identifier

Mixture identification:

Trade name: TELENE 1752 B

Trade code: TELENE 1752 B

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

Reactive liquid resin for production of plastic parts.

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

Company:

TELENE SAS

2 Rue Marie Curie

59 910 BONDUES - FRANCE

Telephone contact (office hours): +33 (0)3 20 69 57 10

Competent person responsible for the safety data sheet:

msds@telene.com

### 1.4. Emergency telephone number

Poison Centers in Europe : <http://www.eapcct.org/index.php?page=links>

For all information in the event of a transport accident or other emergency: +1 703 527 3887  
(CHEMTREC - International - 24/24).

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## **SECTION 2. HAZARDS IDENTIFICATION**

### 2.1. Classification of the substance or mixture

Directive criteria, 67/548/CE, 99/45/EC and following amendments thereof:

Properties / Symbols:

Xn Harmful

Xi Irritant

N Dangerous for the environment

R Phrases:

R10 Flammable.

R20/22 Harmful by inhalation and if swallowed.

R36/37/38 Irritating to eyes, respiratory system and skin.

R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

EC regulation criteria 1272/2008 (CLP)

Warning, Flam. Liq. 3, Flammable liquid and vapour.

Warning, Acute Tox. 4, Harmful if swallowed.

Danger, Acute Tox. 3, Toxic if inhaled.

Warning, Skin Irrit. 2, Causes skin irritation.

Warning, Eye Irrit. 2, Causes serious eye irritation.

Warning, STOT SE 3, May cause respiratory irritation.

Aquatic Chronic 2, Toxic to aquatic life with long lasting effects.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Symbols:



Danger

Hazard statements:

H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H331 Toxic if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

P273 Avoid release to the environment.

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

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P308+P313 IF exposed or concerned: Get medical advice/attention.

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

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

Special Provisions:

None

Contents

3a,4,7,7a-tetrahydro-4,7-methanoindene (DCPD)

2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards:

No other hazards

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Not Relevant

3.2. Mixtures

Hazardous components within the meaning of EEC directive 67/548 and CLP regulation and related classification:

90% - 96% Rim-monomer (DCPD)

REACH No.: 01-2119463601-44-XXXX, Index number: 601-044-00-9, CAS: 77-73-6, EC: 201-052-9

F,Xn,Xi,N; R11-20-22-36/37/38-51/53







2.6/3 Flam. Liq. 3 H226



3.1/4/Oral Acute Tox. 4 H302



3.1/2/Inhal Acute Tox. 2 H330

-  3.2/2 Skin Irrit. 2 H315
-  3.3/2 Eye Irrit. 2 H319
-  3.8/3 STOT SE 3 H335
-  4.1/C2 Aquatic Chronic 2 H411







0.5% - 1% toluene

Index number: 601-021-00-3, CAS: 108-88-3, EC: 203-625-9  
F,Xn,Xi; R11-38-48/20-63-65-67

-  2.6/2 Flam. Liq. 2 H225
-  3.7/2 Repr. 2 H361
-  3.10/1 Asp. Tox. 1 H304
-  3.9/2 STOT RE 2 H373
-  3.2/2 Skin Irrit. 2 H315
-  3.8/3 STOT SE 3 H336

0.1% - 1% 2,6-di-tert-butyl-p-cresol

REACH No.: 01-2119565113-46, CAS: 128-37-0, EC: 204-881-4  
Xn,Xi,N; R22-36/37/38-50/53

-  3.1/4/Oral Acute Tox. 4 H302
-  4.1/A1 Aquatic Acute 1 H400
-  3.3/2 Eye Irrit. 2 H319
-  3.8/3 STOT SE 3 H335
-  3.2/2 Skin Irrit. 2 H315
-  4.1/C1 Aquatic Chronic 1 H410

< 0.3% bis(2-methoxyethyl) ether

REACH No.: 01-2119485900-34-0000, Index number: 603-139-00-0, CAS: 111-96-6, EC:  
203-924-4

- Repr. Cat. 2; R10-19-60-61
-  2.6/3 Flam. Liq. 3 H226
  -  3.7/1B Repr. 1B H360

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## **SECTION 4. FIRST AID MEASURES**

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.

Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.

Wash thoroughly the body (shower or bath).

Remove contaminated clothing immediately and dispose off safely.

After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

Protect uninjured eye.

In case of Ingestion:

Do NOT induce vomiting.

Give nothing to eat or drink.

In case of Inhalation:

If breathing is irregular or stopped, administer artificial respiration.

