

## LUKOIL FREO GP 3010

### High quality universal metalworking fluid

#### Product description

Water miscible metalworking fluid with high content of mineral oil. Forms a stable emulsion in water of wide range of total hardness. Provides excellent detergency and tribology properties, low tendency to foaming and high resistant to microbiological attack. Does not leave contamination on the processed workpieces, tools and equipment.

#### Application

Intended for use in general machining operations (grinding, turning, milling, drilling, cutting, etc.). It also can be used for pressing and molding operations in low-tonnage production. Due to the high speed of emulsification, it can be used in systems equipped with automatic mixers. Processed materials: cast iron, low carbon and carbon steel, alloy steel, as well as some of aluminum and copper alloys.

#### Benefits

##### EMULSION STABILITY

Provides high speed of emulsification. Forms a stable water emulsion as in mixed manually and using an automatic mixer

##### LOW FOAMING

The additives in the composition guarantee low foaming, including in systems with high supply pressure

##### RESISTANCE TO BACTERIAL ATTACK

High resistance to bacterial attack

The product name in an order: Metalworking fluid LUKOIL FREO GP 3010, STO 79345251-262-2020

#### Typical test data

The information given in the typical data does not constitute a specification and can be affected by allowable production tolerances. The right to make modifications is reserved by OOO «LLK-International»

Property	Test methods	Value
Appearance	-	Homogeneous oily liquid
Stability at -15°C	GOST 6243 p.5	Pass
Storage stability	GOST 6243 p.6	Pass
Corrosion preventing characteristics of 5% emulsion in water with total hardness of 4.6 mg·EQ/dm <sup>3</sup> for 2 h, points, not more than	DIN 51360-2	0
Density at 20 °C, kg/m <sup>3</sup>	ASTM D1298 / ASTM D4052	900
pH 5% emulsion in water of total hardness 4.6 mg·eq/dm <sup>3</sup>	GOST 6243 p.4	8,5-9,5
The factor of refraction	-	1.1

#### Recommended concentration of emulsion

Operation type	Emulsion concentration, %
Grinding	3-5
Turning, cutting, drilling	5-6
Milling, threading	6-10