



# SPIRIT MS 4000 D



Multipurpose micro-emulsion according to German TRGS 611\*

## UTILISATIONS

- **SPIRIT MS 4000 D** is recommended as a multipurpose micro-emulsion to be used in many different machining operations and for different ferrous and non-ferrous materials.
- **SPIRIT MS 4000 D** is particularly suitable even for difficult machining operations and for plane, cylindrical and centerless grinding.

● Recommended dilutions*:	medium cutting operations 3-7%	difficult cutting operations 3-10%	grinding 3-5%
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\* optimal concentration to be found by trials.

## PROPERTIES

- no staining of cuprous metals
- free of NDELA-forming agents
- chlorine-free
- highly stable micro-emulsion type
- long service life
- very stable pH-value
- A higher limit value for nitrite ( TRGS 611, Chpt. 4, point 3) requires, due to its inhibition, no partial or complete change of the emulsion

TYPICAL CHARACTERISTICS	METHODS	UNITS	SPIRIT MS 4000 D
Appearance	visual	-	klar
Colour	DIN ISO 2049	-	1,5
Density at 15 °C	DIN 51 575	kg/m <sup>3</sup>	1017
Viscosity at 40 °C	DIN 51 562	mm <sup>2</sup> /s	48
Mineraloil content	-	%	35
Refractive index nD <sub>20</sub>	DIN 51 432/2	-	1,461
pH-value (5%)	-	-	9,4
Corrosion (filterpaper-chips) at 3%	DIN 51360/2	rating	0
<b>Emulsion control:</b>			
Acid split factor	-	-	1,8
Refractometer factor	-	-	1,0

(given values are for information only and may change within specified limits)

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\* TRGS: Technical Rules for hazardous substances

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