In case of inhalation, consult a doctor immediately and show him packing or label.

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

Any prolonged or repeated contact may cause a skin irritation and dermatitis.

Dicyclopentadine may cause liver sickness (jaundice) and/or damage, kidney sickness (oedema, proteinuria) and/or damage and lung sickness and/or damage.

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

Treatment:

It is possible to use charcoal in a paste form (240ml water : 30g charcoal). Standard adult dose: 25 to 100g.

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## **SECTION 5. FIRE-FIGHTING MEASURES**

5.1. Extinguishing media

Suitable extinguishing media:

Water spray.

Dry chemical

Foam fire extinguisher

CO2

Extinguishing media which must not be used for safety reasons:

Water in the form of a solid jet.

Avoid using foam and water on a surface at the same time as the water will destroy the foam.

5.2. Special hazards arising from the substance or mixture

Combustion products: carbon monoxide, carbon dioxide and smoke.

Do not inhale explosion and combustion gases.

Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Move undamaged containers from immediate hazard area if it can be done safely.

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## **SECTION 6. ACCIDENTAL RELEASE MEASURES**

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.

Remove all sources of ignition.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

- Provide adequate ventilation.  
Use appropriate respiratory protection.  
See protective measures under point 7 and 8.
- 6.2. Environmental precautions  
Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.  
Retain contaminated washing water and dispose it.  
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.  
Suitable material for taking up: absorbing material, organic, sand
- 6.3. Methods and material for containment and cleaning up  
Wash with plenty of water.
- 6.4. Reference to other sections  
See also section 8 and 13

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## **SECTION 7. HANDLING AND STORAGE**

- 7.1. Precautions for safe handling  
Avoid contact with skin and eyes, inhalation of vapours and mists.  
Use localized ventilation system.  
Don't use empty container before they have been cleaned.  
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.  
Contaminated clothing should be changed before entering eating areas.  
Do not eat or drink while working.  
See also section 8 for recommended protective equipment.
- 7.2. Conditions for safe storage, including any incompatibilities  
Keep away from heat and any sources of ignition.  
Keep in a tightly-closed container in a well-ventilated place.  
Keep in a dry, cool place.  
Keep away from direct sunlight.  
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.  
Keep away from food, drink and feed.  
Incompatible materials:  
None in particular.  
Instructions as regards storage premises:  
Cool and adequately ventilated.
- 7.3. Specific end use(s)  
Removing finished parts from moulds may cause an inflammable mixture of vapour/air in and around the moulding equipment that may ignite.  
None in particular

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## **SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

- 8.1. Control parameters  
Not available  
3a,4,7,7a-tetrahydro-4,7-methanoindene - CAS: 77-73-6  
Germany - LTE: 3 mg/m<sup>3</sup>, 0.5 ppm  
Austria - LTE: 3 mg/m<sup>3</sup>, 0.5 ppm, 1 ppm  
Belgium - LTE: 3 mg/m<sup>3</sup>, 0.5 ppm  
Denmark - LTE: 3 mg/m<sup>3</sup>, 0.5 ppm  
Finland - STE: 5.5 mg/m<sup>3</sup>, 1 ppm  
France - LTE: 27 mg/m<sup>3</sup>, 5 ppm  
Ireland - LTE: 27 mg/m<sup>3</sup>, 5 ppm

Portugal - LTE: 27 mg/m<sup>3</sup>, 5 ppm  
United Kingdom - LTE: 27 mg/m<sup>3</sup>, 5 ppm  
Switzerland - LTE: 3 mg/m<sup>3</sup>, 0.5 ppm, 0.5 ppm

toluene - CAS: 108-88-3

France - LTE: 192 mg/m<sup>3</sup>, 50 ppm - STE: 384 mg/m<sup>3</sup>, 100 ppm  
Holland - LTE: 150 mg/m<sup>3</sup> - STE: 384 mg/m<sup>3</sup>

2,6-di-tert-butyl-p-cresol - CAS: 128-37-0

United Kingdom - LTE: 10 mg/m<sup>3</sup> - STE: 30 mg/m<sup>3</sup>

France - LTE: 10 mg/m<sup>3</sup>

Belgium - LTE: 10 mg/m<sup>3</sup>

Portugal - LTE: 2 mg/m<sup>3</sup>

Finland - LTE: 10 mg/m<sup>3</sup> - STE: 20 mg/m<sup>3</sup>

Denmark - LTE: 10 mg/m<sup>3</sup>

Switzerland - LTE: 10 mg/m<sup>3</sup>

Ireland - LTE: 10 mg/m<sup>3</sup>

Germany - LTE: 10 mg/m<sup>3</sup> - Notes: Fraction inhalable

Holland - LTE: 10 mg/m<sup>3</sup>

#### DNEL Exposure Limit Values

3a,4,7,7a-tetrahydro-4,7-methanoindene - CAS: 77-73-6

Worker Industry: 160 mg/m<sup>3</sup> - Consumer: 143 mg/m<sup>3</sup> - Exposure: Human Inhalation -  
Frequency: Short Term, systemic effects

