

## BONDERITE L-MR 60-1

Known as Multan 60-1  
January 2014

### PRODUCT DESCRIPTION

BONDERITE L-MR 60-1 provides the following product characteristics:

|                     |                                  |
|---------------------|----------------------------------|
| <b>Technology</b>   | Lubricants                       |
| <b>Product Type</b> | Machining & Grinding Fluids      |
| <b>Application</b>  | Coolant for machining & grinding |

BONDERITE L-MR 60-1 is a water miscible machine tool lubricant. BONDERITE L-MR 60-1 is a neutral pH, boron- and mineral oil-free coolant for a wide range of operations. To meet the requirements of severe forming and cutting operations the formulation of BONDERITE L-MR 60-1 contains AW-additives. This package guarantees good lubricity, even BONDERITE L-MR 60-1 allows for when used at very low concentrations. Excellent corrosion control and easy waste water treatment with Water hardness 0 to 60 °GH.

### Application Areas

BONDERITE L-MR 60-1 is mainly used for general cutting operations on steel and cast iron. The suitability for aluminium alloys should be checked first in an individual field test.

### TECHNICAL DATA

#### Concentrate:

|  |        |
|--|--------|
| Density, 20°C, g/cm <sup>3</sup><br>DIN 51757      | ~1.066 |
| Viscosity, (20°C), mm <sup>2</sup> /s<br>DIN 53211 | ~165   |
| Flashpoint, °C<br>DIN ISO 2592                     | >100   |

#### Emulsion:

|                                       |             |
|---------------------------------------|-------------|
| Appearance                            | clear fluid |
| pH-value, (5%, DI water)<br>DIN 51369 | ~7.7        |

#### Corrosion protection properties:

|                          |             |
|--------------------------|-------------|
| according to DIN 51360/1 | R0/S0 at 5% |
| according to DIN 51360/2 | 0/0 at 5%   |

#### Lubricants Reichert-Waage Steel:

|                                |    |
|--------------------------------|----|
| 5%, 1.5 kg, (mm <sup>2</sup> ) | 13 |
|--------------------------------|----|

### 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: 3 % to 7 %  
(depending on the machining operation and material)

Topping up concentration: 1 % to 5 %

#### Control of the emulsion

#### Refractometer:

The reading in °Brix multiplied by the product factor 1.35 is equivalent to the concentration in percent.

#### Titration:

100 mL of the emulsion are titrated down to pH 5.5 using 0.5 N HCl and an electronic pH-meter. The consumption of acid in mL multiplied by the product factor 0.47 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:

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Reference 0.1