



BONDERITE L-MR 90-2

Known as Multan 90-2
November 2013

PRODUCT DESCRIPTION

BONDERITE L-MR 90-2 provides the following product characteristics:

5%, 1,5 kg, (mm ²)	22
8%, 1,5 kg, (mm ²)	21
Aluminium:	
5 %, 0,1 kg, (mm ²)	18

Technology	Lubricants
Product Type	Machining & Grinding Fluids
Application	Grinding, CNC-Machining, Honing etc.

BONDERITE L-MR 90-2 is a boron free semi-synthetic general purpose coolant, suitable for a wide range of machining operations and water hardness between 5 and 40° GH. By using Henkel's patented emulsifier system, BONDERITE L-MR 90-2 generate a long lifetime, also because of it's high hardwaterstability. In general, no addition of biocides is needed during the emulsion live time. BONDERITE L-MR 90-2 is free of EP-additives based on chlorine, sulfur or phosphorus. The high lubricity of BONDERITE L-MR 90-2 extends the tool life time and reduces the process costs. The excellent cleaning performance of BONDERITE L-MR 90-2 keeps the machine clean and reduces the maintenance cost, also e.g. in a following cleaning step. BONDERITE L-MR 90-2 fulfill the rules of the TRGS 611.

Application Areas

BONDERITE L-MR 90-2 is used for machining steel, high alloyed steel, cast iron and aluminium alloys.

Brass and copper, etc. can be co-machined in a material mix as well.

TECHNICAL DATA

<u>Concentrate:</u>	
Density, 20°C, g/cm ³ DIN 51757	~0.946
Viscosity, (20°C), mm ² /s DIN 53211	~124
Refractive index	~1.4597
<u>Emulsion:</u>	
Appearance	semi transparent
pH-Value, (5%, DI-Water) DIN 51369	~9.3
Corrosion protection properties:	
according to DIN 51360/1	R0/S0 at 2.0 %
according to DIN 51360/2	0/0 at 3.5 %
Emulsion stability:	
according to DIN 51367	98 %
with 3 to 5 g/l NaCl added	100 %
Lubricants Reichert-Waage Steel:	

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 emulsion

Refractometer:

The reading in °Brix multiplied by the product factor 1.2 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 0.34 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 1.9 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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