

## SAFETY DATA SHEET

Trade name:

**LEYBONOL LVO 100**

Date of issue: June 25, 2009

Date of revision: Mar. 4, 2015

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

#### Product identifier

Trade name: LEYBONOL LVO 100

Product description: Mineral oil, free of additives

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

Use: Vacuum pump oil, Industrial use, lubricant

Uses advised against: This product should not be used in breathing air compressors.

Order number:	Number	Package Size
	L10001	1 Liter
	L10005	5 Liter
	L10020	20 Liter
	L10099	208 Liter

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

Supplier: Oerlikon Leybold Vacuum GmbH  
Bonner Str. 498  
D-50968 Cologne  
Phone: +49-221-347-0  
Fax: +49-221-347-1250  
Internet: [www.oerlikon.com/leyboldvacuum](http://www.oerlikon.com/leyboldvacuum)

E-Mail: [documentation.vacuum@oerlikon.com](mailto:documentation.vacuum@oerlikon.com)

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

### 2. Hazards identification

#### 2.1 Classification of the substance or mixture

Product definition: Mono-constituent substance

#### Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Not classified.

#### Classification according to Directive 67/548/EEC [DSD]

Not classified.

See sections 11 and 12 for more detailed information on health effects and symptoms and environmental hazards.

#### 2.2 Label elements

Signal word: No signal word.

Hazard statements: No known significant effects or critical hazards.

#### Precautionary statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

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<b>Disposal</b>	Not applicable.
<b>Supplemental label elements</b>	Safety data sheet available on request.
<b>Special packaging requirements</b>	
<b>Containers to be fitted with child-resistant fastenings</b>	Not applicable.
<b>Tactile warning of danger</b>	Not applicable.
<b>2.3 Other hazards</b>	
<b>Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII</b>	No.
<b>Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII</b>	Not available.
<b>Other hazards which do not result in classification</b>	Defatting to the skin. NOTE: This product should not be used in compressors producing breathable air.

### 3. Composition/information on ingredients

**Substance/mixture** Mono-constituent substance  
Highly refined base oil (IP 346 DMSO extract < 3%).

<b>Product/ingredient Name</b>	<b>Identifiers</b>	<b>%</b>	<b>Classification 67/548/EEC 1272/2008 [CLP]</b>	<b>Regulation (EC) No.</b>	<b>Type</b>
Base oil - unspecified	Varies	100	Not classified.	Not classified.	[A]

Type

[A] Constituent

[B] Impurity

[C] Stabilising additive

Occupational exposure limits, if available, are listed in Section 8.

### 4. First aid measures

#### 4.1 Description of first aid measures

<b>Eye contact</b>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.
<b>Skin contact</b>	Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Wash clothing

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before reuse. Clean shoes thoroughly before reuse. Get medical attention if irritation develops.

### Inhalation

If inhaled, remove to fresh air. Get medical attention if symptoms appear.

### Ingestion

Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

### Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training.

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

See Section 11 for more detailed information on health effects and symptoms.

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

#### Notes to physician

Treatment should in general be symptomatic and directed to relieving any effects.

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## 5. Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing Media

In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.

#### Unsuitable extinguishing media

Do not use water jet.

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

#### Hazards from the substance or mixture

In a fire or if heated, a pressure increase will occur and the container may burst.

#### Hazardous combustion products

Combustion products may include the following:  
carbon oxides (CO, CO<sub>2</sub>) (carbon monoxide, carbon

### 5.3 Advice for firefighters

#### Special precautions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

#### Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for firefighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

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## 6. Accidental release measures

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

#### For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Floors may be slippery; use care to avoid falling. Put on appropriate personal protective equipment.

#### For emergency responders

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For nonemergency personnel".

### 6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.  
Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

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

#### Small spill

Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

#### Large spill

Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.

### 6.4 Reference to other sections

See Section 1 for emergency contact information.  
See Section 5 for firefighting measures.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 12 for environmental precautions.  
See Section 13 for additional waste treatment information.

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## 7. Handling and storage

### Protective measures

Put on appropriate personal protective equipment.

### Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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

Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep away from heat and direct sunlight. Keep container tightly closed and sealed until ready for use. Containers that have been

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opened must be carefully resealed and kept upright to prevent leakage. Store and use only in equipment/ containers designed for use with this product. Do not store in unlabeled containers.

Not suitable  
Germany - Storage code

Prolonged exposure to elevated temperature.  
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### 7.3 Specific end use(s) Recommendations

See section 1.2 and Exposure scenarios in annex, if applicable.

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## 8. Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limits

#### Product/ingredient name Exposure limit values

##### Base oil - unspecified

##### ACGIH TLV (United States).

TWA: 5 mg/m<sup>3</sup> 8 hours. Issued/Revised: 11/2009 Form: Inhalable fraction

Whilst specific OELs for certain components may be shown in this section, other components may be present in any mist, vapour or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.

#### Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

#### Derived No Effect Level

No DNELs/DMELs available.

#### Predicted No Effect Concentration

No PNECs available

### 8.2 Exposure controls

#### Appropriate engineering controls

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

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All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.

Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards. The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

### Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Respiratory protection

Respiratory protective equipment is not normally required where there is adequate natural or local exhaust ventilation to control exposure.

In case of insufficient ventilation, wear suitable respiratory equipment.

The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

#### Eye/face protection

Safety glasses with side shields.

#### Skin protection

#### Hand protection

##### General Information:

Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. The correct choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Most gloves provide protection for only a limited time before they must be discarded and replaced (even the best chemically resistant gloves will break down after repeated chemical exposures). Gloves should be chosen in consultation with the supplier / manufacturer and taking account of a full assessment of the working conditions.

Recommended: Nitrile gloves.

##### Breakthrough time:

Breakthrough time data are generated by glove manufacturers under laboratory test conditions and represent how long a glove can be expected to provide effective permeation resistance. It is important

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when following breakthrough time recommendations that actual workplace conditions are taken into account. Always consult with your glove supplier for up-to-date technical information on breakthrough times for the recommended glove type.

Our recommendations on the selection of gloves are as follows:  
Continuous contact:

Gloves with a minimum breakthrough time of 240 minutes, or >480 minutes if suitable gloves can be obtained.

If suitable gloves are not available to offer that level of protection, gloves with shorter breakthrough times may be acceptable as long as appropriate glove maintenance and replacement regimes are determined and adhered to.

Short-term / splash protection:

Recommended breakthrough times as above.

It is recognised that for short-term, transient exposures, gloves with shorter breakthrough times may commonly be used. Therefore, appropriate maintenance and replacement regimes must be determined and rigorously followed.

### **Glove Thickness:**

For general applications, we recommend gloves with a thickness typically greater than 0.35 mm. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.

Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

### **Skin and body**

Use of protective clothing is good industrial practice.

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin.

Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.



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**Environmental exposure controls**

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

**9. Physical and chemical properties****9.1 Information on basic physical and chemical properties****Appearance**

<b>Physical state</b>	Liquid.
<b>Colour</b>	Amber.
<b>Odour</b>	Oily.
<b>Odour threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Pour point</b>	-12 °C
<b>Flash point</b>	Open cup: 268°C (514.4°F) [Cleveland.]
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	Not available.
<b>Vapour pressure</b>	Not available.
<b>Vapour density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Density</b>	879 kg/m <sup>3</sup> (0.879 g/cm <sup>3</sup> ) at 15°C
<b>Solubility(ies)</b>	Not available.
<b>Partition coefficient: n-octanol/water</b>	>3
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Kinematic: 94 mm <sup>2</sup> /s (94 cSt) at 40°C Kinematic: 10.6 mm <sup>2</sup> /s (10.6 cSt) at 100°C
<b>Explosive properties</b>	Not available.
<b>Oxidising properties</b>	Not available.

**9.2 Other information**

No additional information.

**10. Stability and reactivity****10.1 Reactivity**

No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

**10.2 Chemical stability**

The product is stable.

**10.3 Possibility of hazardous reactions**

Under normal conditions of storage and use, hazardous reactions will not occur.



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Under normal conditions of storage and use, hazardous polymerisation will not occur.

### 10.4 Conditions to avoid

Avoid all possible sources of ignition (spark or flame).

### 10.5 Incompatible materials

Reactive or incompatible with the following materials: oxidising materials.

### 10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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## 11. Toxicological information

### 11.1 Information on toxicological effects

#### Conclusion/Summary

Not classified. Based on available data, the classification criteria are not met.

#### Information on the likely routes of exposure

Routes of entry anticipated: Dermal, Inhalation.

#### Potential acute health effects

##### Inhalation

Vapour inhalation under ambient conditions is not normally a problem due to low vapour pressure.

##### Ingestion

No known significant effects or critical hazards.

##### Skin contact

Defatting to the skin. May cause skin dryness and irritation.

##### Eye contact

No known significant effects or critical hazards.

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

##### Inhalation

May be harmful by inhalation if exposure to vapour, mists or fumes resulting from thermal decomposition products occurs.

##### Ingestion

No specific data.

##### Skin contact

Adverse symptoms may include the following:  
irritation  
dryness  
cracking

##### Eye contact

No specific data.

#### Delayed and immediate effects and also chronic effects from short and long term exposure

##### Inhalation

Overexposure to the inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

##### Ingestion

Ingestion of large quantities may cause nausea and diarrhoea.