Worker Industry: 160 mg/m<sup>3</sup> - Consumer: 143 mg/m<sup>3</sup> - Exposure: Human Inhalation -  
Frequency: Short Term, local effects

Worker Industry: 0.34 mg/kg - Consumer: 0.14 mg/kg - Exposure: Human Dermal -  
Frequency: Long Term, systemic effects

Worker Industry: 2.3 mg/m<sup>3</sup> - Consumer: 0.49 mg/m<sup>3</sup> - Exposure: Human Inhalation -  
Frequency: Long Term, systemic effects

Worker Industry: 2.3 mg/m<sup>3</sup> - Consumer: 0.1 mg/kg - Exposure: Human Oral -  
Frequency: Long Term, systemic effects

bis(2-methoxyethyl) ether - CAS: 111-96-6

Worker Industry: 2.08 mg/kg - Consumer: 1.04 mg/kg - Exposure: Human Dermal -  
Frequency: Long Term, systemic effects

Worker Industry: 26.8 mg/m<sup>3</sup> - Consumer: 6.7 mg/m<sup>3</sup> - Exposure: Human Inhalation -  
Frequency: Long Term, systemic effects

Consumer: 1.04 mg/kg - Exposure: Human Oral - Frequency: Long Term, systemic  
effects

#### PNEC Exposure Limit Values

3a,4,7,7a-tetrahydro-4,7-methanoindene - CAS: 77-73-6

Target: Fresh Water - Value: 0.029 mg/l

Target: Marine water - Value: 0.029 mg/l

Target: Freshwater sediments - Value: 5.49 mg/kg

Target: Marine water sediments - Value: 5.49 mg/kg

Target: Microorganisms in sewage treatments - Value: 0.85 mg/l

bis(2-methoxyethyl) ether - CAS: 111-96-6

Target: Fresh Water - Value: 6.4 mg/l

Target: Marine water - Value: 0.64 mg/l

Value: 9.43 mg/l – Notes : intermittent water release

Target: Freshwater sediments - Value: 27.4 mg/kg

Target: Marine water sediments - Value: 2.74 mg/kg

Target: Soil (agricultural) - Value: 1.72 mg/kg

Target: Microorganisms in sewage treatments - Value: 50 mg/l

Target: Food chain - Value: 2.77 mg/kg - Notes: feed

8.2. Exposure controls

Eye protection:

Use close fitting safety goggles, don't use eye lens.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Use protective gloves that provides comprehensive protection, e.g. P.V.C., neoprene or rubber.

Respiratory protection:

Use respiratory protection where ventilation is insufficient or exposure is prolonged.

Use adequate protective respiratory equipment.

Thermal Hazards:

None

Environmental exposure controls:

None

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Unless otherwise indicated, tests have been carried out at 20 °C and at normal atmospheric pressure (760 mm Hg - 1 atm).

9.1. Information on basic physical and chemical properties

Appearance and colour: clear liquid

Odour: camphor

Odour threshold: From 0.003 to 0.2 ppm.

pH: N.A.

Melting point / freezing point: - 5 °C

Initial boiling point and boiling range: N.A.

Solid/gas flammability: N.A.

Upper/lower flammability or explosive limits: LIE 1%, LSE 10%

Vapour density: 4.6

Flash point: 41-49 °C

Evaporation rate: N.A.

Vapour pressure: 2,28 mmHg @ 20 °C

Relative density: 0.98 @ 20 °C

Solubility in water: insoluble

Solubility in oil: N.A.

Partition coefficient (n-octanol/water): Log Pow = 3,6

Auto-ignition temperature: N.A.

Decomposition temperature: N.A.

Viscosity: 150-450 mPa.s

Explosive properties: N.A.

Oxidizing properties: N.A.

9.2. Other information

Miscibility: N.A.

Fat Solubility: N.A.

Conductivity: N.A.

Substance Groups relevant properties N.A.

