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## 1. Identification of the substance/ mixture and of the company/ undertaking

### 1.1 Product identifier

**Trade name:** LEYBONOL LVO 220  
**Product description:** Synthetic oil (ester oil with additives)

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

**Uses:** Vacuum pump oil, Industrial

**Recommended restrictions on use:** For industrial use only.

<b>Order number:</b>	<b>Number</b>	<b>Package Size</b>
	L22001	1 Liter

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

**Supplier:** Leybold GmbH  
Bonner Strasse 498  
D-50968 Cologne  
Phone +49-221-347-0  
Fax +49-221-347-1250  
Internet www.leybold.com

**E-Mail:** documentation@leybold.com

### 1.4 Emergency phone number

**Emergency phone number:** +49/ (0)700 24112112 (OLC)

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## 2. Hazards identification

### 2.1 Classification of the substance or mixture

#### Classification (REGULATION (EC) No 1272/2008)

**Chronic aquatic toxicity, Category 3:** H412: Harmful to aquatic life with long lasting effects.

#### Classification (67/548/EEC, 1999/45/EC)

**Dangerous for the environment:** R52/53: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### 2.2 Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

**Hazard statements:** H412 Harmful to aquatic life with long lasting effects. |

#### Supplemental Hazard Statements

**Precautionary statements:** Prevention:  
P273 Avoid release to the environment.  
Disposal:  
P501 Dispose of contents/ container to an approved waste disposal plant. |

**Additional Labelling:** EUH208 Contains: N-1-naphthylaniline. May produce an allergic reaction. |

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**2.3 Other hazards:**

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

**3. Composition/ information on ingredients**
**3.2 Mixtures**
**Hazardous components**

Chemical Name	CAS-No. EC-No. Registration number	Classification (67/548/EEC)	Classification (REGULATION (EC) No 1272/2008)	Concentration [%]
O,O,O-triphenyl phosphorothioate	597-82-0 209-909-9	R53	Aquatic Chronic 4; H413	>= 1 - < 10
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	68411-46-1 270-128-1	R52/53	Aquatic Chronic 3; H412	>= 1 - < 10
N-1-naphthylaniline	90-30-2 201-983-0	Xn; R22 Xi; R43 N; R50/53	Acute Tox. 4; H302 Skin Sens. 1; H317 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 0.25 - < 1
Amines, C11-14- branched alkyl, monoethyl and diethyl phosphates	80939-62-4 279-632-6	Xi; R36/38 N; R51/53	Skin Irrit. 2; H315 Eye Irrit. 2; H319 Aquatic Chronic 2; H411	>= 0.1 - < 1
distillates (petroleum), hydrotreated middle	64742-46-7 265-148-2	Xn; R65	Asp. Tox. 1; H304	>= 0.1 - < 1

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

**4. First aid measures**
**4.1 Description of first aid measures**
**If inhaled:**

If inhaled  
 Move to fresh air.  
 If not breathing, give artificial respiration.  
 If breathing is difficult, give oxygen.  
 In case of bluish discoloration (lips, ear lobes, fingernails), give oxygen as quickly as possible.  
 If symptoms persist, call a physician.

**In case of skin contact:**

In case of skin contact  
 Wash off with soap and water.  
 Remove contaminated clothing and shoes.  
 Wash contaminated clothing before re-use.  
 Get medical attention if irritation develops and persists.

**In case of eye contact:**

In case of eye contact  
 Rinse thoroughly with plenty of water, also under the eyelids.  
 If eye irritation persists, consult a specialist.

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**If swallowed:** If swallowed, DO NOT induce vomiting.  
Consult a physician if necessary.