##### Skin contact

Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

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<b>Eye contact</b>	Potential risk of transient stinging or redness if accidental eye contact occurs.
<b>Potential chronic health effects</b>	
<b>General</b>	No known significant effects or critical hazards.
<b>Carcinogenicity</b>	No known significant effects or critical hazards.
<b>Mutagenicity</b>	No known significant effects or critical hazards.
<b>Developmental effects</b>	No known significant effects or critical hazards.
<b>Fertility effects</b>	No known significant effects or critical hazards.

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### 12. Ecological information

#### 12.1 Toxicity

**Environmental hazards** Not classified as dangerous

#### 12.2 Persistence and degradability

Not expected to be rapidly degradable.

#### 12.3 Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

#### 12.4 Mobility in soil

**Soil/water partition coefficient (KOC)** Not available.

**Mobility** Spillages may penetrate the soil causing ground water contamination.

#### 12.5 Results of PBT and vPvB assessment

**PBT** No.  
**vPvB** Not available.

#### 12.6 Other adverse effects

**Other ecological information** Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

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### 13. Disposal considerations

#### 13.1 Waste treatment methods

##### Product

**Methods of disposal** Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.

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**Hazardous waste** Yes.

### European waste catalogue (EWC)

Waste code	Waste designation
13 02 05*	mineral-based non-chlorinated engine, gear and lubricating oils

However, deviation from the intended use and/or the presence of any potential contaminants may require an alternative waste disposal code to be assigned by the end user.

### Packaging

#### Methods of disposal

Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.

Waste code	European waste catalogue (EWC)
15 01 10*	packaging containing residues of or contaminated by dangerous substances

#### Special precautions

This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## 14. Transport information

	ADR/RID	ADN	IMDG	IATA
<b>14.1 UN number</b>	Not regulated.	Not regulated.	Not regulated.	Not regulated.
<b>14.2 UN proper shipping name</b>	-	-	-	-
<b>14.3 Transport hazard class(es)</b>	-	-	-	-
<b>14.4 Packing group</b>	-	-	-	-
<b>14.5 Environmental hazards</b>	No.	No.	No.	No.
<b>Additional information</b>	-	-	-	-

**14.6 Special precautions for user** Not available.

## 15. Regulatory information

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

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

#### Annex XIV - List of substances subject to authorization

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### Substances of very high concern

None of the components are listed.

### Annex XVII - Restrictions

Not applicable.

**on the manufacture,  
placing on the market  
and use of certain  
dangerous substances,  
mixtures and articles**

### Other regulations

#### REACH Status

The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.

#### United States inventory (TSCA 8b)

All components are listed or exempted.

#### Australia inventory (AICS)

All components are listed or exempted.

#### Canada inventory

All components are listed or exempted.

#### China inventory (IECS)

All components are listed or exempted.

#### Japan inventory (ENCS)

All components are listed or exempted.

#### Korea inventory (KECI)

All components are listed or exempted.

#### Philippines inventory (PICCS)

All components are listed or exempted.

#### Taiwan inventory (CSNN)

Not determined

### National regulations

#### Hazard class for water

1 Appendix No. 3 (classified according VwVwS)

### 15.2 Chemical Safety Assessment

This product contains substances for which Chemical Safety Assessments are still required.

## 16. Other information

### Abbreviations and acronyms

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

CAS = Chemical Abstracts Service

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

CSA = Chemical Safety Assessment

CSR = Chemical Safety Report

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

DPD = Dangerous Preparations Directive [1999/45/EC]

DSD = Dangerous Substances Directive [67/548/EEC]

EINECS = European Inventory of Existing Commercial chemical Substances

ES = Exposure Scenario

EUH statement = CLP-specific Hazard statement

EWC = European Waste Catalogue

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

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IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
OECD = Organisation for Economic Co-operation and Development  
PBT = Persistent, Bioaccumulative and Toxic  
PNEC = Predicted No Effect Concentration  
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
RRN = REACH Registration Number  
SADT = Self-Accelerating Decomposition Temperature  
SVHC = Substances of Very High Concern  
STOT-RE = Specific Target Organ Toxicity - Repeated Exposure  
STOT-SE = Specific Target Organ Toxicity - Single Exposure  
TWA = Time weighted average  
UN = United Nations  
UVCB = Complex hydrocarbon substance  
VOC = Volatile Organic Compound  
vPvB = Very Persistent and Very Bioaccumulative

<b>Full text of abbreviated H statements</b>	Not applicable.
<b>Full text of classifications [CLP/GHS]</b>	Not applicable.
<b>Full text of abbreviated R phrases</b>	Not applicable.
<b>Full text of classifications [DSD/DPD]</b>	Not applicable.

**History**

<b>Date of issue/ Date of revision</b>	04/03/2015.
<b>Date of first issue</b>	06/25/2009

**Notice to reader**

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from us.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. Oerlikon Leybold Vacuum shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken.