

## Emulsifying oil for metalworking

### EMULGOL ES 12

EMULGOL ES 12 emulsifying oil is used as a cutting emulsion for metalworking. It contains highly refined mineral oil and a functional package containing anionic emulsifier, corrosion inhibitor.

#### Characteristics:

Emulgol ES 12 emulsifying oil is designed for making water emulsions, which are applied as cooling and lubricating liquids in metal machining, especially for steel, cast-iron as well as non-ferrous metals.

Recommended emulsion concentration depending on the kind of working and on the material type amounts from 5% to 15%.

For making the emulsion it is recommended to use water of hardness up to 15°n.

Emulgol ES 12 can also be used as a saw band fluid (sawmills) at concentration of 2-5% in water.

No	Requirements	Research methods by	Unit	Value
1.	Appearance	visually		Clear, light-brown liquid
2.	Pour Point	ASTM D-5950	°C	-8
				<b>5% emulsion</b>
3.	Test of anti-corrosion protection, protection degree	PN-92/M-55789		H0
4.	pH	PN-89/C-04963		8,8
5.	Emulsion stability after 24h/20°C, 10°N water	CBA/LB/9		stable

The above given data are the typical values for a production batch, they are not included in technical specification, and they are subject to change due to continual product research and development.

#### Specifications, classifications:

ISO L-MAA

#### Recommendations:

Refractive index – 1,0

Machining Type	Emulsion concentration (%)
Turning, drilling, milling	5-10
Threading	10-15
Grinding	3-5

For appropriate application of the cooling and lubricating emulsion formulated upon Emulgol ES 12 it is recommended to:

- always add oil to water, and not the reverse, for proper mixing of the oil concentrate and water,
- check the concentrations periodically and verify their value,
- control the quality of water used for making and diluting the emulsion,
- clean the system periodically at the emulsion change.

**Packaging:**

5l, 26kg, 180kg, 1ton.

**Storage:**

The products should be stored under a roof. If they are stored in the open air where they can be exposed to atmospheric conditions – rains, they should be placed in a horizontal position in order to avoid inrush of water to a container and to prevent label damaging; they should be covered with tarpaulin.

The products should not be stored at the temperature above 60°C and in the places where solar radiation is very strong or – temperatures very low, below 0°C. The expiry date is not less than 1 year if the storage conditions are satisfied.

**Health, Industrial Safety and the Environment :**

Information concerning safety is included in the product Safety Sheet. It contains detailed information on possible threats, warnings, first aid as well as the impact on the environment and ways of utilization of the products used. LOTOS Oil SA and the cooperating companies do not take responsibility for misuse of the product or – the use with the violation of the precautions given. Before using the product for other than recommended purposes, seek advice in the local LOTOS Oil SA office.

*The information provided in this data sheet is not intended to constitute an offer within the meaning of the Act of 23<sup>rd</sup> April 1964 - Civil Code. LOTOS Oil S.A. bears no responsibility for whatever effects of use (particularly in trade and investment decision-making) of information contained herein. Any data contained in the MSDS are typical process tolerance values and they are subject to change due to continual product research and development. Information provided in this document may undergo changes. LOTOS Oil S.A. is not responsible for the product availability.*

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