



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
Regulation (EC) No. 1907/2006 as amended by Commission Regulation (EU) 2020/878 and  
Regulation (EC) No. 1272/2008

Issuing Date 15-Mar-2023

Revision Date 15-Mar-2023

Revision Number 1

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

### 1.1. Product identifier

**Product Code(s)** AMO  
**Product Name** AMSOIL Premium Protection Synthetic SAE 10W-40 Motor Oil  
**Synonyms** None  
**Pure substance/mixture** Mixture

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

**Recommended use** Engine oil  
**Uses advised against** Avoid formation of mists

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

**Supplier**  
AMSOIL INC.  
One AMSOIL Center  
Superior, WI 54880, USA  
T: +1 715-392-7101

### For further information, please contact

**E-mail address** compliance@amsoil.com

### 1.4. Emergency telephone number

**Emergency telephone** CHEMTREC (Poland): 48-223988029  
CHEMTREC: +1 703-741-5970 (24h)

**Emergency telephone - §45 - (EC)1272/2008**

**Europe** 112

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

*Regulation (EC) No 1272/2008*

**Chronic aquatic toxicity** Category 3 - (H412)

### 2.2. Label elements

Contains Hydrogenated base oil, Hydrogenated base oil

#### Hazard statements

H412 - Harmful to aquatic life with long lasting effects

#### Precautionary Statements - EU (§28, 1272/2008)

P273 - Avoid release to the environment

P501 - Dispose of contents/ container to an approved waste disposal plant

**Unknown aquatic toxicity** Contains 0 % of components with unknown hazards to the aquatic environment.

### 2.3. Other hazards

Causes mild skin irritation. Harmful to aquatic life.

**Endocrine Disruptor Information** Contains a known or suspected endocrine disruptor.

| Chemical name              | EU - REACH (1907/2006) - Article 59(1) - Candidate List of Substances of Very High Concern (SVHC) for Authorisation | EU - REACH (1907/2006) - Endocrine Disruptor Assessment List of Substances |
|----------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| Phenol, dodecyl-, branched | Endocrine disrupting properties                                                                                     | Endocrine disrupting properties                                            |

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Not applicable

### 3.2 Mixtures

| Chemical name                                                                                               | Weight-% | REACH registration number | EC No (EU Index No)         | Classification according to Regulation (EC) No. 1272/2008 [CLP]                | Specific concentration limit (SCL)                                                          | M-Factor | M-Factor (long-term) |
|-------------------------------------------------------------------------------------------------------------|----------|---------------------------|-----------------------------|--------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|----------|----------------------|
| Hydrogenated base oil<br>72623-87-1                                                                         | 50-60    | No data available         | (649-483-00-5)<br>276-738-4 | Carc. 1B (*L)<br>(H350)                                                        | -                                                                                           | -        | -                    |
| Hydrogenated base oil<br>72623-87-1                                                                         | 20-25    | No data available         | (649-483-00-5)<br>276-738-4 | Asp. Tox 1<br>(H304)                                                           | -                                                                                           | -        | -                    |
| Hydrogenated base oil<br>64742-65-0                                                                         | 10-15    | No data available         | (649-474-00-6)<br>265-169-7 | Carc. 1B (*L)<br>(H350)                                                        | -                                                                                           | -        | -                    |
| bis(nonylphenyl)amine<br>36878-20-3                                                                         | 1-5      | No data available         | 253-249-4                   | Aquatic Chronic 4<br>(H413)                                                    | -                                                                                           | -        | -                    |
| Phosphorodithioic acid, mixed<br>O,O-bis(1,3-dimethyl butyl and iso-Pr)<br>esters, zinc salts<br>84605-29-8 | 1-5      | No data available         | 283-392-8                   | Skin Irrit. 2<br>(H315)<br>Eye Dam. 1<br>(H318)<br>Aquatic Chronic 2<br>(H411) | Skin Irrit. 2 ::<br>C>=6.25%<br>Eye Dam. 1 ::<br>C>12.5%<br>Eye Irrit. 2 ::<br>10%<C<=12.5% | -        | -                    |
| Hydrogenated base oil<br>64742-54-7                                                                         | 1-5      | No data available         | (649-467-00-8)<br>265-157-1 | Carc. 1B<br>[*L](H350)                                                         | -                                                                                           | -        | -                    |
| Benzene,<br>polypropylene<br>derivatives,<br>sulfonated, calcium<br>salts<br>75975-85-8                     | 0.1-1    | No data available         | No information<br>available | Eye Irrit. 2<br>(H319)<br>Skin Sens. 1B;<br>H317                               | SCL Skin<br>Sens. 1B;<br>H317: C > 10%                                                      | -        | -                    |
| Phenol, dodecyl-,<br>branched                                                                               | <0.1     | No data available         | (604-092-00-9)<br>310-154-3 | Skin Corr. 1C<br>(H314)                                                        | -                                                                                           | 10       | 10                   |

|                                |          |                   |                             |                                                                                                                                                                    |   |   |   |
|--------------------------------|----------|-------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|
| 121158-58-5                    |          |                   |                             | Eye Dam. 1 (H318)<br>Repr. 1B (H360F)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410)                                                                        |   |   |   |
| Diphenylamine<br>122-39-4      | <0.1     | No data available | (612-026-00-5)<br>204-539-4 | Acute Tox. 3 (H301)<br>Acute Tox. 3 (H311)<br>Acute Tox. 3 (H331)<br>Eye Irrit. 2 (H319)<br>STOT RE 2 (H373)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410) | - | - | - |
| 2-methylpropan-1-ol<br>78-83-1 | <0.01    | No data available | (603-108-00-1)<br>201-148-0 | Skin Irrit. 2 (H315)<br>Eye Dam. 1 (H318)<br>STOT SE 3 (H335)<br>STOT SE 3 (H336)<br>Flam. Liq. 3 (H226)                                                           | - | - | - |
| Nonane<br>111-84-2             | <0.001   | No data available | 203-913-4                   | Flam. Liq. 3 (H226)<br>Skin Irrit. 2 (H315)<br>STOT SE 3 (H336)<br>Asp. Tox. 1 (H304)<br>Aquatic Acute 1 (H400)<br>Aquatic Chronic 1 (H410)                        | - | - | - |
| Hydrogen sulphide<br>7783-06-4 | <0.001   | No data available | (016-001-00-4)<br>231-977-3 | Acute Tox. 2 (H330)<br>Aquatic Acute 1 (H400)<br>Flam. Gas 1 (H220)<br>Press. Gas                                                                                  | - | - | - |
| Benzene<br>71-43-2             | <0.00001 | -                 | (601-020-00-8)<br>200-753-7 | Skin Irrit. 2 (H315)<br>Eye Irrit. 2 (H319)<br>Muta. 1B                                                                                                            | - | - | - |

|                          |          |                      |                             |                                                                                                                                                |   |   |   |
|--------------------------|----------|----------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|
|                          |          |                      |                             | (H340)<br>Carc. 1A<br>(H350)<br>STOT RE 1<br>(H372)<br>Asp. Tox. 1<br>(H304)<br>Flam. Liq. 2<br>(H225)                                         |   |   |   |
| Toluene<br>108-88-3      | <0.00001 | -                    | (601-021-00-3)<br>203-625-9 | Skin Irrit. 2<br>(H315)<br>Repr. 2<br>(H361d)<br>STOT SE 3<br>(H336)<br>STOT RE 2<br>(H373)<br>Asp. Tox. 1<br>(H304)<br>Flam. Liq. 2<br>(H225) | - | - | - |
| Naphthalene<br>91-20-3   | <0.00001 | No data<br>available | (601-052-00-2)<br>202-049-5 | Acute Tox. 4<br>(H302)<br>Carc. 2 (H351)<br>Aquatic Acute<br>1 (H400)<br>Aquatic<br>Chronic 1<br>(H410)                                        | - | - | - |
| Ethylbenzene<br>100-41-4 | <0.00001 | No data<br>available | (601-023-00-4)<br>202-849-4 | Acute Tox. 4<br>(H332)<br>STOT RE 2<br>(H373)<br>Asp. Tox. 1<br>(H304)<br>Flam. Liq. 2<br>(H225)                                               | - | - | - |

**Full text of H- and EUH-phrases: see section 16**

Acute Toxicity Estimate

If LD50/LC50 data is not available or does not correspond to the classification category, then the appropriate conversion value from CLP Annex I, Table 3.1.2, is used to calculate the acute toxicity estimate (ATE<sub>mix</sub>) for classifying a mixture based on its components

| Chemical name                       | Oral LD50 mg/kg | Dermal LD50 mg/kg | Inhalation LC50 - 4<br>hour - dust/mist -<br>mg/L | Inhalation LC50 - 4<br>hour - vapour - mg/L | Inhalation LC50 - 4<br>hour - gas - ppm |
|-------------------------------------|-----------------|-------------------|---------------------------------------------------|---------------------------------------------|-----------------------------------------|
| Hydrogenated base oil<br>72623-87-1 | 5005            | 2002              | No data available                                 | No data available                           | No data available                       |
| Hydrogenated base oil<br>72623-87-1 | 5005            | 2002              | No data available                                 | No data available                           | No data available                       |
| Hydrogenated base oil<br>64742-65-0 | 15015           | 5005              | 2.4024                                            | No data available                           | No data available                       |
| bis(nonylphenyl)amine<br>36878-20-3 | 5005            | No data available | No data available                                 | No data available                           | No data available                       |
| Phosphorodithioic acid,<br>mixed    | 3100<br>3200    | 2002              | 2.3023                                            | No data available                           | No data available                       |

| Chemical name                                                          | Oral LD50 mg/kg   | Dermal LD50 mg/kg | Inhalation LC50 - 4 hour - dust/mist - mg/L | Inhalation LC50 - 4 hour - vapour - mg/L | Inhalation LC50 - 4 hour - gas - ppm |
|------------------------------------------------------------------------|-------------------|-------------------|---------------------------------------------|------------------------------------------|--------------------------------------|
| O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts<br>84605-29-8 |                   |                   |                                             |                                          |                                      |
| Hydrogenated base oil<br>64742-54-7                                    | 15015             | 5005              | No data available                           | No data available                        | No data available                    |
| Phenol, dodecyl-, branched<br>121158-58-5                              | No data available | 15000             | No data available                           | No data available                        | No data available                    |
| Diphenylamine<br>122-39-4                                              | 1120              | 2002              | No data available                           | No data available                        | No data available                    |
| 2-methylpropan-1-ol<br>78-83-1                                         | 2460              | 3400              | 27.2973                                     | No data available                        | No data available                    |
| Nonane<br>111-84-2                                                     | No data available | No data available | No data available                           | 16.7853                                  | No data available                    |
| Hydrogen sulphide<br>7783-06-4                                         | No data available | No data available | No data available                           | No data available                        | 501                                  |
| Benzene<br>71-43-2                                                     | 810               | 8208.2            | 44.66                                       | No data available                        | No data available                    |
| Toluene<br>108-88-3                                                    | 2600              | 12000             | 12.5                                        | No data available                        | No data available                    |
| Naphthalene<br>91-20-3                                                 | 1110              | 1120              | 0.4004                                      | No data available                        | No data available                    |
| Ethylbenzene<br>100-41-4                                               | 3500              | 15400             | 17.4                                        | No data available                        | No data available                    |

This product does not contain candidate substances of very high concern at a concentration  $\geq 0.1\%$  (Regulation (EC) No. 1907/2006 (REACH), Article 59)

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

|                                           |                                                                                                                                                                                               |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>General advice</b>                     | Get medical attention immediately if symptoms occur. Show this safety data sheet to the doctor in attendance.                                                                                 |
| <b>Inhalation</b>                         | Remove person to fresh air and keep comfortable for breathing.                                                                                                                                |
| <b>Eye contact</b>                        | Rinse thoroughly with plenty of water, also under the eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. |
| <b>Skin contact</b>                       | Wash skin with soap and water. Take off contaminated clothing. Get medical attention if irritation develops and persists.                                                                     |
| <b>Ingestion</b>                          | Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.                                                                                                   |
| <b>Self-protection of the first aider</b> | Wear personal protective clothing (see section 8).                                                                                                                                            |

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

|                 |                                                                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Symptoms</b> | May cause gastrointestinal discomfort if consumed in large amounts. May cause temporary eye irritation. Prolonged contact may cause redness and irritation. |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|

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

**Note to doctors** Treat symptomatically.

### **SECTION 5: Firefighting measures**

#### 5.1. Extinguishing media

**Suitable Extinguishing Media** Water spray, carbon dioxide (CO<sub>2</sub>), dry chemical, alcohol-resistant foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**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

**Specific hazards arising from the chemical** Containers can burst or explode when heated, due to excessive pressure build-up. Thermal decomposition can lead to release of irritating gases and vapours.