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**SECTION 10. STABILITY AND REACTIVITY**

10.1. Reactivity

Stable under normal conditions

10.2. Chemical stability

- Metal chloride salts or heat can act as a catalyst to polymerisation.
- 10.3. Possibility of hazardous reactions  
The mixture of A and B components of resin TELENE for operations other than moulding may cause an uncontrolled exothermic reaction generating temperatures higher than 200°C and releasing vapours such as ethane and nitrogen.  
It may generate toxic gases on contact with powerful oxidising agents, and powerful reducing agents.  
It may catch fire on contact with powerful oxidising agents.
- 10.4. Conditions to avoid  
Avoid humidity.  
Stable under normal conditions.
- 10.5. Incompatible materials  
Reacts with polyols and isocyanates.  
Avoid all contact with strong oxidizing agents.  
Avoid contact with combustible materials. The product could catch fire.
- 10.6. Hazardous decomposition products  
Decomposition gases: hydrogen chloride, carbon monoxide, carbon dioxide.  
Combustion products: carbon monoxide, carbon dioxide and smoke.

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## **SECTION 11. TOXICOLOGICAL INFORMATION**

### 11.1. Information on toxicological effects

Toxicological information of the mixture:

Not available

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture.

Toxicological information of the main substances found in the mixture:

3a,4,7,7a-tetrahydro-4,7-methanoindene - CAS: 77-73-6

a) acute toxicity:

Test: LC50 - Route: Inhalation - Species: Rat 1.972 mg/l - Duration: 4h

Test: LD50 - Route: Oral - Species: Rat 590 mg/kg

Test: LD50 - Route: Skin - Species: Rat 2000 mg/kg

g) reproductive toxicity:

Test: NOAEL - Route: Oral 50 mg/kg - Notes: Fertility impairment

Test: NOAEL - Route: Oral 60 mg/kg - Notes: Developmental toxicity

toluene - CAS: 108-88-3

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat > 5500 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit > 8400 mg/kg

Test: LC50 - Route: Inhalation - Species: Rat > 12.5 mg/l - Duration: 4h

2,6-di-tert-butyl-p-cresol - CAS: 128-37-0

a) acute toxicity:

Test: LD50 - Route: Oral - Species: Rat 890 mg/kg

Test: LD50 - Route: Oral - Species: Rabbit 2100 mg/kg

Test: LD50 - Route: Oral - Species: Mouse 650 mg/kg

Test: LD50 - Route: Skin - Species: Rabbit > 2000 mg/kg

b) skin corrosion/irritation:

Test: LC11 - Route: Skin - Species: Rabbit Positive - Duration: 48h - Notes: Modéré

c) serious eye damage/irritation:

Test: LC11 - Route: EYES - Species: Rabbit Positive - Duration: 24H - Notes: Modéré

e) germ cell mutagenicity:

Test: Mutagenesis Negative - Source: Test d'Ames

f) carcinogenicity:



- Test: Carcinogenicity No - Source: IARC Groupe 3  
bis(2-methoxyethyl) ether - CAS: 111-96-6
- a) acute toxicity:  
Test: LD50 - Route: Oral - Species: Rat 4760 mg/kg - Source: OECD 401  
Test: LD50 - Route: Skin - Species: Rat > 5000 mg/kg - Source: OECD 402  
Test: LC10 - Route: Inhalation - Species: Rat 11 mg/l - Source: OECD 403 - Notes: 7h, LC0=11mg/l
- b) skin corrosion/irritation:  
Test: Skin Irritant - Route: Skin - Species: Rabbit No - Source: OECD 404
- c) serious eye damage/irritation:  
Test: Eye Irritant - Route: EYES - Species: Rabbit No - Source: OECD 405
- e) germ cell mutagenicity:  
Test: Genotoxicity - Route: Inhalation - Species: Rat Negative - Source: OECD 475  
Test: Mutagenesis - Route: VITRO Negative - Source: OECD 471
- i) STOT-repeated exposure:  
Test: NOAEL - Route: Oral 200 mg/kg - Source: OECD 408 - Notes: 2 w, drinking water  
Test: NOAEL - Route: Inhalation - Species: Rat 110 mg/kg - Source: OECD 412 - Notes: 14d/j

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.  
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
Since no ecotoxicological data about the mixture is available, the concentration of each substance must be considered to assess the ecotoxicological effects resulting from exposure to the mixture.