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

**Symptoms:** No information available.

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

**Treatment:** No information available.

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### 5. Firefighting measures

#### 5.1 Extinguishing media

**Suitable extinguishing media:** Carbon dioxide (CO<sub>2</sub>)  
Dry powder  
Foam  
Alcohol-resistant foam  
Water mist

**Unsuitable extinguishing media:** High volume water jet

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

**Specific hazards during firefighting:** Burning produces noxious and toxic fumes.

#### 5.3 Advice for firefighters

**Special protective equipment for firefighters:** In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

**Further information:** In the event of fire, cool tanks with water spray.

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### 6. Accidental release measures

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

**Personal precautions:** Use personal protective equipment.  
Ensure adequate ventilation.

#### 6.2 Environmental precautions

**Environmental precautions:** Should not be released into the environment.  
Do not contaminate water.  
Do not flush into surface water or sanitary sewer system.

#### 6.3 Methods and materials for containment and cleaning up

**Methods for cleaning up:** Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

**6.4 Reference to other sections:** Forms slippery/greasy layers with water.

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## 7. Handling and storage

### 7.1 Precautions for safe handling

**Advice on safe handling:** Handle in accordance with good industrial hygiene and safety practice.  
Keep container closed when not in use.  
Do not use pressure to empty drums.  
Ensure all equipment is electrically grounded before beginning transfer operations.

### 7.2 Conditions for safe storage, including any incompatibilities

**Requirements for storage areas and containers:** Keep container tightly closed in a dry and well-ventilated place.

**Other data:** Stable under recommended storage conditions.

### 7.3 Specific end uses

**Specific use(s):** Raw material for industry

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## 8. Exposure controls/ personal protection

**8.1 Control parameters:** Contains no substances with occupational exposure limit values.

### DNEL

**Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:**

End Use: Workers  
Exposure routes: Skin contact  
Potential health effects: Chronic effects, Systemic effects  
Value: 0.62 mg/kg

End Use: Workers  
Exposure routes: Inhalation  
Potential health effects: Chronic effects, Systemic effects  
Value: 4.37 mg/m<sup>3</sup>

End Use: General exposures  
Exposure routes: Skin contact  
Potential health effects: Chronic effects, Systemic effects  
Value: 0.31 mg/kg

End Use: General exposures  
Exposure routes: Inhalation  
Potential health effects: Chronic effects, Systemic effects  
Value: 1.09 mg/m<sup>3</sup>

End Use: General exposures  
Exposure routes: Ingestion  
Potential health effects: Chronic effects, Systemic effects  
Value: 0.31 mg/kg

### PNEC

**Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene:**

Fresh water  
Value: 0.051 mg/l

Marine water  
Value: 0.0051 mg/l

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Fresh water sediment  
Value: 9320 mg/kg

Marine sediment  
Value: 932 mg/kg

Soil  
Value: 1860 mg/kg

STP  
Value: 1 mg/l

## 8.2 Exposure controls

### Personal protective equipment

**Respiratory protection:** Breathing apparatus needed only when aerosol or mist is formed. In the case of vapour formation use a respirator with an approved filter.

**Hand protection:** Neoprene gloves

**Eye protection:** Safety glasses with side-shields  
Tightly fitting safety goggles

**Skin and body protection:** impervious clothing

**Hygiene measures:** Avoid contact with skin, eyes and clothing.  
Provide adequate ventilation.  
Do not breathe dust or spray mist.

### Environmental exposure controls

**General advice:** Should not be released into the environment.  
Do not contaminate water.  
Do not flush into surface water or sanitary sewer system.

## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance:	liquid
Colour:	yellow
Odour:	characteristic
Odour Threshold:	No information available.
Flash point:	262 °C
Ignition temperature:	no data available
Lower explosion limit:	no data available
Upper explosion limit:	no data available
Flammability (solid, gas):	No information available.
Autoignition temperature:	No information available.
pH:	not applicable
Vapour pressure:	no data available
Density:	0,915 g/cm <sup>3</sup>
Relative density:	No information available.
Water solubility:	slightly soluble
Partition coefficient: noctanol/water:	No information available.
Solubility in other solvents:	No information available.
Viscosity, kinematic:	94.9 mm <sup>2</sup> /s at 40 °C
Relative vapour density:	No information available.
Evaporation rate:	No information available.