**Hazardous combustion products** Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Hydrocarbons.

#### 5.3. Advice for firefighters

**Specific/special fire-fighting measures** Fires need to be assessed to determine appropriate protocols and safety measures for firefighting, including establishing safe zones, extinguishing media to be used, firefighter protection, and actions to control or extinguish the fire.

**Special protective equipment and precautions for fire-fighters** Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

### **SECTION 6: Accidental release measures**

#### 6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions** Do not handle until all safety precautions have been read and understood.

**For emergency responders** Use personal protection recommended in Section 8.

#### 6.2. Environmental precautions

**Environmental precautions** Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional Ecological Information.

#### 6.3. Methods and material for containment and cleaning up

**Methods for containment** Prevent materials or runoff from entering drains, sewers, streams, ground water or bodies of water.

**Methods for cleaning up** Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

**Prevention of secondary hazards** Clean contaminated objects and areas thoroughly observing environmental regulations.

#### 6.4. Reference to other sections

**Reference to other sections** For additional information see: Section 8: Exposure controls/personal protection; Section 12: Ecological information; Section 13: Disposal considerations.

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

Avoid contact with used product. Do not touch or walk through spilled material. Take off contaminated clothing and wash it before reuse. Wash thoroughly after handling.

**General hygiene considerations**

Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

**7.2. Conditions for safe storage, including any incompatibilities****Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place. Do not reuse empty containers. Store away from incompatible materials. See section 10 for more information. Protect from physical damage.

**Storage class (TRGS 510)**

LGK 10.

**7.3. Specific end use(s)****Specific use(s).**

The identified uses for this product are detailed in Section 1.2.

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****Exposure Limits**

Under conditions which may generate mists, the following exposure limits are recommended: Long-term exposure limit (8-hour TWA): 5 mg/m<sup>3</sup>. Short-term exposure limit (15-minute): 10 mg/m<sup>3</sup>.

| Chemical name                  | European Union                                                                       | Austria                                                                                                                            | Belgium                                                                                    | Bulgaria                                                                                      | Croatia                                                                                       |
|--------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| Diphenylamine<br>122-39-4      | -                                                                                    | TWA: 0.7 ppm<br>TWA: 5 mg/m <sup>3</sup><br>STEL 1.4 ppm<br>STEL 10 mg/m <sup>3</sup><br>H*                                        | TWA: 10 mg/m <sup>3</sup>                                                                  | TWA: 10 mg/m <sup>3</sup>                                                                     | TWA: 10 mg/m <sup>3</sup><br>STEL: 20 mg/m <sup>3</sup>                                       |
| 2-methylpropan-1-ol<br>78-83-1 | -                                                                                    | TWA: 50 ppm<br>TWA: 150 mg/m <sup>3</sup><br>STEL 200 ppm<br>STEL 600 mg/m <sup>3</sup>                                            | TWA: 50 ppm<br>TWA: 154 mg/m <sup>3</sup>                                                  | -                                                                                             | TWA: 50 ppm<br>TWA: 154 mg/m <sup>3</sup><br>STEL: 75 ppm<br>STEL: 231 mg/m <sup>3</sup><br>* |
| Nonane<br>111-84-2             | -                                                                                    | -                                                                                                                                  | TWA: 200 ppm<br>TWA: 1065 mg/m <sup>3</sup>                                                | -                                                                                             | -                                                                                             |
| Hydrogen sulphide<br>7783-06-4 | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup> | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL 5 ppm<br>STEL 7 mg/m <sup>3</sup><br>Ceiling: 5 ppm<br>Ceiling: 7 mg/m <sup>3</sup> | TWA: 1.64 ppm<br>TWA: 2.3 mg/m <sup>3</sup><br>STEL: 4 ppm<br>STEL: 5.61 mg/m <sup>3</sup> | STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup><br>TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup>          | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup>          |
| Benzene<br>71-43-2             | TWA: 0.2 ppm<br>TWA: 0.66 mg/m <sup>3</sup><br>*                                     | H*                                                                                                                                 | TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>D*                                            | TWA: 3.25 mg/m <sup>3</sup><br>TWA: 1 ppm<br>K*                                               | TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>*                                                |
| Toluene<br>108-88-3            | TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup><br>*                                       | TWA: 50 ppm<br>TWA: 190 mg/m <sup>3</sup><br>STEL 100 ppm<br>STEL 380 mg/m <sup>3</sup>                                            | TWA: 20 ppm<br>TWA: 77 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup>   | STEL: 100 ppm<br>STEL: 384.0 mg/m <sup>3</sup><br>TWA: 50 ppm<br>TWA: 192.0 mg/m <sup>3</sup> | TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup>     |

|                                |                                                                                                 | H*                                                                                             | D*                                                                                              | K*                                                                                                     | *                                                                                                 |
|--------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Naphthalene<br>91-20-3         | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup>                                                        | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup><br>H*                                                 | TWA: 10 ppm<br>TWA: 53 mg/m <sup>3</sup><br>STEL: 15 ppm<br>STEL: 80 mg/m <sup>3</sup><br>D*    | STEL: 75.0 mg/m <sup>3</sup><br>TWA: 50.0 mg/m <sup>3</sup>                                            | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup>                                                          |
| Ethylbenzene<br>100-41-4       | TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>* | TWA: 100 ppm<br>TWA: 440 mg/m <sup>3</sup><br>STEL 200 ppm<br>STEL 880 mg/m <sup>3</sup><br>H* | TWA: 20 ppm<br>TWA: 87 mg/m <sup>3</sup><br>STEL: 125 ppm<br>STEL: 551 mg/m <sup>3</sup><br>D*  | STEL: 545 mg/m <sup>3</sup><br>TWA: 435 mg/m <sup>3</sup><br>K*                                        | TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>*   |
| Chemical name                  | Cyprus                                                                                          | Czech Republic                                                                                 | Denmark                                                                                         | Estonia                                                                                                | Finland                                                                                           |
| Diphenylamine<br>122-39-4      | -                                                                                               | TWA: 10 mg/m <sup>3</sup><br>Ceiling: 20 mg/m <sup>3</sup><br>D*                               | TWA: 5 mg/m <sup>3</sup><br>STEL: 10 mg/m <sup>3</sup>                                          | TWA: 10 mg/m <sup>3</sup>                                                                              | TWA: 5 mg/m <sup>3</sup><br>STEL: 10 mg/m <sup>3</sup>                                            |
| 2-methylpropan-1-ol<br>78-83-1 | -                                                                                               | TWA: 300 mg/m <sup>3</sup><br>Ceiling: 600 mg/m <sup>3</sup><br>D*                             | Ceiling: 50 ppm<br>Ceiling: 150 mg/m <sup>3</sup><br>H*                                         | TWA: 50 ppm<br>TWA: 150 mg/m <sup>3</sup>                                                              | TWA: 150 mg/m <sup>3</sup><br>TWA: 50 ppm<br>STEL: 75 ppm<br>STEL: 230 mg/m <sup>3</sup><br>iho*  |
| Nonane<br>111-84-2             | -                                                                                               | -                                                                                              | TWA: 200 ppm<br>TWA: 1050 mg/m <sup>3</sup><br>STEL: 400 ppm<br>STEL: 2100 mg/m <sup>3</sup>    | TWA: 150 ppm<br>TWA: 800 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 1100 mg/m <sup>3</sup>            | TWA: 200 ppm<br>TWA: 1100 mg/m <sup>3</sup><br>STEL: 250 ppm<br>STEL: 1300 mg/m <sup>3</sup>      |
| Hydrogen sulphide<br>7783-06-4 | STEL: 14 mg/m <sup>3</sup><br>STEL: 10 ppm<br>TWA: 7 mg/m <sup>3</sup><br>TWA: 5 ppm            | TWA: 7 mg/m <sup>3</sup><br>Ceiling: 14 mg/m <sup>3</sup>                                      | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 14 mg/m <sup>3</sup><br>STEL: 10 ppm            | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup>                   | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup>              |
| Benzene<br>71-43-2             | *<br>TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup>                                                  | TWA: 3 mg/m <sup>3</sup><br>Ceiling: 10 mg/m <sup>3</sup><br>D*                                | TWA: 0.5 ppm<br>TWA: 1.6 mg/m <sup>3</sup><br>H*<br>STEL: 1 ppm<br>STEL: 3.2 mg/m <sup>3</sup>  | TWA: 0.5 ppm<br>TWA: 1.5 mg/m <sup>3</sup><br>STEL: 3 ppm<br>STEL: 9 mg/m <sup>3</sup><br>A*           | TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>iho*                                                 |
| Toluene<br>108-88-3            | *<br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup><br>TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup>  | TWA: 200 mg/m <sup>3</sup><br>Ceiling: 500 mg/m <sup>3</sup><br>D*                             | TWA: 25 ppm<br>TWA: 94 mg/m <sup>3</sup><br>H*<br>STEL: 384 mg/m <sup>3</sup><br>STEL: 100 ppm  | TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup><br>A*        | TWA: 25 ppm<br>TWA: 81 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 380 mg/m <sup>3</sup><br>iho*  |
| Naphthalene<br>91-20-3         | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup>                                                        | TWA: 50 mg/m <sup>3</sup><br>Ceiling: 100 mg/m <sup>3</sup>                                    | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup><br>STEL: 20 ppm<br>STEL: 100 mg/m <sup>3</sup>         | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup>                                                               | TWA: 1 ppm<br>TWA: 5 mg/m <sup>3</sup><br>STEL: 2 ppm<br>STEL: 10 mg/m <sup>3</sup>               |
| Ethylbenzene<br>100-41-4       | *<br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup> | TWA: 200 mg/m <sup>3</sup><br>Ceiling: 500 mg/m <sup>3</sup><br>D*                             | TWA: 50 ppm<br>TWA: 217 mg/m <sup>3</sup><br>H*<br>STEL: 434 mg/m <sup>3</sup><br>STEL: 100 ppm | S+<br>TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>A* | TWA: 50 ppm<br>TWA: 220 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 880 mg/m <sup>3</sup><br>iho* |
| Chemical name                  | France                                                                                          | Germany TRGS                                                                                   | Germany DFG                                                                                     | Greece                                                                                                 | Hungary                                                                                           |
| Diphenylamine<br>122-39-4      | TWA: 10 mg/m <sup>3</sup>                                                                       | TWA: 5 mg/m <sup>3</sup><br>H*                                                                 | TWA: 5 mg/m <sup>3</sup><br>Peak: 10 mg/m <sup>3</sup><br>*                                     | TWA: 10 mg/m <sup>3</sup><br>STEL: 20 mg/m <sup>3</sup>                                                | -                                                                                                 |
| 2-methylpropan-1-ol<br>78-83-1 | TWA: 50 ppm<br>TWA: 150 mg/m <sup>3</sup>                                                       | TWA: 100 ppm<br>TWA: 310 mg/m <sup>3</sup>                                                     | TWA: 100 ppm<br>TWA: 310 mg/m <sup>3</sup><br>Peak: 100 ppm<br>Peak: 310 mg/m <sup>3</sup>      | TWA: 100 ppm<br>TWA: 300 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 300 mg/m <sup>3</sup>             | -                                                                                                 |
| Nonane<br>111-84-2             | TWA: 200 ppm<br>TWA: 1050 mg/m <sup>3</sup>                                                     | -                                                                                              | -                                                                                               | -                                                                                                      | -                                                                                                 |



|                                |                                                                                                   |                                                                                                     |                                                                                                   |                                                                                                    |                                                                                                                                          |
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|                                | STEL: 1500 mg/m <sup>3</sup>                                                                      |                                                                                                     |                                                                                                   |                                                                                                    |                                                                                                                                          |
| Hydrogen sulphide<br>7783-06-4 | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup>              | TWA: 5 ppm<br>TWA: 7.1 mg/m <sup>3</sup>                                                            | TWA: 5 ppm<br>TWA: 7.1 mg/m <sup>3</sup><br>Peak: 10 ppm<br>Peak: 14.2 mg/m <sup>3</sup>          | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup>               | TWA: 7 mg/m <sup>3</sup><br>STEL: 14 mg/m <sup>3</sup>                                                                                   |
| Benzene<br>71-43-2             | TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>STEL: 1500 mg/m <sup>3</sup><br>*                    | H*                                                                                                  | *                                                                                                 | TWA: 3.25 mg/m <sup>3</sup><br>TWA: 1.0 ppm<br>*                                                   | TWA: 3.25 mg/m <sup>3</sup><br>b*                                                                                                        |
| Toluene<br>108-88-3            | TWA: 20 ppm<br>TWA: 76.8 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup><br>*   | TWA: 50 ppm<br>TWA: 190 mg/m <sup>3</sup><br>H*                                                     | TWA: 50 ppm<br>TWA: 190 mg/m <sup>3</sup><br>Peak: 100 ppm<br>Peak: 380 mg/m <sup>3</sup><br>*    | TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup><br>*     | TWA: 190 mg/m <sup>3</sup><br>STEL: 380 mg/m <sup>3</sup><br>b*                                                                          |
| Naphthalene<br>91-20-3         | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup>                                                          | TWA: 0.4 ppm<br>TWA: 2 mg/m <sup>3</sup><br>H*                                                      | *                                                                                                 | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup>                                                           | TWA: 50 mg/m <sup>3</sup>                                                                                                                |
| Ethylbenzene<br>100-41-4       | TWA: 20 ppm<br>TWA: 88.4 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 442 mg/m <sup>3</sup><br>*   | TWA: 20 ppm<br>TWA: 88 mg/m <sup>3</sup><br>H*                                                      | TWA: 20 ppm<br>TWA: 88 mg/m <sup>3</sup><br>Peak: 40 ppm<br>Peak: 176 mg/m <sup>3</sup><br>*      | TWA: 100 ppm<br>TWA: 435 mg/m <sup>3</sup><br>STEL: 125 ppm<br>STEL: 545 mg/m <sup>3</sup>         | TWA: 442 mg/m <sup>3</sup><br>STEL: 884 mg/m <sup>3</sup><br>b*                                                                          |
| Chemical name                  | Ireland                                                                                           | Italy MDLPS                                                                                         | Italy AIDII                                                                                       | Latvia                                                                                             | Lithuania                                                                                                                                |
| Diphenylamine<br>122-39-4      | TWA: 10 mg/m <sup>3</sup><br>STEL: 20 mg/m <sup>3</sup>                                           | -                                                                                                   | TWA: 10 mg/m <sup>3</sup>                                                                         | -                                                                                                  | TWA: 4 mg/m <sup>3</sup><br>STEL: 12 mg/m <sup>3</sup>                                                                                   |
| 2-methylpropan-1-ol<br>78-83-1 | TWA: 150 mg/m <sup>3</sup><br>TWA: 50 ppm<br>STEL: 225 mg/m <sup>3</sup><br>STEL: 75 ppm          | -                                                                                                   | TWA: 50 ppm<br>TWA: 152 mg/m <sup>3</sup>                                                         | TWA: 10 mg/m <sup>3</sup>                                                                          | O*<br>TWA: 10 mg/m <sup>3</sup>                                                                                                          |
| Nonane<br>111-84-2             | TWA: 200 ppm<br>TWA: 1050 mg/m <sup>3</sup><br>STEL: 600 ppm<br>STEL: 3150 mg/m <sup>3</sup>      | -                                                                                                   | TWA: 200 ppm<br>TWA: 1049 mg/m <sup>3</sup>                                                       | TWA: 100 mg/m <sup>3</sup><br>STEL: 300 mg/m <sup>3</sup>                                          | TWA: 150 ppm<br>TWA: 800 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 1100 mg/m <sup>3</sup>                                              |
| Hydrogen sulphide<br>7783-06-4 | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 14 mg/m <sup>3</sup><br>STEL: 10 ppm              | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup>                | TWA: 1 ppm<br>TWA: 1.4 mg/m <sup>3</sup><br>STEL: 5 ppm<br>STEL: 7 mg/m <sup>3</sup>              | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup>               | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup><br>Ceiling: 15 ppm<br>Ceiling: 20 mg/m <sup>3</sup> |
| Benzene<br>71-43-2             | TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>STEL: 3 ppm<br>STEL: 9.75 mg/m <sup>3</sup><br>Sk*   | TWA: 3.25 mg/m <sup>3</sup><br>TWA: 1 ppm<br>cute*                                                  | TWA: 0.5 ppm<br>TWA: 1.6 mg/m <sup>3</sup><br>STEL: 2.5 ppm<br>STEL: 8 mg/m <sup>3</sup><br>cute* | TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>Ada*                                                  | O*<br>TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>STEL: 6 ppm<br>STEL: 19 mg/m <sup>3</sup>                                             |
| Toluene<br>108-88-3            | TWA: 192 mg/m <sup>3</sup><br>TWA: 50 ppm<br>STEL: 384 mg/m <sup>3</sup><br>STEL: 100 ppm<br>Sk*  | TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup><br>cute*                                                  | TWA: 20 ppm<br>TWA: 75.4 mg/m <sup>3</sup>                                                        | TWA: 14 ppm<br>TWA: 50 mg/m <sup>3</sup><br>STEL: 40 ppm<br>STEL: 150 mg/m <sup>3</sup><br>Ada*    | O*<br>TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup>                                          |
| Naphthalene<br>91-20-3         | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup><br>STEL: 30 ppm<br>STEL: 150 mg/m <sup>3</sup>           | -                                                                                                   | TWA: 10 ppm<br>TWA: 52 mg/m <sup>3</sup><br>cute*                                                 | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup>                                                           | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup>                                                                                                 |
| Ethylbenzene<br>100-41-4       | TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>Sk* | TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>cute* | TWA: 20 ppm<br>TWA: 87 mg/m <sup>3</sup>                                                          | TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>Ada* | O*<br>TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup>                                         |

| Chemical name                  | Luxembourg                                                                                            | Malta                                                                                               | Netherlands                                                                                         | Norway                                                                                             | Poland                                                                                                    |
|--------------------------------|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Diphenylamine<br>122-39-4      | -                                                                                                     | -                                                                                                   | -                                                                                                   | TWA: 5 mg/m <sup>3</sup><br>STEL: 10 mg/m <sup>3</sup>                                             | TWA: 8 mg/m <sup>3</sup>                                                                                  |
| 2-methylpropan-1-ol<br>78-83-1 | -                                                                                                     | -                                                                                                   | -                                                                                                   | Ceiling: 25 ppm<br>Ceiling: 75 mg/m <sup>3</sup><br>H*                                             | STEL: 200 mg/m <sup>3</sup><br>TWA: 100 mg/m <sup>3</sup><br>skóra*                                       |
| Nonane<br>111-84-2             | -                                                                                                     | -                                                                                                   | -                                                                                                   | TWA: 100 ppm<br>TWA: 525 mg/m <sup>3</sup><br>STEL: 150 ppm<br>STEL: 656.25 mg/m <sup>3</sup>      | -                                                                                                         |
| Hydrogen sulphide<br>7783-06-4 | STEL: 14 mg/m <sup>3</sup><br>STEL: 10 ppm<br>TWA: 7 mg/m <sup>3</sup><br>TWA: 5 ppm                  | STEL: 14 mg/m <sup>3</sup><br>STEL: 10 ppm<br>TWA: 7 mg/m <sup>3</sup><br>TWA: 5 ppm                | TWA: 2.3 mg/m <sup>3</sup>                                                                          | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>Ceiling: 10 ppm<br>Ceiling: 14 mg/m <sup>3</sup>         | STEL: 14 mg/m <sup>3</sup><br>TWA: 7 mg/m <sup>3</sup>                                                    |
| Benzene<br>71-43-2             | -                                                                                                     | -                                                                                                   | TWA: 0.7 mg/m <sup>3</sup><br>H*                                                                    | TWA: 0.2 ppm<br>TWA: 0.66 mg/m <sup>3</sup><br>STEL: 0.6 ppm<br>STEL: 1.98 mg/m <sup>3</sup><br>H* | TWA: 1.6 mg/m <sup>3</sup><br>skóra*                                                                      |
| Toluene<br>108-88-3            | Peau*<br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup><br>TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup>    | skin*<br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup><br>TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup>  | TWA: 150 mg/m <sup>3</sup><br>STEL: 384 mg/m <sup>3</sup>                                           | TWA: 25 ppm<br>TWA: 94 mg/m <sup>3</sup><br>STEL: 37.5 ppm<br>STEL: 141 mg/m <sup>3</sup><br>H*    | STEL: 200 mg/m <sup>3</sup><br>TWA: 100 mg/m <sup>3</sup><br>skóra*                                       |
| Naphthalene<br>91-20-3         | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup>                                                              | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup>                                                            | TWA: 50 mg/m <sup>3</sup><br>STEL: 80 mg/m <sup>3</sup>                                             | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup><br>STEL: 20 ppm<br>STEL: 75 mg/m <sup>3</sup>             | STEL: 50 mg/m <sup>3</sup><br>TWA: 20 mg/m <sup>3</sup><br>skóra*                                         |
| Ethylbenzene<br>100-41-4       | Peau*<br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup>   | skin*<br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup> | TWA: 215 mg/m <sup>3</sup><br>STEL: 430 mg/m <sup>3</sup><br>H*                                     | TWA: 5 ppm<br>TWA: 20 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 30 mg/m <sup>3</sup><br>H*        | STEL: 400 mg/m <sup>3</sup><br>TWA: 200 mg/m <sup>3</sup><br>skóra*                                       |
| Chemical name                  | Portugal                                                                                              | Romania                                                                                             | Slovakia                                                                                            | Slovenia                                                                                           | Spain                                                                                                     |
| Diphenylamine<br>122-39-4      | TWA: 10 mg/m <sup>3</sup>                                                                             | TWA: 4 mg/m <sup>3</sup><br>STEL: 6 mg/m <sup>3</sup>                                               | -                                                                                                   | TWA: 5 mg/m <sup>3</sup><br>STEL: 10 mg/m <sup>3</sup><br>K*                                       | TWA: 10 mg/m <sup>3</sup>                                                                                 |
| 2-methylpropan-1-ol<br>78-83-1 | TWA: 50 ppm                                                                                           | TWA: 33 ppm<br>TWA: 100 mg/m <sup>3</sup><br>STEL: 66 ppm<br>STEL: 200 mg/m <sup>3</sup>            | TWA: 100 ppm<br>TWA: 310 mg/m <sup>3</sup>                                                          | TWA: 100 ppm<br>TWA: 310 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 310 mg/m <sup>3</sup>         | TWA: 50 ppm<br>TWA: 154 mg/m <sup>3</sup>                                                                 |
| Nonane<br>111-84-2             | TWA: 200 ppm                                                                                          | TWA: 700 mg/m <sup>3</sup><br>STEL: 1000 mg/m <sup>3</sup>                                          | TWA: 800 mg/m <sup>3</sup><br>TWA: 150 ppm<br>Ceiling: 1100 mg/m <sup>3</sup>                       | -                                                                                                  | TWA: 200 ppm<br>TWA: 1065 mg/m <sup>3</sup>                                                               |
| Hydrogen sulphide<br>7783-06-4 | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup>                  | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup>                | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>Ceiling: 14 mg/m <sup>3</sup>                             | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup>               | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup>                      |
| Benzene<br>71-43-2             | TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>STEL: 2.5 ppm<br>Cutânea*                                | TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>P*                                                     | TWA: 1.0 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>STEL: 5.0 ppm<br>STEL: 16.25 mg/m <sup>3</sup><br>K* | TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>K*                                                    | TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>vía dérmica*                                                 |
| Toluene<br>108-88-3            | TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup><br>Cutânea* | TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup><br>P*     | TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup><br>K*<br>Ceiling: 384 mg/m <sup>3</sup>                   | TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup><br>K*    | TWA: 50 ppm<br>TWA: 192 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup><br>vía dérmica* |

| Naphthalene<br>91-20-3         | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup><br>STEL: 15 ppm<br>Cutânea*                                               | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup>                                                         | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup><br>K*<br>Ceiling: 80 mg/m <sup>3</sup>                 | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 50 mg/m <sup>3</sup><br>K*     | TWA: 10 ppm<br>TWA: 53 mg/m <sup>3</sup><br>STEL: 15 ppm<br>STEL: 80 mg/m <sup>3</sup><br>vía dérmica*     |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| Ethylbenzene<br>100-41-4       | TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>Cutânea*             | TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>P* | TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup><br>K*<br>Ceiling: 884 mg/m <sup>3</sup>              | TWA: 100 ppm<br>TWA: 442 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>K* | TWA: 100 ppm<br>TWA: 441 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 884 mg/m <sup>3</sup><br>vía dérmica* |
| Chemical name                  | Sweden                                                                                                             |                                                                                                  | Switzerland                                                                                     |                                                                                                  | United Kingdom                                                                                             |
| Diphenylamine<br>122-39-4      | NGV: 4 mg/m <sup>3</sup><br>Vägledande KGV: 12 mg/m <sup>3</sup>                                                   |                                                                                                  | TWA: 10 mg/m <sup>3</sup><br>H*                                                                 |                                                                                                  | TWA: 10 mg/m <sup>3</sup><br>STEL: 20 mg/m <sup>3</sup>                                                    |
| 2-methylpropan-1-ol<br>78-83-1 | NGV: 50 ppm<br>NGV: 150 mg/m <sup>3</sup><br>Vägledande KGV: 75 ppm<br>Vägledande KGV: 250 mg/m <sup>3</sup><br>H* |                                                                                                  | TWA: 50 ppm<br>TWA: 150 mg/m <sup>3</sup><br>STEL: 50 ppm<br>STEL: 150 mg/m <sup>3</sup>        |                                                                                                  | TWA: 50 ppm<br>TWA: 154 mg/m <sup>3</sup><br>STEL: 75 ppm<br>STEL: 231 mg/m <sup>3</sup>                   |
| Nonane<br>111-84-2             | NGV: 150 ppm<br>NGV: 800 mg/m <sup>3</sup><br>NGV: 350 mg/m <sup>3</sup>                                           |                                                                                                  | TWA: 200 ppm<br>TWA: 1050 mg/m <sup>3</sup>                                                     |                                                                                                  | -                                                                                                          |
| Hydrogen sulphide<br>7783-06-4 | NGV: 5 ppm<br>NGV: 7 mg/m <sup>3</sup><br>Bindande KGV: 10 ppm<br>Bindande KGV: 14 mg/m <sup>3</sup>               |                                                                                                  | TWA: 5 ppm<br>TWA: 7.1 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14.2 mg/m <sup>3</sup>        |                                                                                                  | TWA: 5 ppm<br>TWA: 7 mg/m <sup>3</sup><br>STEL: 10 ppm<br>STEL: 14 mg/m <sup>3</sup>                       |
| Benzene<br>71-43-2             | NGV: 0.5 ppm<br>NGV: 1.5 mg/m <sup>3</sup><br>Bindande KGV: 3 ppm<br>Bindande KGV: 9 mg/m <sup>3</sup><br>H*       |                                                                                                  | TWA: 0.2 ppm<br>TWA: 0.7 mg/m <sup>3</sup><br>H*                                                |                                                                                                  | TWA: 1 ppm<br>TWA: 3.25 mg/m <sup>3</sup><br>STEL: 3 ppm<br>STEL: 9.75 mg/m <sup>3</sup><br>Sk*            |
| Toluene<br>108-88-3            | NGV: 50 ppm<br>NGV: 192 mg/m <sup>3</sup><br>Bindande KGV: 100 ppm<br>Bindande KGV: 384 mg/m <sup>3</sup><br>H*    |                                                                                                  | TWA: 50 ppm<br>TWA: 190 mg/m <sup>3</sup><br>STEL: 200 ppm<br>STEL: 760 mg/m <sup>3</sup><br>H* |                                                                                                  | TWA: 50 ppm<br>TWA: 191 mg/m <sup>3</sup><br>STEL: 100 ppm<br>STEL: 384 mg/m <sup>3</sup><br>Sk*           |
| Naphthalene<br>91-20-3         | NGV: 10 ppm<br>NGV: 50 mg/m <sup>3</sup><br>Vägledande KGV: 15 ppm<br>Vägledande KGV: 80 mg/m <sup>3</sup>         |                                                                                                  | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup><br>H*                                                  |                                                                                                  | -                                                                                                          |
| Ethylbenzene<br>100-41-4       | NGV: 50 ppm<br>NGV: 220 mg/m <sup>3</sup><br>Bindande KGV: 200 ppm<br>Bindande KGV: 884 mg/m <sup>3</sup><br>H*    |                                                                                                  | TWA: 50 ppm<br>TWA: 220 mg/m <sup>3</sup><br>STEL: 50 ppm<br>STEL: 220 mg/m <sup>3</sup><br>H*  |                                                                                                  | TWA: 100 ppm<br>TWA: 441 mg/m <sup>3</sup><br>STEL: 125 ppm<br>STEL: 552 mg/m <sup>3</sup><br>Sk*          |

**Biological occupational exposure limits**

| Chemical name             | European Union | Austria                                                                                                                                               | Bulgaria | Croatia | Czech Republic |
|---------------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------|----------------|
| Diphenylamine<br>122-39-4 | -              | 10 g/dL Hemoglobin<br>(blood - not provided)<br>12 g/dL Hemoglobin<br>(blood - not provided)<br>79 - 97 fL mean<br>corpuscular volume<br>(blood - not | -        | -       | -              |

|                             |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                             |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                               |
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|                             |   | <p>provided)<br/> 3.2 million/<math>\mu</math>L<br/> Erythrocytes (blood - not provided)<br/> 3.8 million/<math>\mu</math>L<br/> Erythrocytes (blood - not provided)<br/> 4000 Leukocytes/<math>\mu</math>L (blood - not provided)<br/> 13000<br/> Leukocytes/<math>\mu</math>L (blood - not provided)<br/> 130000<br/> Thrombocytes/<math>\mu</math>L (blood - not provided)<br/> 150000<br/> Thrombocytes/<math>\mu</math>L (blood - not provided)<br/> <math>\leq 50</math> U/I ( - Serum transaminases SGOT not provided)<br/> <math>\leq 35</math> U/I ( - Serum transaminases SGOT not provided)<br/> <math>\leq 50</math> U/I ( - Serum transaminases SGPT not provided)<br/> <math>\leq 35</math> U/I ( - Serum transaminases SGPT not provided)<br/> <math>\leq 66</math> U/I ( - Serum transaminases GGT not provided)<br/> <math>\leq 39</math> U/I ( - Serum transaminases GGT not provided)<br/> (urine - one time yearly urine cytological examination)</p> |                                                                                                                                                                                             |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                               |
| <p>Benzene<br/> 71-43-2</p> | - | <p>10 g/dL Hemoglobin (blood - by the first screening and once yearly or for work in cokery plants every six months)<br/> 12 g/dL Hemoglobin (blood - by the first screening and once yearly or for work in cokery plants every six months)<br/> 79 - 97 fL mean corpuscular volume (blood - by the first</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>2.0 mg/L - urine (Trans, trans-Muconic acid) - at the end of exposure or end of work shift<br/> 0.045 mg/g Creatinine - urine (S-Phenyl Mercapturic acid) - at the end of work shift</p> | <p>28 <math>\mu</math>g/L - blood (Benzene) - right at the end of the work shift<br/> 46 <math>\mu</math>g/g Creatinine - urine (S-Phenylmercapturic acid) - at the end of the work shift</p> | <p>0.024 <math>\mu</math>mol/mmol Creatinine (urine - S-Phenylmercapturic acid end of shift)<br/> 0.05 mg/g Creatinine (urine - S-Phenylmercapturic acid end of shift)<br/> 1.2 <math>\mu</math>mol/mmol Creatinine (urine - trans,trans-Muconic acid end of shift)<br/> 1.5 mg/g Creatinine (urine - trans,trans-Muconic</p> |

|                     |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                |                                                                                                                                                       |                                                                                                                                                                                          |
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|                     |   | <p>screening and once yearly or for work in cokery plants every six months)<br/>3.8 million/<math>\mu</math>L<br/>Erythrocytes (blood - by the first screening and once yearly or for work in cokery plants every six months)<br/>3.2 million/<math>\mu</math>L<br/>Erythrocytes (blood - by the first screening and once yearly or for work in cokery plants every six months)<br/>13000<br/>Leukocytes/<math>\mu</math>L (blood - by the first screening and once yearly or for work in cokery plants every six months)<br/>4000 Leukocytes/<math>\mu</math>L (blood - by the first screening and once yearly or for work in cokery plants every six months)<br/>130000<br/>Thrombocytes/<math>\mu</math>L (blood - by the first screening and once yearly or for work in cokery plants every six months)<br/>150000<br/>Thrombocytes/<math>\mu</math>L (blood - by the first screening and once yearly or for work in cokery plants every six months)<br/>1.6 mg/L (urine - t,t-Muconic acid after end of work day, at the end of a work week/end of the shift)</p> |                                                                                                |                                                                                                                                                       | acid end of shift)                                                                                                                                                                       |
| Toluene<br>108-88-3 | - | <p>10 g/dL Hemoglobin (blood - by the first screening and once yearly)<br/>12 g/dL Hemoglobin (blood - by the first screening and once yearly)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 1.6 mmol/mmol Creatinine - urine (Hippuric acid) - at the end of exposure or end of work shift | <p>1.0 mg/L - blood (Toluene) - at the end of the work shift<br/>20 ppm - final exhaled air (Toluene) - during exposure<br/>2.50 g/g Creatinine -</p> | <p>1.6 <math>\mu</math>mol/mmol Creatinine (urine - o-Cresol end of shift)<br/>1000 <math>\mu</math>mol/mmol Creatinine (urine - Hippuric acid end of shift)<br/>1.5 mg/g Creatinine</p> |

|                          |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                       |
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|                          |                | <p>3.2 million/<math>\mu</math>L Erythrocytes (blood - by the first screening and once yearly)</p> <p>3.8 million/<math>\mu</math>L Erythrocytes (blood - by the first screening and once yearly)</p> <p>4000 Leukocytes/<math>\mu</math>L (blood - by the first screening and once yearly)</p> <p>13000 Leukocytes/<math>\mu</math>L (blood - by the first screening and once yearly)</p> <p>130000 Thrombocytes/<math>\mu</math>L (blood - by the first screening and once yearly)</p> <p>150000 Thrombocytes/<math>\mu</math>L (blood - by the first screening and once yearly)</p> <p>0.8 mg/L (urine - o-Cresol after end of work day, at the end of a work week/end of the shift)</p> |                                                                                                                                    | <p>urine (Hippuric acid) - at the end of the work shift</p> <p>1.0 mg/g Creatinine - urine (o-Cresol) - at the end of the work shift</p>                                                                                                                                                                                                                                                                           | <p>(urine - o-Cresol end of shift)</p> <p>1600 mg/g Creatinine (urine - Hippuric acid end of shift)</p>                                               |
| Ethylbenzene<br>100-41-4 | -              | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p>2000 mg/g Creatinine - urine (Mandelic acid and Phenylglyoxylic acid - total) - at the end of exposure or end of work shift</p> | <p>1.50 mg/L - blood (Ethylbenzene) - during exposure</p> <p>1.50 g/g Creatinine - urine (Mandelic acid) - at the end of the work shift and at the end of the working week</p>                                                                                                                                                                                                                                     | <p>1100 <math>\mu</math>mol/mmol Creatinine (urine - Mandelic acid end of shift)</p> <p>1500 mg/g Creatinine (urine - Mandelic acid end of shift)</p> |
| <b>Chemical name</b>     | <b>Denmark</b> | <b>Finland</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>France</b>                                                                                                                      | <b>Germany DFG</b>                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Germany TRGS</b>                                                                                                                                   |
| Benzene<br>71-43-2       | -              | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <p>5 mg/L - urine (Muconic acid) - end of shift</p>                                                                                | <p>0.3 <math>\mu</math>g/g Creatinine - BAR (end of exposure or end of shift) urine</p> <p>150 <math>\mu</math>g/g Creatinine - BAR (end of exposure or end of shift) urine</p> <p>0.3 <math>\mu</math>g/L - BAR (end of exposure or end of shift) urine</p> <p>0.5 <math>\mu</math>g/L - (end of exposure or end of shift) - urine</p> <p>0.8 <math>\mu</math>g/L - (end of exposure or end of shift) - urine</p> | -                                                                                                                                                     |

|                     |   |                                                                 |                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                      |
|---------------------|---|-----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     |   |                                                                 |                                                                                                               | 1.5 µg/L - (end of exposure or end of shift) - urine<br>2.75 µg/L - (end of exposure or end of shift) - urine<br>5.0 µg/L - (end of exposure or end of shift) - urine<br>7.5 µg/L - (end of exposure or end of shift) - urine<br>12.5 µg/L - (end of exposure or end of shift) - urine<br>300 µg/g Creatinine - (end of exposure or end of shift) - urine<br>500 µg/g Creatinine - (end of exposure or end of shift) - urine<br>750 µg/g Creatinine - (end of exposure or end of shift) - urine<br>1200 µg/g Creatinine - (end of exposure or end of shift) - urine<br>1.5 µg/g Creatinine - (end of exposure or end of shift) - urine<br>3 µg/g Creatinine - (end of exposure or end of shift) - urine<br>5 µg/g Creatinine - (end of exposure or end of shift) - urine<br>12 µg/g Creatinine - (end of exposure or end of shift) - urine<br>25 µg/g Creatinine - (end of exposure or end of shift) - urine<br>45 µg/g Creatinine - (end of exposure or end of shift) - urine<br>90 µg/g Creatinine - (end of exposure or end of shift) - urine |                                                                                                                                                                      |
| Toluene<br>108-88-3 | - | 500 nmol/L (blood - Toluene in the morning after a working day) | 1 mg/L - venous blood (Toluene) - end of shift<br>2500 mg/g creatinine - urine (Hippuric acid) - end of shift | 600 µg/L (whole blood - Toluene immediately after exposure)<br>75 µg/L (urine - Toluene end of shift)<br>1.5 mg/L (urine - o-Cresol (after hydrolysis) for long-term                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 600 µg/L (whole blood - Toluene immediately after exposure)<br>75 µg/L (urine - Toluene end of shift)<br>1.5 mg/L (urine - o-Cresol (after hydrolysis) for long-term |

|                        |   |   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                         |
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|                        |   |   |   | exposures: at the end of the shift after several shifts)<br>1.5 mg/L (urine - o-Cresol (after hydrolysis) end of shift)<br>600 µg/L - BAT (immediately after exposure) blood<br>75 µg/L - BAT (end of exposure or end of shift) urine<br>1.5 mg/L - BAT (for long-term exposures: at the end of the shift after several shifts) urine<br>1.5 mg/L - BAT (end of exposure or end of shift) urine                                                                                                                                                                                                                                                                                                                                           | exposures: at the end of the shift after several shifts)<br>1.5 mg/L (urine - o-Cresol (after hydrolysis) end of shift) |
| Naphthalene<br>91-20-3 | - | - | - | 35 µg/L - BAR (end of exposure or end of shift) urine<br>35 µg/L - BAR (for long-term exposures: at the end of the shift after several shifts) urine<br>4000 µg/L - (end of exposure or end of shift) - urine<br>13500 µg/L - (end of exposure or end of shift) - urine<br>23300 µg/L - (end of exposure or end of shift) - urine<br>34200 µg/L - (end of exposure or end of shift) - urine<br>30 µg/L - (end of exposure or end of shift) - urine<br>60 µg/L - (end of exposure or end of shift) - urine<br>175 µg/L - (end of exposure or end of shift) - urine<br>280 µg/L - (end of exposure or end of shift) - urine<br>390 µg/L - (end of exposure or end of shift) - urine<br>220 µg/L - (end of exposure or end of shift) - urine | -                                                                                                                       |



|                          |                                                                                                                                                     |                                                                                                                                                                |                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                    |
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|                          |                                                                                                                                                     |                                                                                                                                                                |                                                                                | 500 µg/L - (end of exposure or end of shift) - urine<br>1500 µg/L - (end of exposure or end of shift) - urine<br>2300 µg/L - (end of exposure or end of shift) - urine<br>3300 µg/L - (end of exposure or end of shift) - urine                                                                                                                                                                                                                                                                         |                                                                                    |
| Ethylbenzene<br>100-41-4 | -                                                                                                                                                   | 5.2 mmol/L (urine - Mandelic acid after the shift after a working week or exposure period)                                                                     | 1500 mg/g creatinine - urine (Mandelic acid) - end of shift at end of workweek | 250 mg/g Creatinine (urine - Mandelic acid plus Phenylglyoxylic acid end of shift)<br>250 mg/g Creatinine - BAT (end of exposure or end of shift) urine<br>130 mg/g Creatinine - (end of exposure or end of shift) - urine<br>250 mg/g Creatinine - (end of exposure or end of shift) - urine<br>330 mg/g Creatinine - (end of exposure or end of shift) - urine<br>670 mg/g Creatinine - (end of exposure or end of shift) - urine<br>1300 mg/g Creatinine - (end of exposure or end of shift) - urine | 250 mg/g Creatinine (urine - Mandelic acid plus Phenylglyoxylic acid end of shift) |
| Chemical name            | Hungary                                                                                                                                             | Ireland                                                                                                                                                        | Italy MDLPS                                                                    | Italy AIDII                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                    |
| Benzene<br>71-43-2       | 0.04 mg/g Creatinine (urine - s-Phenyl mercapturic acid end of shift)<br>0.22 µmol/mmol Creatinine (urine - s-Phenyl mercapturic acid end of shift) | 25 µg/g Creatinine (urine - s-Phenylmercapturic acid end of shift)<br>500 µg/g Creatinine (urine - t,t-Muconic acid end of shift)                              | -                                                                              | 25 µg/g Creatinine - urine (S-Phenylmercapturic acid) - end of shift<br>500 µg/g Creatinine - urine (t,t-Muconic acid) - end of shift                                                                                                                                                                                                                                                                                                                                                                   |                                                                                    |
| Toluene<br>108-88-3      | 1 mg/g Creatinine (urine - o-Cresol end of shift)<br>1 µmol/mmol Creatinine (urine - o-Cresol end of shift)                                         | 0.02 mg/L (blood - Toluene prior to last shift of workweek)<br>0.03 mg/L (urine - Toluene end of shift)<br>0.3 mg/g Creatinine (urine - o-Cresol end of shift) | -                                                                              | 0.3 mg/g Creatinine - urine (o-Cresol (with hydrolysis)) - end of shift<br>0.03 mg/L - urine (Toluene) - end of shift<br>0.02 mg/L - blood (Toluene) - prior to last shift of workweek                                                                                                                                                                                                                                                                                                                  |                                                                                    |
| Naphthalene              | -                                                                                                                                                   | -                                                                                                                                                              | -                                                                              | - () - end of shift                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                    |

|                          |                                                                                                                                                                                                                                                |                                                                                                                                                                         |                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                     |
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| 91-20-3                  |                                                                                                                                                                                                                                                |                                                                                                                                                                         |                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                     |
| Ethylbenzene<br>100-41-4 | 1500 mg/g Creatinine (urine - Mandelic acid at end of workweek, end of shift)<br>1110 µmol/mmol Creatinine (urine - Mandelic acid at end of workweek, end of shift)                                                                            | 0.7 g/g Creatinine (urine - sum of Mandelic acid and Phenylglyoxylic acid end of shift at end of workweek)<br>0.7 g (end-exhaled air - not critical)                    | -                                                                                                                                                                                                                                                                                    | 0.15 g/g Creatinine - urine (Sum of Mandelic acid and Phenylglyoxylic acid) - end of shift at end of workweek                                                                                                                                       |
| Chemical name            | Latvia                                                                                                                                                                                                                                         | Luxembourg                                                                                                                                                              | Romania                                                                                                                                                                                                                                                                              | Slovakia                                                                                                                                                                                                                                            |
| Benzene<br>71-43-2       | 46 µg/g Creatinine - urine (Phenol) - end of shift<br>28 µg/L - blood () - end of shift                                                                                                                                                        | -                                                                                                                                                                       | 25 µg/g Creatinine - urine (S-Phenylmercapturic acid) - end of shift<br>500 µg/g Creatinine - urine (Trans, trans-muconic acid) - end of shift<br>50 mg/L - urine (total Phenols) - end of shift                                                                                     | -                                                                                                                                                                                                                                                   |
| Toluene<br>108-88-3      | 1.6 g/g Creatinine - urine (Hippuric acid) - end of shift<br>0.05 mg/L - blood (Toluene) - end of shift                                                                                                                                        | -                                                                                                                                                                       | 2 g/L - urine (Hippuric acid) - end of shift<br>3 mg/L - urine (o-Cresol) - end of shift                                                                                                                                                                                             | 600 µg/L (blood - Toluene end of exposure or work shift)<br>1.5 mg/L (urine - o-Cresol after all work shifts)<br>1.5 mg/L (urine - o-Cresol end of exposure or work shift)<br>1600 mg/g creatinine ( - Hippuric acid end of exposure or work shift) |
| Ethylbenzene<br>100-41-4 | -                                                                                                                                                                                                                                              | -                                                                                                                                                                       | 1.5 g/g Creatinine - urine (Mandelic acid) - end of work week                                                                                                                                                                                                                        | 12 mg/L (urine - 2 and 4-Ethylphenol end of exposure or work shift)<br>1600 mg/L (urine - Mandelic acid and Phenylglycolic acid end of exposure or work shift)                                                                                      |
| Chemical name            | Slovenia                                                                                                                                                                                                                                       | Spain                                                                                                                                                                   | Switzerland                                                                                                                                                                                                                                                                          | United Kingdom                                                                                                                                                                                                                                      |
| Benzene<br>71-43-2       | 5 µg/L - urine (Benzene) - at the end of the work shift<br>0.025 mg/g Creatinine - urine ((S)-Phenylmercapturic acid) - at the end of the work shift<br>500 µg/g Creatinine - urine (trans, trans-Muconic acid) - at the end of the work shift | 0.045 mg/g Creatinine (urine - S-Phenyl mercapturic acid end of exposure or end of shift)<br>2 mg/L (urine - trans, trans-Muconic acid end of exposure or end of shift) | 25 µg/g creatinine (urine - S-Phenyl-mercapturic acid end of shift)<br>0.01 µmol/mmol creatinine (urine - S-Phenyl-mercapturic acid end of shift)<br>500 µg/g creatinine (urine - t,t-Muconic acid end of shift)<br>0.4 µmol/mmol creatinine (urine - t,t-Muconic acid end of shift) | -                                                                                                                                                                                                                                                   |
| Toluene<br>108-88-3      | 600 µg/L - blood (Toluene) - immediately after exposure<br>1.5 mg/L - urine (o-Cresol (after hydrolysis)) - at the end of the work shift; for long-term exposure: at the end of the work shift after                                           | 0.6 mg/L (urine - o-Cresol end of shift)<br>0.05 mg/L (blood - Toluene start of last shift of workweek)<br>0.08 mg/L (urine - Toluene end of shift)                     | 600 µg/L (whole blood - Toluene end of shift)<br>6.48 µmol/L (whole blood - Toluene end of shift)<br>2 g/g creatinine (urine - Hippuric acid end of shift, and after several shifts (for long-term exposures))                                                                       | -                                                                                                                                                                                                                                                   |

|                          |                                                                                                     |                                                                                       |                                                                                                                                                                                                                                                                                                                                                                |   |
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|                          | several consecutive workdays<br>75 µg/L - urine (Toluene) - at the end of the work shift            |                                                                                       | 1.26 mmol/mmol creatinine (urine - Hippuric acid end of shift, and after several shifts (for long-term exposures))<br>0.5 mg/L (urine - o-Cresol end of shift, and after several shifts (for long-term exposures))<br>4.62 µmol/L (urine - o-Cresol end of shift, and after several shifts (for long-term exposures))<br>75 µg/L (urine - Toluol end of shift) |   |
| Ethylbenzene<br>100-41-4 | 250 mg/g Creatinine - urine (Mandelic acid and Phenylglyoxylic acid) - at the end of the work shift | 700 mg/g Creatinine (urine - Mandelic acid plus Phenylglyoxylic acid end of workweek) | 600 mg/g creatinine (urine - Mandelic acid and Phenylglyoxylacid end of shift)                                                                                                                                                                                                                                                                                 | - |

**Derived No Effect Level (DNEL) - Workers**

| Chemical name                                                                                              | Oral | Dermal                                                | Inhalation                                                                       |
|------------------------------------------------------------------------------------------------------------|------|-------------------------------------------------------|----------------------------------------------------------------------------------|
| Hydrogenated base oil<br>72623-87-1                                                                        | -    | 0.97 mg/kg bw/day [4] [6]                             | 2.73 mg/m³ [4] [6]<br>5.58 mg/m³ [5] [6]                                         |
| Hydrogenated base oil<br>72623-87-1                                                                        | -    | 0.97 mg/kg bw/day [4] [6]                             | 2.73 mg/m³ [4] [6]<br>5.58 mg/m³ [5] [6]                                         |
| Hydrogenated base oil<br>64742-65-0                                                                        | -    | 0.97 mg/kg bw/day [4] [6]                             | 2.73 mg/m³ [4] [6]<br>5.58 mg/m³ [5] [6]                                         |
| bis(nonylphenyl)amine<br>36878-20-3                                                                        | -    | 5 mg/kg bw/day [4] [6]                                | -                                                                                |
| Phosphorodithioic acid, mixed<br>O,O-bis(1,3-dimethylbutyl and iso-Pr)<br>esters, zinc salts<br>84605-29-8 | -    | 12.1 mg/kg bw/day [4] [6]                             | 8.31 mg/m³ [4] [6]                                                               |
| Hydrogenated base oil<br>64742-54-7                                                                        | -    | 0.97 mg/kg bw/day [4] [6]                             | 2.73 mg/m³ [4] [6]<br>5.58 mg/m³ [5] [6]                                         |
| Phenol, dodecyl-, branched<br>121158-58-5                                                                  | -    | 0.25 mg/kg bw/day [4] [6]<br>166 mg/kg bw/day [4] [7] | 44.18 mg/m³ [4] [7]                                                              |
| 2-methylpropan-1-ol<br>78-83-1                                                                             | -    | -                                                     | 310 mg/m³ [5] [6]                                                                |
| Nonane<br>111-84-2                                                                                         | -    | 773 mg/kg bw/day [4] [6]                              | 2035 mg/m³ [4] [6]                                                               |
| Hydrogen sulphide<br>7783-06-4                                                                             | -    | -                                                     | 7 mg/m³ [4] [6]<br>14 mg/m³ [4] [7]<br>7 mg/m³ [5] [6]<br>14 mg/m³ [5] [7]       |
| Ethylbenzene<br>100-41-4                                                                                   | -    | 180 mg/kg bw/day [4] [6]                              | 77 mg/m³ [4] [6]<br>293 mg/m³ [5] [7]                                            |
| Toluene<br>108-88-3                                                                                        | -    | 384 mg/kg bw/day [4] [6]                              | 192 mg/m³ [4] [6]<br>384 mg/m³ [4] [7]<br>192 mg/m³ [5] [6]<br>384 mg/m³ [5] [7] |
| Naphthalene<br>91-20-3                                                                                     | -    | 3.57 mg/kg bw/day [4] [6]                             | 25 mg/m³ [4] [6]<br>25 mg/m³ [5] [6]                                             |

