

BONDERITE[®]**BONDERITE L-MR 232160**

March 2014

PRODUCT DESCRIPTION

BONDERITE L-MR 232160 provides the following product characteristics:

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|---------------------|-----------------------------------|
| Technology | Lubricants |
| Product Type | Machining & Grinding Fluids |
| Application | Emulsion for Machining & Grinding |

BONDERITE L-MR 232160 is a boron- and amine-free mineral oil based water miscible coolant suitable for a wide range of operations and water hardness (10 - 40° dH). Due to the selection of raw materials BONDERITE L-MR 232160 has a long life time, also because of it's high hardwater stability. Emulsions made from BONDERITE L-MR 232160 are nearly odourless. BONDERITE L-MR 232160 is free of EP-additives based on chlorine, sulfur or phosphorus. It contains proven polar compounds.

Application Areas

BONDERITE L-MR 232160 is a water-miscible cutting fluid designed for the machining of aluminium alloys, non-ferrous metals, steel and cast iron.

A combination of inhibitors insures no staining on aluminium alloys and non-ferrous metals.

TECHNICAL DATAConcentrate:

| | |
|--|--------|
| Density, 20°C, g/cm ³ DIN 51757 | ~0.947 |
| Viscosity, (20°C), mm ² /s DIN 53211 | ~120 |
| Flashpoint, °C DIN ISO 2592 | >100 |

Emulsion:

| | |
|--------------------------|------------------|
| Appearance | finely dispersed |
| pH-Value, (5%, DI-Water) | ~9.3 |

Corrosion protection properties:

according to DIN 51360/2 0/0 at 6%

Lubricity Reichert-balance:

5%, 1.5 kg, (mm²) ~30

DIRECTION OF USE**Preliminary Statement**

Prior to use it is necessary to read the **Material Safety Data Sheet** for information about precautionary measures and safety recommendations. Also, for chemical products exempt from compulsory labeling, the relevant precautions should always be observed. Please also refer to the local safety instructions and contact Henkel for analytical support.

Concentration

Make up concentration: 5 % to 10 %
(depending on the machining operation and material)

Topping up concentration: 1 % to 2 %

Control of the emulsionRefractometer:

The reading in °Brix multiplied by the product factor 1.0 is equivalent to the concentration in percent.

Titration:

100 mL of the emulsion are titrated with 0.5 N HCl using an electronic pH-meter down to pH 5.5. The consumption of acid in mL multiplied by the product factor 0.79 is equivalent to the concentration in percent.

Splitting with acid (DIN 51368):

100 mL of the emulsion are heated up with concentrated hydrochloric acid. The reading in ml multiplied by the product factor 1.2 is equivalent to the concentration in percent.

Storage

Temperature, °C +5 to +40

Classification

Please refer to the corresponding **Material Safety Data Sheets** for details on:

Hazardous Information
Transport Regulations
Safety Regulations



ADDITIONAL INFORMATION

Disclaimer

Note:

The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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Reference 0.2