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## 9.2 Other information

Oxidising potential: Note: No information available.

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## 10. Stability and reactivity

**10.1 Reactivity:** No dangerous reaction known under conditions of normal use.

**10.2 Chemical stability:** No decomposition if stored and applied as directed.

### 10.3 Possibility of hazardous reactions

**Hazardous reactions:** Hazardous polymerisation does not occur.

### 10.4 Conditions to avoid

**Conditions to avoid:** Heat.

### 10.5 Incompatible materials

**Materials to avoid:** Strong acids and strong bases

### 10.6 Hazardous decomposition products

**Hazardous decomposition products:** Carbon oxides

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## 11. Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

**Acute oral toxicity:** Remarks: Not classified due to lack of data.

#### Acute oral toxicity

**Benzenamine, N-phenyl-, reaction products with 2,4,4- trimethylpentene:** LD50: > 2,000 mg/kg  
Species: Rat  
Method: OECD Test Guideline 401

**N-1-naphthylaniline:** LD50: 1.625 mg/kg  
Species: rat

**Acute inhalation toxicity:** Remarks: Not classified due to lack of data.

**Acute dermal toxicity:** Remarks: Not classified due to lack of data.

#### Acute dermal toxicity

**Benzenamine, N-phenyl-, reaction products with 2,4,4- trimethylpentene:** LD50: > 2,000 mg/kg  
Species: Rat

**N-1-naphthylaniline:** LD50 Dermal: > 5.000 mg/kg  
Species: rabbit

#### Skin corrosion/irritation

**Skin irritation:** Remarks: Not classified due to lack of data.

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**Skin irritation****Benzenamine, N-phenyl-, reaction products with 2,4,4- trimethylpentene:**Species: Rabbit  
Result: No skin irritation  
Method: OECD Test Guideline 404**N-1-naphthylaniline:**Species: rabbit  
Result: No skin irritation  
Method: Draize Test**Serious eye damage/eye irritation****Eye irritation:**

Remarks: Not classified due to lack of data.

**Eye irritation****Benzenamine, N-phenyl-, reaction products with 2,4,4- trimethylpentene:**Species: Rabbit  
Result: No eye irritation  
Method: OECD Test Guideline 405**N-1-naphthylaniline:**Species: rabbit  
Result: No eye irritation  
Method: OECD Test Guideline 405**Respiratory or skin sensitization****Sensitisation:**

Remarks: Not classified due to lack of data.

**Sensitisation****Benzenamine, N-phenyl-, reaction products with 2,4,4- trimethylpentene:**Species: Guinea pig  
Classification: Did not cause sensitisation on laboratory animals.  
Method: OECD Test Guideline 406**N-1-naphthylaniline:**Maximisation Test (GPMT)  
Species: Guinea pig  
Classification: May cause sensitisation by skin contact.  
Result: May cause sensitisation by skin contact.Patch Test  
Species: Human  
Classification: May cause sensitisation by skin contact.  
Result: May cause sensitisation by skin contact.**Germ cell mutagenicity****N-1-naphthylaniline:**Ames test  
Result: negativeChinese Hamster Ovary (CHO)  
Result: negative**Genotoxicity in vivo****N-1-naphthylaniline:**in vivo assay  
Species: mouse  
Result: negative**Mutagenicity Assessment:**

Remarks: Not classified due to lack of data.

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<b>Carcinogenicity Assessment:</b>	Remarks: Not classified due to lack of data.
<b>Reproductive toxicity Assessment:</b>	Remarks: Not classified due to lack of data.
<b>Target Organ Systemic Toxicant – Single exposure:</b>	Remarks: Not classified due to lack of data.
<b>Target Organ Systemic Toxicant – Repeated exposure:</b>	Remarks: Not classified due to lack of data.
<b>Aspiration hazard</b>	
<b>Aspiration toxicity:</b>	No aspiration toxicity classification
<b>Toxicology Assessment</b>	
<b>Further information:</b>	There is no data available for this product.