**Notes**

|     |                          |
|-----|--------------------------|
| [4] | Systemic health effects. |
| [5] | Local health effects.    |
| [6] | Long term.               |
| [7] | Short term.              |

**Derived No Effect Level (DNEL) - General Public**

| Chemical name                                                                                              | Oral                                                    | Dermal                                             | Inhalation                                                                                                                         |
|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Hydrogenated base oil<br>72623-87-1                                                                        | 0.74 mg/kg bw/day [4] [6]                               | -                                                  | 1.19 mg/m <sup>3</sup> [5] [6]                                                                                                     |
| Hydrogenated base oil<br>72623-87-1                                                                        | 0.74 mg/kg bw/day [4] [6]                               | -                                                  | 1.19 mg/m <sup>3</sup> [5] [6]                                                                                                     |
| Hydrogenated base oil<br>64742-65-0                                                                        | 0.74 mg/kg bw/day [4] [6]                               | -                                                  | 1.19 mg/m <sup>3</sup> [5] [6]                                                                                                     |
| bis(nonylphenyl)amine<br>36878-20-3                                                                        | 0.25 mg/kg bw/day [4] [6]                               | -                                                  | -                                                                                                                                  |
| Phosphorodithioic acid, mixed<br>O,O-bis(1,3-dimethylbutyl and iso-Pr)<br>esters, zinc salts<br>84605-29-8 | 0.24 mg/kg bw/day [4] [6]                               | -                                                  | 2.11 mg/m <sup>3</sup> [4] [6]                                                                                                     |
| Hydrogenated base oil<br>64742-54-7                                                                        | 0.74 mg/kg bw/day [4] [6]                               | -                                                  | 1.19 mg/m <sup>3</sup> [5] [6]                                                                                                     |
| Phenol, dodecyl-, branched<br>121158-58-5                                                                  | 0.075 mg/kg bw/day [4] [6]<br>1.26 mg/kg bw/day [4] [7] | 50 mg/kg bw/day [4] [6]<br>50 mg/kg bw/day [4] [7] | 0.79 mg/m <sup>3</sup> [4] [6]<br>13.26 mg/m <sup>3</sup> [4] [7]                                                                  |
| 2-methylpropan-1-ol<br>78-83-1                                                                             | -                                                       | -                                                  | 55 mg/m <sup>3</sup> [5] [6]                                                                                                       |
| Nonane<br>111-84-2                                                                                         | 699 mg/kg bw/day [4] [6]                                | -                                                  | 608 mg/m <sup>3</sup> [4] [6]                                                                                                      |
| Ethylbenzene<br>100-41-4                                                                                   | 1.6 mg/kg bw/day [4] [6]                                | -                                                  | 15 mg/m <sup>3</sup> [4] [6]                                                                                                       |
| Toluene<br>108-88-3                                                                                        | 8.13 mg/kg bw/day [4] [6]                               | -                                                  | 56.5 mg/m <sup>3</sup> [4] [6]<br>226 mg/m <sup>3</sup> [4] [7]<br>56.5 mg/m <sup>3</sup> [5] [6]<br>226 mg/m <sup>3</sup> [5] [7] |

**Notes**

|     |                          |
|-----|--------------------------|
| [4] | Systemic health effects. |
| [5] | Local health effects.    |
| [6] | Long term.               |
| [7] | Short term.              |

**Predicted No Effect Concentration (PNEC)**

| Chemical name                                                                                                 | Freshwater | Freshwater<br>(intermittent release) | Marine water | Marine water<br>(intermittent release) | Air |
|---------------------------------------------------------------------------------------------------------------|------------|--------------------------------------|--------------|----------------------------------------|-----|
| bis(nonylphenyl)amine<br>36878-20-3                                                                           | 0.412 mg/L | 1 mg/L                               | 0.0412 mg/L  | -                                      | -   |
| Phosphorodithioic acid, mixed<br>O,O-bis(1,3-dimethylbutyl<br>and iso-Pr) esters, zinc<br>salts<br>84605-29-8 | 4 µg/L     | 45 µg/L                              | 4.6 µg/L     | -                                      | -   |
| Phenol, dodecyl-, branched<br>121158-58-5                                                                     | 0.074 µg/L | 0.37 µg/L                            | 0.0074 µg/L  | -                                      | -   |
| 2-methylpropan-1-ol                                                                                           | 0.4 mg/L   | 11 mg/L                              | 0.04 mg/L    | -                                      | -   |

| Chemical name                  | Freshwater | Freshwater (intermittent release) | Marine water | Marine water (intermittent release) | Air |
|--------------------------------|------------|-----------------------------------|--------------|-------------------------------------|-----|
| 78-83-1                        |            |                                   |              |                                     |     |
| Nonane<br>111-84-2             | 3.6 µg/L   | 14 µg/L                           | 3.6 µg/L     | -                                   | -   |
| Hydrogen sulphide<br>7783-06-4 | 0.05 µg/L  | 0.5 µg/L                          | 14.9 µg/L    | -                                   | -   |
| Toluene<br>108-88-3            | 0.68 mg/L  | 0.68 mg/L                         | 0.68 mg/L    | -                                   | -   |
| Naphthalene<br>91-20-3         | 2.4 µg/L   | 20 µg/L                           | 2.4 µg/L     | -                                   | -   |

| Chemical name                                                                                           | Freshwater sediment       | Marine sediment            | Sewage treatment | Soil                  | Food chain       |
|---------------------------------------------------------------------------------------------------------|---------------------------|----------------------------|------------------|-----------------------|------------------|
| Hydrogenated base oil<br>72623-87-1                                                                     | -                         | -                          | -                | -                     | 9.33 mg/kg food  |
| Hydrogenated base oil<br>72623-87-1                                                                     | -                         | -                          | -                | -                     | 9.33 mg/kg food  |
| Hydrogenated base oil<br>64742-65-0                                                                     | -                         | -                          | -                | -                     | 9.33 mg/kg food  |
| bis(nonylphenyl)amine<br>36878-20-3                                                                     | 1 mg/kg sediment dw       | 0.1 mg/kg sediment dw      | -                | -                     | -                |
| Phosphorodithioic acid, mixed<br>O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts<br>84605-29-8 | 0.02203 mg/kg sediment dw | 0.002203 mg/kg sediment dw | 100 mg/L         | 0.00206 mg/kg soil dw | 10.67 mg/kg food |
| Hydrogenated base oil<br>64742-54-7                                                                     | -                         | -                          | -                | -                     | 9.33 mg/kg food  |
| Phenol, dodecyl-, branched<br>121158-58-5                                                               | 0.226 mg/kg sediment dw   | 0.0266 mg/kg sediment dw   | 100 mg/L         | 0.118 mg/kg soil dw   | 4 mg/kg food     |
| 2-methylpropan-1-ol<br>78-83-1                                                                          | 1.56 mg/kg sediment dw    | 0.156 mg/kg sediment dw    | 10 mg/L          | 0.0765 mg/kg soil dw  | -                |
| Nonane<br>111-84-2                                                                                      | 0.62 mg/kg sediment dw    | 0.62 mg/kg sediment dw     | 54 µg/L          | 0.25 mg/kg soil dw    | -                |
| Hydrogen sulphide<br>7783-06-4                                                                          | -                         | -                          | 1.33 mg/L        | -                     | -                |
| Toluene<br>108-88-3                                                                                     | 16.39 mg/kg sediment dw   | 16.39 mg/kg sediment dw    | 13.61 mg/L       | 2.89 mg/kg soil dw    | -                |
| Naphthalene<br>91-20-3                                                                                  | 67.2 µg/kg sediment dw    | 67.2 µg/kg sediment dw     | 2.9 mg/L         | 53.3 µg/kg soil dw    | -                |

## 8.2. Exposure controls

### Engineering controls

Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas.

### Personal protective equipment

#### Eye/face protection

If there is a risk of contact: Wear safety glasses with side shields (or goggles). Eye protection must conform to standard EN 166.

#### Hand protection

If there is a risk of contact: Wear suitable gloves. Gloves must conform to standard EN 374.

Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves.

|                                        |                                                                                                                                                                                                 |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Skin and body protection</b>        | If there is a risk of contact: Wear suitable protective clothing (EN ISO 6529).                                                                                                                 |
| <b>Respiratory protection</b>          | No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.                        |
| <b>General hygiene considerations</b>  | Handle in accordance with good industrial hygiene and safety practice. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. |
| <b>Environmental exposure controls</b> | Avoid release to the environment. Local authorities should be advised if significant spillages cannot be contained.                                                                             |

## SECTION 9: Physical and chemical properties

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

|                                                |                                   |                              |
|------------------------------------------------|-----------------------------------|------------------------------|
| <b>Appearance</b>                              |                                   |                              |
| <b>Physical state</b>                          | Liquid                            |                              |
| <b>Colour</b>                                  | brown                             |                              |
| <b>Odour</b>                                   | mild Hydrocarbon-like             |                              |
| <b>Odour threshold</b>                         | No information available          |                              |
| <b>Property</b>                                | <b>Values</b>                     | <b>Remarks • Method</b>      |
| <b>Melting point / freezing point</b>          |                                   | No data available            |
| <b>Initial boiling point and boiling range</b> |                                   | No data available            |
| <b>Flammability</b>                            |                                   | No data available            |
| <b>Flammability Limit in Air</b>               |                                   |                              |
| Upper flammability or explosive limits         |                                   | No data available            |
| Lower flammability or explosive limits         |                                   | No data available            |
| <b>Flash point</b>                             | 226 °C                            | Cleveland Open Cup ASTM D 92 |
| <b>Autoignition temperature</b>                |                                   | No data available            |
| <b>Decomposition temperature</b>               |                                   | No data available            |
| <b>pH</b>                                      |                                   | No data available            |
| pH (as aqueous solution)                       |                                   | No data available            |
| <b>Kinematic viscosity</b>                     | 95.9 cSt @40°C<br>14.6 cSt @100°C | ASTM D445                    |
| Dynamic viscosity                              |                                   | No data available            |
| <b>Water solubility</b>                        |                                   | No data available            |
| <b>Solubility(ies)</b>                         |                                   |                              |
| <b>Partition coefficient</b>                   |                                   | No data available            |
| <b>Vapour pressure</b>                         |                                   |                              |
| <b>Relative density</b>                        | 0.8586                            |                              |
| Bulk density                                   |                                   | No data available            |
| Liquid Density                                 |                                   | No data available            |
| <b>Vapour density</b>                          |                                   | No data available            |
| <b>Particle characteristics</b>                |                                   |                              |
| Particle Size                                  |                                   | No data available            |
| Particle Size Distribution                     |                                   | No data available            |

### 9.2. Other information

**Pour Point** -42°C [ASTM D 97]

#### 9.2.1. Information with regards to physical hazard classes

Not applicable

### 9.2.2. Other safety characteristics

No information available

**Fire Point** 240°C (COC) [ASTM D 92]

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

**Reactivity** None under normal use conditions.

### 10.2. Chemical stability

**Stability** Stable under normal conditions.

### Explosion data

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** None.

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** None under normal processing.