3a,4,7,7a-tetrahydro-4,7-methanoindene - CAS: 77-73-6

a) Aquatic acute toxicity:

- Endpoint: LC50 Fish 16 mg/l - Duration h: 96  
Endpoint: EC50 Daphnia 11 mg/l - Duration h: 48  
Endpoint: EC50 Algae > 100 mg/l - Duration h: 96  
Endpoint: LC50 BACTERIA 5.3 mg/l - Duration h: 24

toluene - CAS: 108-88-3

a) Aquatic acute toxicity:

- Endpoint: LC50 Fish = 5.5 mg/l - Duration h: 96  
Endpoint: EC50 Daphnia = 11.5 mg/l - Duration h: 48  
Endpoint: LC50 Algae = 134 mg/l - Duration h: 72  
Endpoint: EC50 BACTERIA = 29 mg/l - Duration h: 24  
Endpoint: 9.1.1. SHORT TERM TO WORM = 15 mg/l - Duration h: 28j

2,6-di-tert-butyl-p-cresol - CAS: 128-37-0

a) Aquatic acute toxicity:

- Endpoint: EC50 Daphnia = 0.31 mg/l - Duration h: 48  
Endpoint: EC50 Algae = 0.42 mg/l - Duration h: 72  
Endpoint: LC50 Fish = 0.57 mg/l - Duration h: 96

bis(2-methoxyethyl) ether - CAS: 111-96-6

a) Aquatic acute toxicity:

- Endpoint: LC50 Fish > 5000 mg/l - Duration h: 96 - Notes: OECD 203  
Endpoint: EC50 Daphnia 943 mg/l - Notes: OECD 202  
Endpoint: EC50 Algae > 10000 mg/l - Duration h: 72 - Notes: OECD 201

c) Bacteria toxicity:

- BACTERIA 1067 mg/l - Duration h: 3 - Notes: OECD 209

### 12.2. Persistence and degradability

- None  
bis(2-methoxyethyl) ether - CAS: 111-96-6  
Biodegradability: Readily biodegradable - Test: Not available - Duration: 6H - %: 99 -  
Notes: 36d/j, OECD 302B
- 12.3. Bioaccumulative potential  
Bioaccumulative:  
bis(2-methoxyethyl) ether - CAS: 111-96-6  
Bioaccumulation: Not bioaccumulative - Test: Not available Not available - Duration: Not  
available - Notes: Not available  
Not available
- 12.4. Mobility in soil  
bis(2-methoxyethyl) ether - CAS: 111-96-6  
Mobility in soil: Not mobile - Test: Not available Not available - Duration: Not available -  
Notes: Not available  
Not available
- 12.5. Results of PBT and vPvB assessment  
vPvB Substances: None - PBT Substances: None
- 12.6. Other adverse effects  
None

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### **SECTION 13. DISPOSAL CONSIDERATIONS**

- 13.1. Waste treatment methods  
Recover, if possible. Send to authorised disposal plants or for incineration under controlled  
conditions. In so doing, comply with the local and national regulations currently in force.

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### **SECTION 14. TRANSPORT INFORMATION**

- 14.1. UN number  
ADR-UN number: 2048  
IATA-Un number: 2048  
IMDG-Un number: 2048
- 14.2. UN proper shipping name  
ADR-Shipping Name: DICYCLOPENTADIENE  
IATA-Technical name: DICYCLOPENTADIENE
- 14.3. Transport hazard class(es)  
ADR-Class: 3  
ADR-Label: 3  
IMDG-Class: 3  
IMDG-Label: 3
- 14.4. Packing group  
ADR-Packing Group: III  
IATA-Packing group: III  
IMDG-Packing group: III
- 14.5. Environmental hazards  
Marine pollutant: Marine pollutant
- 14.6. Special precautions for user
- 14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code  
No

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### **SECTION 15. REGULATORY INFORMATION**

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

Where applicable, refer to the following regulatory provisions :  
Dir. 98/24/EC (Risks related to chemical agents at work).  
Dir. 2000/39/EC (Occupational exposure limit values)  
Directive 2003/105/CE ('Activities linked to risks of serious accidents') and subsequent amendments.  
Regulation (EC) nr 648/2004 (detergents).  
1999/13/EC (VOC directive)

15.2. Chemical safety assessment

No

Two exposure scenarios related to the substance called dicyclopentadine - CAS: 77-73-6 are attached in the appendix.

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**SECTION 16. OTHER INFORMATION**

Full text of phrases referred to in Section 3:

- R11 Highly flammable.
- R20 Harmful by inhalation.
- R22 Harmful if swallowed.
- R36/37/38 Irritating to eyes, respiratory system and skin.
- R38 Irritating to skin.
- R48/20 Harmful: danger of serious damage to health by prolonged exposure through inhalation.
- R51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
- R63 Possible risk of harm to the unborn child
- R65 Harmful: may cause lung damage if swallowed.
- R67 Vapours may cause drowsiness and dizziness.
  
- H226 Flammable liquid and vapour.
- H302 Harmful if swallowed.
- H330 Fatal if inhaled.
- H331 Toxic if inhaled.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H411 Toxic to aquatic life with long lasting effects.
- H225 Highly flammable liquid and vapour.
- H360 May damage fertility or the unborn child.
- H304 May be fatal if swallowed and enters airways.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H336 May cause drowsiness or dizziness.

This document was prepared by a competent person who has received appropriate training.

Main bibliographic sources:

- ECHA CHEM (European Chemicals Agency)
- eCHEMPORTAL (OECD Global Portal of Information on Chemical Substances)
- GESTIS International Limit Values (IFA)
- Chemical Safety Report (LOA REACH Consortium)

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.

**Safety Data Sheet**  
**TELENE 1752 B**

**Telene**<sup>®</sup>

It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.

This safety data sheet has been completely updated in compliance with Regulation 453/2010/EU. This document supersedes any previous version.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
EC50:	Median effective concentration.
IATA:	International Air Transport Association.
IMDG:	International Maritime Code for Dangerous Goods.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
LTE:	Long-term exposure.
N.A.:	Not available
OEL:	Occupational exposure limit.
PBT:	Persistent, Bioaccumulative and Toxic.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STE:	Short-term exposure.
vPvB:	very Persistent and very Bioaccumulative.

## ANNEX

### EXPOSURE SCENARIOS

Exposure scenario 2: Distribution of 3a,4,7,7a-tetrahydro-4,7-methanoindene

Exposure scenario 4: Use of 3a,4,7,7a-tetrahydro-4,7-methanoindene in polymer processing –  
Industrial

**Exposure scenario 2: Distribution of  
3a,4,7,7a-tetrahydro-4,7-methanoindene**

**Exposure scenario**

Section 1	Exposure Scenario Title
Title	<b>Distribution of DCPD;CAS RN77-76-3</b>
Use Descriptor	Sector of Use: Industrial (SU3, SU8, SU9, SU10)
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15
	Environmental Release Categories: ERC1 (loading) ERC2 (repacking)
Processes, tasks, activities covered	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its distribution and associated laboratory activities
Section 2	Operational conditions and risk management measures
<i>Field for additional statements to explain scenario if required.</i>	
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa [OC3].
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
Amounts used	<i>Not applicable</i>
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting worker exposure	Assumes use at not > 20oC above ambient [G15]; Assumes a good basic standard of occupational hygiene is implemented [G1].
Contributing Scenarios	Risk Management Measures
	<i>Note: list RMM standard phrases according to the control hierarchy indicated in the ECHA template: 1. Technical measures to prevent release, 2. Technical measures to prevent dispersion, 3. Organisational measures , 4. Personal protection. Phrases between brackets are good practice advice only, beyond REACH Chemical Safety Assessment and may be communicated in Section 5 of the ES or within the main sections of the SDS.</i>
General exposures (closed systems) [CS15].	No other specific measures identified [E120]. Wear suitable gloves tested to EN374 [PPE15].

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General exposures (closed systems) [CS15]. ; With sample collection [CS56]. With occasional controlled exposure [CS137]	Ensure material transfers are under containment or extract ventilation [E66].
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General exposures (closed systems) [CS15]. Use in contained batch processes [CS37].	Ensure material transfers are under containment or extract ventilation [E66].
General exposures (open systems) [CS16]. Batch process [CS55]. ; With sample collection [CS56].	Ensure material transfers are under containment or extract ventilation [E66]. Avoid carrying out operation for more than 4 hours [OC12].Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].
Process sampling [CS2].	Ensure material transfers are under containment or extract ventilation [E66]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].
Laboratory activities [CS36].	Handle in a fume cupboard or under extract ventilation [E83].Avoid carrying out operation for more than 4 hours [OC12]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].
Bulk transfers [CS14]. ; (closed systems) [CS107]	Ensure material transfers are under containment or extract ventilation [E66]. Avoid carrying out operation for more than 4 hours [OC12].Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].
Bulk transfers [CS14]. ; (open systems) [CS108]	Ensure material transfers are under containment or extract ventilation [E66]. Wear suitable gloves tested to EN374 [PPE15]. Wear a respirator conforming to EN140 with Type A filter or better. [PPE22]
Drum and small package filling [CS6].	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings [E60]. Ensure operation is undertaken outdoor [E69] or provide a good standard of general ventilation. Natural ventilation is from windows and doors etc. Controlled ventilation means air is supplied or/removed by powered fan [E1 Wear chemically resistant gloves (tested to EN374) in combination with 'specific' activity training [PPE17].
Equipment cleaning and maintenance [CS39].	Drain down and flush system prior to equipment break-in or maintenance [E55].Apply vessel entry procedures including use of forced supplied air [AP15]. Wear suitable gloves tested to EN374 [PPE15].
Storage [CS67]With occasional controlled exposure [CS137]	Transfer via enclosed lines [E52].Ensure operation is undertaken outdoors [E69]. Locate bulk storage outdoors [E88].Avoid carrying out operation for more than 15 minutes [OC10].Wear suitable gloves tested to EN374 [PPE15].