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## 12. Ecological information

### 12.1 Toxicity

#### Toxicity to daphnia and other aquatic invertebrates. (Chronic toxicity)

**N-1-naphthylaniline:** NOEC: 0.02 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Analytical monitoring: yes

### 12.2 Persistence and degradability

#### Biodegradability

**Benzenamine, N-phenyl-, reaction products with 2,4,4- trimethylpentene:** Result: According to the results of tests of biodegradability this product is not readily biodegradable.  
Method: CO2 Evolution Test

**N-1-naphthylaniline:** aerobic  
Result: According to the results of tests of biodegradability this product is not readily biodegradable.  
0 %  
Method: OECD Test Guideline 301

### 12.3 Bioaccumulative potential

#### Bioaccumulation

**N-1-naphthylaniline:** Species: Cyprinus carpio (Carp)  
Exposure time: 56 d  
Temperature: 25 °C  
Concentration: 0.1 mg/l  
Bioconcentration factor (BCF): 427 – 2,730

### 12.4 Mobility in soil

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

This substance is not considered to be persistent, bioaccumulating and toxic (PBT).  
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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## 12.6 Other adverse effects

**Additional ecological information:** There is no data available for this product.

### Additional ecological information

**Benzenamine, N-phenyl-, reaction products with 2,4,4- trimethylpentene:** Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.  
Do not allow material to contaminate ground water system.  
Do not flush into surface water or sanitary sewer system. |

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## 13. Disposal considerations

### 13.1 Waste treatment methods

**Product:** Dispose of in accordance with the European Directives on waste and hazardous waste.  
Dispose of wastes in an approved waste disposal facility.

**Contaminated packaging:** Do not burn, or use a cutting torch on, the empty drum.

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## 14. Transport information

ADR: Not dangerous goods

IATA: Not dangerous goods

IMDG: Not dangerous goods

RID: Not dangerous goods

**Special precautions for user:** Not classified as dangerous in the meaning of transport regulations. |

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## 15. Regulatory information

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

**REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59):** This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57). |

**Major Accident Hazard Legislation:** 96/82/EC Update: 2003  
Directive 96/82/EC does not apply

### Notification status

US.TSCA: On TSCA Inventory  
DSL: This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL. |

AICS: Not in compliance with the inventory |

NZIoC: Not in compliance with the inventory |

ENCS: Not in compliance with the inventory |

KECI: On the inventory, or in compliance with the inventory |

PICCS: Not in compliance with the inventory |

IECSC: On the inventory, or in compliance with the inventory |

**15.2 Chemical Safety Assessment:** No information available. |

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## 16. Other information

### Full text of R-phrases referred to under sections 2 and 3

R22	Harmful if swallowed.
R36/38	Irritating to eyes and skin.
R43	May cause sensitization by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R53	May cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.

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

H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H373	May cause damage to organs through prolonged or repeated exposure if swallowed.
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.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

## History

<b>Date of issue:</b>	June 17, 2010
<b>Date of revision:</b>	February 05, 2015
<b>Version:</b>	C0

| Indicates information that has changed from previously issued version.

## Notice to reader

This safety data sheet serves to complete but not to replace the technical product sheets. The information contained herein is given in good faith and is accurate to the best of knowledge at the date indicated above. It is understood by the user that any use of the product for purposes other than those for which it was designed entails potential risk. The information given herein in no way dispenses the user from knowing and applying all provisions regulating his activity. The user bears sole liability for the precautions required when using the product. The information contained therein is protected by copyright and must not be reproduced or amended without the express written approval of Leybold. This document may be passed on only to the extent required by law. Any dissemination of our safety datasheets (e.g. as a document for download from the Internet) beyond this legally required extent is not permitted without express written consent.

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