### 10.4. Conditions to avoid

**Conditions to avoid** None known based on information supplied.

### 10.5. Incompatible materials

**Incompatible materials** None known based on information supplied.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Thermal decomposition can lead to release of irritating gases and vapours. Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

## SECTION 11: Toxicological information

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

#### Information on likely routes of exposure

#### Product Information

**Inhalation** Specific test data for the substance or mixture is not available.

**Eye contact** Specific test data for the substance or mixture is not available.

**Skin contact** Specific test data for the substance or mixture is not available. Causes mild skin irritation.

**Ingestion** Specific test data for the substance or mixture is not available.

#### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** May cause temporary eye irritation. Prolonged contact may cause redness and irritation.

#### Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document:

ATEmix (oral) 187,311.20 mg/kg  
ATEmix (dermal) 3,600.70 mg/kg

#### Component Information

| Chemical name                                                                                              | Oral LD50                                    | Dermal LD50              | Inhalation LC50                      |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------|--------------------------------------|
| Hydrogenated base oil<br>72623-87-1                                                                        | > 5000 mg/kg ( Rat )                         | > 2000 mg/kg ( Rabbit )  | = 2.18 mg/L ( Rat ) 4 h              |
| Hydrogenated base oil<br>72623-87-1                                                                        | > 5000 mg/kg ( Rat )                         | > 2000 mg/kg ( Rabbit )  | = 2.18 mg/L ( Rat ) 4 h              |
| Hydrogenated base oil<br>64742-65-0                                                                        | > 15000 mg/kg ( Rat )                        | > 5000 mg/kg ( Rabbit )  | > 2400 mg/m <sup>3</sup> ( Rat ) 4 h |
| bis(nonylphenyl)amine<br>36878-20-3                                                                        | > 5000 mg/kg ( Rat )                         | > 2000 mg/kg ( Rat )     | -                                    |
| Phosphorodithioic acid, mixed<br>O,O-bis(1,3-dimethylbutyl and iso-Pr)<br>esters, zinc salts<br>84605-29-8 | = 3100 mg/kg ( Rat )<br>= 3200 mg/kg ( Rat ) | > 2000 mg/kg ( Rabbit )  | > 2.3 mg/L ( Rat ) 4 h               |
| Hydrogenated base oil<br>64742-54-7                                                                        | > 15 g/kg ( Rat )                            | > 5000 mg/kg ( Rabbit )  | -                                    |
| Phenol, dodecyl-, branched<br>121158-58-5                                                                  | -                                            | = 15000 mg/kg ( Rabbit ) | -                                    |
| Diphenylamine<br>122-39-4                                                                                  | = 1120 mg/kg ( Rat )                         | > 2000 mg/kg ( Rabbit )  | -                                    |
| 2-methylpropan-1-ol<br>78-83-1                                                                             | = 2460 mg/kg ( Rat )                         | = 3400 mg/kg ( Rabbit )  | > 18.18 mg/L ( Rat ) 6 h             |
| Nonane<br>111-84-2                                                                                         | -                                            | -                        | = 3200 ppm ( Rat ) 4 h               |
| Hydrogen sulphide<br>7783-06-4                                                                             | -                                            | -                        | = 501 ppm ( Rat ) 4 h                |
| Benzene<br>71-43-2                                                                                         | > 2000 mg/kg ( Rat )                         | > 8200 mg/kg ( Rabbit )  | = 44.66 mg/L ( Rat ) 4 h             |
| Toluene<br>108-88-3                                                                                        | = 2600 mg/kg ( Rat )                         | = 12000 mg/kg ( Rabbit ) | = 12.5 mg/L ( Rat ) 4 h              |
| Naphthalene<br>91-20-3                                                                                     | = 1110 mg/kg ( Rat )                         | = 1120 mg/kg ( Rabbit )  | > 0.4 mg/L ( Rat ) 4 h               |
| Ethylbenzene<br>100-41-4                                                                                   | = 3500 mg/kg ( Rat )                         | = 15400 mg/kg ( Rabbit ) | = 17.4 mg/L ( Rat ) 4 h              |

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Skin corrosion/irritation** Classification based on data available for ingredients. Causes mild skin irritation.

| Component Information                                                                               |                                                      |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------|
| Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts (84605-29-8) |                                                      |
| Method                                                                                              | OECD Test No. 404: Acute Dermal Irritation/Corrosion |
| Species                                                                                             | Rabbit                                               |
| Exposure route                                                                                      | Dermal                                               |
| Effective dose                                                                                      | 0.5 mL                                               |
| Exposure time                                                                                       | 4 hours                                              |
| Results                                                                                             | Irritant                                             |

| Hydrogenated base oil (64742-54-7) |                                                      |
|------------------------------------|------------------------------------------------------|
| Method                             | OECD Test No. 404: Acute Dermal Irritation/Corrosion |
| Species                            | Rabbit                                               |
| Exposure route                     | Dermal                                               |



|                |              |
|----------------|--------------|
| Effective dose | 0.5 mL       |
| Exposure time  | 24 hours     |
| Results        | non-irritant |

**Serious eye damage/eye irritation** No information available.

| Component Information                                                                               |            |
|-----------------------------------------------------------------------------------------------------|------------|
| Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts (84605-29-8) |            |
| Species                                                                                             | Rabbit     |
| Exposure route                                                                                      | Eye        |
| Effective dose                                                                                      | 0.1 mL     |
| Results                                                                                             | Eye Damage |

| Hydrogenated base oil (64742-54-7) |              |
|------------------------------------|--------------|
| Species                            | Rabbit       |
| Exposure route                     | Eye          |
| Effective dose                     | 0.1 mL       |
| Exposure time                      | 72 hours     |
| Results                            | non-irritant |

**Respiratory or skin sensitisation** No information available.

| Component Information              |                                                               |
|------------------------------------|---------------------------------------------------------------|
| Hydrogenated base oil (64742-54-7) |                                                               |
| Method                             | OECD Test No. 429: Skin Sensitisation: Local Lymph Node Assay |
| Species                            | Guinea pig                                                    |
| Exposure route                     | Dermal                                                        |
| Results                            | Not a skin sensitiser                                         |

**Germ cell mutagenicity** No information available.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

| Chemical name | European Union |
|---------------|----------------|
| Benzene       | Muta. 1B       |

**Carcinogenicity** The supplier declares that it can be shown that the substance(s) contain less than 3% DMSO extract as measured by IP 346.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Chemical name         | European Union |
|-----------------------|----------------|
| Hydrogenated base oil | Carc. 1B       |
| Hydrogenated base oil | Carc. 1B       |
| Hydrogenated base oil | Carc. 1B       |
| Hydrogenated base oil | Carc. 1B       |
| Benzene               | Carc. 1A       |
| Naphthalene           | Carc. 2        |

**Reproductive toxicity** No information available.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

| Chemical name              | European Union |
|----------------------------|----------------|
| Phenol, dodecyl-, branched | Repr. 1B       |
| Toluene                    | Repr. 2        |

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

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

## 11.2. Information on other hazards

### 11.2.1. Endocrine disrupting properties

**Endocrine disrupting properties** No information available.

### 11.2.2. Other information

**Other adverse effects** No information available.

## SECTION 12: Ecological information

### 12.1. Toxicity

**Ecotoxicity** Harmful to aquatic life with long lasting effects.

**Unknown aquatic toxicity** Contains 0 % of components with unknown hazards to the aquatic environment.

| Chemical name                                                                                        | Algae/aquatic plants                          | Fish                                                                                                                                                                                                  | Toxicity to microorganisms | Crustacea                                                                          |
|------------------------------------------------------------------------------------------------------|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------|
| Hydrogenated base oil<br>72623-87-1                                                                  | -                                             | LC50: >5000mg/L (96h, Oncorhynchus mykiss)                                                                                                                                                            | -                          | EC50: >1000mg/L (48h, Daphnia magna)                                               |
| Hydrogenated base oil<br>72623-87-1                                                                  | -                                             | LC50: >5000mg/L (96h, Oncorhynchus mykiss)                                                                                                                                                            | -                          | EC50: >1000mg/L (48h, Daphnia magna)                                               |
| Hydrogenated base oil<br>64742-65-0                                                                  | -                                             | LC50: >5000mg/L (96h, Oncorhynchus mykiss)                                                                                                                                                            | -                          | EC50: >1000mg/L (48h, Daphnia magna)                                               |
| bis(nonylphenyl)amine<br>36878-20-3                                                                  | -                                             | LC50: >1000mg/L (96h, Pimephales promelas)                                                                                                                                                            | -                          | -                                                                                  |
| Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts<br>84605-29-8 | -                                             | LC50: =4.5mg/L (96h, Oncorhynchus mykiss)                                                                                                                                                             | -                          | EC50: =23mg/L (48h, Daphnia magna)                                                 |
| Hydrogenated base oil<br>64742-54-7                                                                  | -                                             | LC50: >5000mg/L (96h, Oncorhynchus mykiss)                                                                                                                                                            | -                          | EC50: >1000mg/L (48h, Daphnia magna)                                               |
| Diphenylamine<br>122-39-4                                                                            | EC50: =1.5mg/L (72h, Scenedesmus subspicatus) | LC50: 3.47 - 4.14mg/L (96h, Pimephales promelas)                                                                                                                                                      | -                          | EC50: 1.69 - 2.46mg/L (48h, Daphnia magna)                                         |
| 2-methylpropan-1-ol<br>78-83-1                                                                       | -                                             | LC50: =375mg/L (96h, Pimephales promelas)<br>LC50: 1370 - 1670mg/L (96h, Pimephales promelas)<br>LC50: 1480 - 1730mg/L (96h, Lepomis macrochirus)<br>LC50: 1120 - 1520mg/L (96h, Oncorhynchus mykiss) | -                          | EC50: =1300mg/L (48h, Daphnia magna)<br>EC50: 1070 - 1933mg/L (48h, Daphnia magna) |
| Hydrogen sulphide                                                                                    | -                                             | LC50: =0.0448mg/L                                                                                                                                                                                     | -                          | -                                                                                  |

|                          |                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |   |                                                                                                    |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------------------------------------------------------------------------------------|
| 7783-06-4                |                                                                                                                                 | (96h, <i>Lepomis macrochirus</i> )<br>LC50: =0.016mg/L (96h, <i>Pimephales promelas</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                      |   |                                                                                                    |
| Benzene<br>71-43-2       | EC50: =29mg/L (72h, <i>Pseudokirchneriella subcapitata</i> )                                                                    | LC50: =22.49mg/L (96h, <i>Lepomis macrochirus</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | - | EC50: =10mg/L (48h, <i>Daphnia magna</i> )                                                         |
| Toluene<br>108-88-3      | EC50: >433mg/L (96h, <i>Pseudokirchneriella subcapitata</i> )<br>EC50: =12.5mg/L (72h, <i>Pseudokirchneriella subcapitata</i> ) | LC50: 15.22 - 19.05mg/L (96h, <i>Pimephales promelas</i> )<br>LC50: =12.6mg/L (96h, <i>Pimephales promelas</i> )<br>LC50: 5.89 - 7.81mg/L (96h, <i>Oncorhynchus mykiss</i> )<br>LC50: 14.1 - 17.16mg/L (96h, <i>Oncorhynchus mykiss</i> )<br>LC50: =5.8mg/L (96h, <i>Oncorhynchus mykiss</i> )<br>LC50: 11.0 - 15.0mg/L (96h, <i>Lepomis macrochirus</i> )<br>LC50: =54mg/L (96h, <i>Oryzias latipes</i> )<br>LC50: =28.2mg/L (96h, <i>Poecilia reticulata</i> )<br>LC50: 50.87 - 70.34mg/L (96h, <i>Poecilia reticulata</i> ) | - | EC50: 5.46 - 9.83mg/L (48h, <i>Daphnia magna</i> )<br>EC50: =11.5mg/L (48h, <i>Daphnia magna</i> ) |
| Naphthalene<br>91-20-3   | -                                                                                                                               | LC50: 0.91 - 2.82mg/L (96h, <i>Oncorhynchus mykiss</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | - | EC50: 1.09 - 3.4mg/L (48h, <i>Daphnia magna</i> )                                                  |
| Ethylbenzene<br>100-41-4 | EC50: >438mg/L (96h, <i>Pseudokirchneriella subcapitata</i> )                                                                   | LC50: 11.0 - 18.0mg/L (96h, <i>Oncorhynchus mykiss</i> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | - | EC50: 1.8 - 2.4mg/L (48h, <i>Daphnia magna</i> )                                                   |

## 12.2. Persistence and degradability

Persistence and degradability No information available.