<b>Section 3</b>	<b>Exposure Estimation</b>
<b>3.1. Health</b>	<i>When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1 as indicated in Appendix A.</i>

3.2. Environment	When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1. This is only applicable to the intermediate exposure scenario.
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<b>Section 4</b>	<b>Guidance to check compliance with the Exposure Scenario</b>
<b>4.1. Health</b>	<i>Confirm that RMMs and OCs are as described or of equivalent efficiency. See Appendix A.2 for details of efficiencies and OC.</i>
<b>4.2. Environment</b>	<i>Confirm that RMMs and OCs are as described or of equivalent efficiency. The required efficiency removal from water is 81.6% which would be typically found in waste-water treatment plant.</i>
<b>Section 5</b>	<b>Additional good practice advice beyond the REACH Chemical Safety Assessment - (Section Optional)</b>
<b>Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.</b>	
<b>Control of Worker Exposure</b>	
<i>Selection of relevant Contributing Scenario phrases</i>	<i>Good practice RMM phrases may be incorporated in this section or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>
<b>Control of environmental exposure</b>	
<i>Selection of relevant RMM Core Phrases</i>	<i>Good practice RMM phrases may be incorporated in this section or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>

## Exposure estimation

### Workers exposure

The worker exposure estimates for the activities associated with the manufacturing of 3a,4,7,7a-tetrahydro-4,7-methanoindene were assessed using ECETOC TRAv2 (Further details on request).

### Consumer exposure

Not applicable.

### Indirect exposure of humans via the environment (oral)

The estimation of indirect human exposure via the environment was conducted using EUSES v2.1.1. (Further details on request.)



### Environmental exposure

The PECs are based on the factors shown in Section 2.2 (Further details on request.)

## **Exposure scenario 4: Use of 3a,4,7,7a-tetrahydro-4,7-methanoindene in polymer processing – Industrial**

### Exposure scenario

Section 1	Exposure Scenario Title
Title	<b>Use in polymer processing of DCPD;CAS RN77-73-6</b>
Use Descriptor	Sector of Use: Industrial (SU3, SU10)
	Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC21
	Environmental Release Categories: ERC 6D
Processes, tasks, activities covered	Processing of formulated polymers including material transfers, additives handling (e.g. pigments, stabilisers, fillers, plasticisers, etc.), moulding, curing and forming activities, material re-works, storage and associated maintenance.
Section 2	Operational conditions and risk management measures
<i>Field for additional statements to explain scenario if required.</i>	
Section 2.1	Control of worker exposure
Product characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa [OC3].
Concentration of substance in product	Covers percentage substance in the product up to 100 % (unless stated differently) [G13].
Amounts used	<i>Not applicable</i>
Frequency and duration of use	Covers daily exposures up to 8 hours (unless stated differently) [G2]
Human factors not influenced by risk management	<i>Not applicable</i>
Other Operational Conditions affecting worker exposure	Assumes use at not > 20oC above ambient [G15]; Assumes a good basic standard of occupational hygiene is implemented [G1].
Contributing Scenarios	Risk Management Measures
	<i>Note: list RMM standard phrases according to the control hierarchy indicated in the ECHA template: 1. Technical measures to prevent release, 2. Technical measures to prevent dispersion, 3. Organisational measures, 4. Personal protection. Phrases between brackets are good practice advice only, beyond REACH Chemical Safety Assessment and may be</i>