## 12.3. Bioaccumulative potential

### Bioaccumulation

#### Component Information

| Chemical name                                                                          | Partition coefficient |
|----------------------------------------------------------------------------------------|-----------------------|
| Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts | 0.56                  |
| Phenol, dodecyl-, branched                                                             | 7.14                  |
| Diphenylamine                                                                          | 3.4                   |
| 2-methylpropan-1-ol                                                                    | 1                     |
| Hydrogen sulphide                                                                      | 0.45                  |
| Benzene                                                                                | 2.13                  |
| Toluene                                                                                | 2.73                  |
| Naphthalene                                                                            | 3.4                   |
| Ethylbenzene                                                                           | 3.6                   |

## 12.4. Mobility in soil

**Mobility in soil** No information available.

#### 12.5. Results of PBT and vPvB assessment

**PBT and vPvB assessment** No information available.

| Chemical name                                                                                        | PBT and vPvB assessment         |
|------------------------------------------------------------------------------------------------------|---------------------------------|
| Hydrogenated base oil<br>72623-87-1                                                                  | The substance is not PBT / vPvB |
| Hydrogenated base oil<br>72623-87-1                                                                  | The substance is not PBT / vPvB |
| Hydrogenated base oil<br>64742-65-0                                                                  | The substance is not PBT / vPvB |
| Phosphorodithioic acid, mixed O,O-bis(1,3-dimethylbutyl and iso-Pr) esters, zinc salts<br>84605-29-8 | The substance is not PBT / vPvB |
| Hydrogenated base oil<br>64742-54-7                                                                  | The substance is not PBT / vPvB |
| Phenol, dodecyl-, branched<br>121158-58-5                                                            | The substance is not PBT / vPvB |
| 2-methylpropan-1-ol<br>78-83-1                                                                       | The substance is not PBT / vPvB |
| Nonane<br>111-84-2                                                                                   | The substance is not PBT / vPvB |
| Hydrogen sulphide<br>7783-06-4                                                                       | PBT assessment does not apply   |
| Benzene<br>71-43-2                                                                                   | The substance is not PBT / vPvB |
| Toluene<br>108-88-3                                                                                  | The substance is not PBT / vPvB |
| Naphthalene<br>91-20-3                                                                               | The substance is not PBT / vPvB |
| Ethylbenzene<br>100-41-4                                                                             | The substance is not PBT / vPvB |

#### 12.6. Endocrine disrupting properties

**Endocrine disrupting properties** This product does not contain any known or suspected endocrine disruptors.

#### 12.7. Other adverse effects

**Other adverse effects** No information available.

### **SECTION 13: Disposal considerations**

#### 13.1. Waste treatment methods

**Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Do not reuse empty containers.

**Waste codes / waste designations according to EWC / AVV** According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

**SECTION 14: Transport information**

|                                                                     |                          |
|---------------------------------------------------------------------|--------------------------|
| <b>IMDG</b>                                                         | Not regulated            |
| <b>14.1 UN number or ID number</b>                                  | Not regulated            |
| <b>14.2 UN proper shipping name</b>                                 | Not regulated            |
| <b>14.3 Transport hazard class(es)</b>                              | Not regulated            |
| <b>14.4 Packing group</b>                                           | Not regulated            |
| <b>14.5 Environmental hazards</b>                                   | Not applicable           |
| <b>14.6 Special Precautions for Users</b>                           |                          |
| Special Provisions                                                  | None                     |
| <b>14.7 Maritime transport in bulk according to IMO instruments</b> | No information available |

|                                           |                |
|-------------------------------------------|----------------|
| <b>RID</b>                                | Not regulated  |
| <b>14.1 UN number</b>                     | Not regulated  |
| <b>14.2 UN proper shipping name</b>       | Not regulated  |
| <b>14.3 Transport hazard class(es)</b>    | Not regulated  |
| <b>14.4 Packing group</b>                 | Not regulated  |
| <b>14.5 Environmental hazards</b>         | Not applicable |
| <b>14.6 Special Precautions for Users</b> |                |
| Special Provisions                        | None           |

|                                           |                |
|-------------------------------------------|----------------|
| <b>ADR</b>                                | Not regulated  |
| <b>14.1 UN number or ID number</b>        | Not regulated  |
| <b>14.2 UN proper shipping name</b>       | Not regulated  |
| <b>14.3 Transport hazard class(es)</b>    | Not regulated  |
| <b>14.4 Packing group</b>                 | Not regulated  |
| <b>14.5 Environmental hazards</b>         | Not applicable |
| <b>14.6 Special Precautions for Users</b> |                |
| Special Provisions                        | None           |

|                                           |                |
|-------------------------------------------|----------------|
| <b>IATA</b>                               | Not regulated  |
| <b>14.1 UN number or ID number</b>        | Not regulated  |
| <b>14.2 UN proper shipping name</b>       | Not regulated  |
| <b>14.3 Transport hazard class(es)</b>    | Not regulated  |
| <b>14.4 Packing group</b>                 | Not regulated  |
| <b>14.5 Environmental hazards</b>         | Not applicable |
| <b>14.6 Special Precautions for Users</b> |                |
| Special Provisions                        | None           |
| Note:                                     | None           |

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****France****Occupational Illnesses (R-463-3, France)**

| Chemical name                  | French RG number     |
|--------------------------------|----------------------|
| Diphenylamine<br>122-39-4      | RG 15, RG 15bis      |
| 2-methylpropan-1-ol<br>78-83-1 | RG 84                |
| Nonane<br>111-84-2             | RG 84                |
| Benzene                        | RG 4, RG 4bis, RG 84 |

|                          |                |
|--------------------------|----------------|
| 71-43-2                  |                |
| Toluene<br>108-88-3      | RG 4bis, RG 84 |
| Ethylbenzene<br>100-41-4 | RG 84          |

**Germany**

**Water hazard class (WGK)** strongly hazardous to water (WGK 3)

**Netherlands**

| Chemical name              | Netherlands - List of Carcinogens | Netherlands - List of Mutagens | Netherlands - List of Reproductive Toxins |
|----------------------------|-----------------------------------|--------------------------------|-------------------------------------------|
| Phenol, dodecyl-, branched | -                                 | -                              | Fertility Category 1B                     |
| Benzene                    | Present                           | Present                        | -                                         |
| Toluene                    | -                                 | -                              | Development Category 2                    |

**European Union**

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

**Authorisations and/or restrictions on use:**

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

| Chemical name                            | Restricted substance per REACH Annex XVII | Substance subject to authorisation per REACH Annex XIV |
|------------------------------------------|-------------------------------------------|--------------------------------------------------------|
| Hydrogenated base oil - 72623-87-1       | 28.<br>75.                                | -                                                      |
| Hydrogenated base oil - 72623-87-1       | 28.<br>75.                                | -                                                      |
| Hydrogenated base oil - 64742-65-0       | 28.<br>75.                                | -                                                      |
| Hydrogenated base oil - 64742-54-7       | 28.<br>75.                                | -                                                      |
| Phenol, dodecyl-, branched - 121158-58-5 | 30.<br>75.                                | -                                                      |
| Diphenylamine - 122-39-4                 | 75.                                       | -                                                      |
| 2-methylpropan-1-ol - 78-83-1            | 75.                                       | -                                                      |
| Benzene - 71-43-2                        | 72.<br>5.<br>28.<br>29.<br>75.            | -                                                      |
| Toluene - 108-88-3                       | 48.<br>75.                                | -                                                      |
| Naphthalene - 91-20-3                    | 75.                                       | -                                                      |

**Persistent Organic Pollutants**

Not applicable

**Export Notification requirements**

This product contains substances which are regulated pursuant to Regulation (EC) No. 649/2012 of the European parliament and of the council concerning the export and import of dangerous chemicals

| Chemical name | European Export/Import Restrictions per (EC) 689/2008 - Annex Number |
|---------------|----------------------------------------------------------------------|
|---------------|----------------------------------------------------------------------|

|                          |            |
|--------------------------|------------|
| Diphenylamine - 122-39-4 | I.1<br>I.2 |
| Benzene - 71-43-2        | I.1        |

**Named dangerous substances per Seveso Directive (2012/18/EU)**

| Chemical name                 | Lower-tier requirements (tons) | Upper-tier requirements (tons) |
|-------------------------------|--------------------------------|--------------------------------|
| Hydrogen sulphide - 7783-06-4 | 5                              | 20                             |

**Ozone-depleting substances (ODS) regulation (EC) 1005/2009**

Not applicable

**EU - Water Framework Directive (2000/60/EC)**

| Chemical name         | EU - Water Framework Directive (2000/60/EC) |
|-----------------------|---------------------------------------------|
| Benzene - 71-43-2     | Priority substance                          |
| Naphthalene - 91-20-3 | Priority substance                          |

**EU - Environmental Quality Standards (2008/105/EC)**

| Chemical name         | EU - Environmental Quality Standards (2008/105/EC) |
|-----------------------|----------------------------------------------------|
| Benzene - 71-43-2     | Priority substance                                 |
| Naphthalene - 91-20-3 | Priority substance                                 |

**International Inventories**

Contact supplier for inventory compliance status

**TSCA** All components are listed on the TSCA Inventory**DSL/NDSL** All components are listed either on the DSL or NDSL**TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory**15.2. Chemical safety assessment****Chemical Safety Report** No information available**SECTION 16: Other information****Key or legend to abbreviations and acronyms used in the safety data sheet****Full text of H-Statements referred to under section 3**

H220 - Extremely flammable gas  
 H225 - Highly flammable liquid and vapour  
 H226 - Flammable liquid and vapour  
 H301 - Toxic if swallowed  
 H302 - Harmful if swallowed  
 H304 - May be fatal if swallowed and enters airways  
 H311 - Toxic in contact with skin  
 H314 - Causes severe skin burns and eye damage  
 H315 - Causes skin irritation  
 H318 - Causes serious eye damage  
 H319 - Causes serious eye irritation  
 H330 - Fatal if inhaled  
 H331 - Toxic if inhaled  
 H332 - Harmful if inhaled  
 H335 - May cause respiratory irritation  
 H336 - May cause drowsiness or dizziness  
 H340 - May cause genetic defects  
 H350 - May cause cancer  
 H351 - Suspected of causing cancer

H360F - May damage fertility  
H361d - Suspected of damaging the unborn child  
H372 - Causes damage to organs through prolonged or repeated exposure  
H373 - May cause damage to organs through prolonged or repeated exposure  
H400 - Very toxic to aquatic life  
H410 - Very toxic to aquatic life with long lasting effects  
H411 - Toxic to aquatic life with long lasting effects  
H413 - May cause long lasting harmful effects to aquatic life

#### Legend

ATE: Acute Toxicity Estimate  
SVHC: Substances of Very High Concern for Authorisation:  
PBT: Persistent, Bioaccumulative, and Toxic (PBT) Chemicals  
vPvB: Very Persistent and very Bioaccumulative (vPvB) Chemicals

#### Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA TWA (time-weighted average) STEL STEL (Short Term Exposure Limit)  
Ceiling Maximum limit value \* Skin designation

| Classification procedure                                        |                    |
|-----------------------------------------------------------------|--------------------|
| Classification according to Regulation (EC) No. 1272/2008 [CLP] | Method Used        |
| Acute oral toxicity                                             | Calculation method |
| Acute dermal toxicity                                           | Calculation method |
| Acute inhalation toxicity - gas                                 | Calculation method |
| Acute inhalation toxicity - vapour                              | Calculation method |
| Acute inhalation toxicity - dust/mist                           | Calculation method |
| Skin corrosion/irritation                                       | Calculation method |
| Serious eye damage/eye irritation                               | Calculation method |
| Respiratory sensitisation                                       | Calculation method |
| Skin sensitisation                                              | Calculation method |
| Mutagenicity                                                    | Calculation method |
| Carcinogenicity                                                 | Calculation method |
| Reproductive toxicity                                           | Calculation method |
| STOT - single exposure                                          | Calculation method |
| STOT - repeated exposure                                        | Calculation method |
| Acute aquatic toxicity                                          | Calculation method |
| Chronic aquatic toxicity                                        | Calculation method |
| Aspiration hazard                                               | Calculation method |
| Ozone                                                           | Calculation method |

#### Key literature references and sources for data used to compile the SDS

U.S. Environmental Protection Agency ChemView Database  
European Food Safety Authority (EFSA)  
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA\_RAC)  
European Chemicals Agency (ECHA) (ECHA\_API)  
EPA (Environmental Protection Agency)  
Acute Exposure Guideline Level(s) (AEGl(s))  
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act  
U.S. Environmental Protection Agency High Production Volume Chemicals  
Food Research Journal  
Hazardous Substance Database  
International Uniform Chemical Information Database (IUCLID)  
Japan GHS Classification  
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)  
NIOSH (National Institute for Occupational Safety and Health)  
National Library of Medicine's ChemID Plus (NLM CIP)  
National Toxicology Program (NTP)  
New Zealand's Chemical Classification and Information Database (CCID)



Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
World Health Organization

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**Revision Note** Initial Release.

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

**Disclaimer**

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**End of Safety Data Sheet**