	<i>communicated in Section 5 of the ES or within the main sections of the SDS.</i>
Bulk transfers [CS14]..(closed systems) [CS107]	No other specific measures identified [E120]. Wear suitable gloves tested to EN374 [PPE15].
Bulk transfers [CS14]..(closed systems) [CS107] With occasional controlled exposure [CS137]	Ensure material transfers are under containment or extract ventilation [E66].
Bulk transfers [CS14]. Dedicated facility [CS81].	Ensure material transfers are under containment or extract ventilation [E66].
Bulk weighing [CS91](closed systems) [CS107].	No other specific measures identified [E120]. Wear suitable gloves tested to EN374 [PPE15].
Bulk weighing [CS91]With occasional controlled exposure [CS137]	Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour) [E40]. Avoid carrying out operation for more than 4 hours [OC12]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].
Small scale weighing [CS90]	Ensure material transfers are under containment or extract ventilation [E66]. Avoid carrying out operation for more than 1 hour [OC11].
Additive premixing [CS92](closed systems) [CS107]	Ensure material transfers are under containment or extract ventilation [E66].
Additive premixing [CS92](open systems) [CS108]; With sample collection [CS56].	Ensure material transfers are under containment or extract ventilation [E66]. Avoid carrying out operation for more than 4 hours [OC12].
Additive premixing [CS92] General exposures (open systems) [CS16].	Ensure material transfers are under containment or extract ventilation [E66]. Avoid carrying out operation for more than 4 hours [OC12].
Bulk transfers [CS14]. Drum/batch transfers [CS8].	Provide enhanced mechanical ventilation by mechanical means [E48]. Ensure material transfers are under containment or extract ventilation [E66]. Wear suitable gloves tested to EN374 [PPE15].
Bulk transfers [CS14]. Small package filling [CS7].	Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour) [E40].; Ensure material transfers are under containment or extract ventilation [E66]. Wear suitable gloves tested to EN374 [PPE15].
Calendering (including Banburys) [CS64]	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings [E60]. Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour) [E40]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].
Production of articles by dipping and pouring [CS113].	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings [E60]. Provide a good standard of general or controlled

	ventilation (10 to 15 air changes per hour) [E40].
Extrusion and masterbatching [CS88]	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings [E60]. Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour) [E40]. Wear suitable gloves tested to EN374 [PPE15].
Injection moulding of articles [CS89]	Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour) [E40]. Provide extract ventilation to material transfer points and other openings [E82]. Wear suitable gloves tested to EN374 [PPE15].
Equipment maintenance [CS5].	Drain down system prior to equipment break-in or maintenance [E65]. Provide a good standard of general or controlled ventilation (10 to 15 air changes per hour) [E40]. Avoid carrying out operation for more than 4 hours [OC12]. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training [PPE16].
Storage [CS67] With occasional controlled exposure [CS137]	Provide extract ventilation to points where emissions occur [E54].

Section 3	Exposure Estimation
3.1. Health	<i>When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted DNELs and the resulting risk characterisation ratios are expected to be less than 1 as indicated in Appendix A.</i>
3.2. Environment	<i>When the recommended risk management measures (RMMs) and operational conditions (OCs) are observed, exposures are not expected to exceed the predicted PNECs and the resulting risk characterisation ratios are expected to be less than 1.</i>
Section 4	Guidance to check compliance with the Exposure Scenario
4.1. Health	<i>Confirm that RMMs and OCs are as described or of equivalent efficiency. See Appendix A for details of efficiencies and OC.</i>
4.2. Environment	<i>Confirm that RMMs and OCs are as described or of equivalent efficiency. The required efficiency removal from water is 81.6% which would be typically found in waste-water treatment plant.</i>

<b>Section 5</b>	<b>Additional good practice advice beyond the REACH Chemical Safety Assessment - (Section Optional)</b>
<b>Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH.</b>	
<b>Control of Worker Exposure</b>	
<i>Selection of relevant Contributing Scenario phrases</i>	<i>Good practice RMM phrases may be incorporated in this section or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>
<b>Control of environmental exposure</b>	
<i>Selection of relevant RMM Core Phrases</i>	<i>Good practice RMM phrases may be incorporated in this section or consolidated into the main sections of the SDS, depending on the preference of the Registrant and functionality of the available e-SDS system.</i>

## Exposure estimation

### Workers exposure

The worker exposure estimates for the activities associated with the manufacturing of 3a,4,7,7a-tetrahydro-4,7-methanoindene were assessed using ECETOC TRAv2 (Further details on request).

### Consumer exposure

Not applicable.

### Indirect exposure of humans via the environment (oral)

The estimation of indirect human exposure via the environment was conducted using EUSES v2.1.1. (Further details on request).

### Environmental exposure

The PECs are based on the factors shown in Section 2.2 (Further details on request).

End of the safety data sheet.