



Product Data

Castrol® WE3-046C Chlorine-Free EP Metalworking Fluid

Description

Castrol WE3-046C is a chlorine-free, heavy duty, emulsifiable fluid for machining and grinding steel, cast iron, stainless steels, aluminum, titanium and copper alloys. This low foaming fluid is specifically formulated for use with naturally soft or softened waters. Best results are achieved with water hardness below 6 grains (100 ppm as CaCO₃), though it may be used successfully in waters of up to 8 grains. The oily concentrate of WE3-046C is easy to mix with water, forming a stable, milky white, nonfoaming emulsion that helps protect machines and manufactured parts from rust and stain while resisting the development of rancid odors and fungus.

WE3-046C provides heavy duty extreme pressure lubricity without the use of chlorinated ingredients, making it an excellent choice for a wide variety of machining and grinding applications including broaching, tapping, reaming, deep hole drilling, multi-tool operations on CNC machines, centerless grinding and creep-feed grinding.

Advantages

- Exceptional resistance to foaming; use with confidence in soft water under conditions of high agitation; a good choice for creep-feed grinding where high wheel speeds and high pressure coolant applications combine to cause foam problems.
- Can be used in most machining and grinding operations on a wide variety of metals from aluminum and titanium alloys to steels, stainless steels, Inconel and Hastelloy. This is the ideal product for job shops that expect to handle several metals in a number of machining and grinding operations using a single coolant.
- Good extreme pressure and boundary lubricity extends tool life and promotes better surface finishes, even on abrasive cast aluminum alloys and difficult-to-machine, highly alloyed steels.
- Compatible with most machine tool paints and seals; helps keep machines and parts clean and in good operating condition.
- Easy to dispose of by conventional waste treatment processes; gives an acceptable aqueous phase after splitting and presents no unusual problems in disposal.
- User friendly, with a pleasant, mild odor.

Characteristics

	Unit	Test Method	Value
Appearance of Concentrate	-	CN-TM-074	Yellow Fluid, Slightly Hazy
Appearance of Emulsion	-	CN-TM-074	Milky, Opaque
pH of Concentrate	-	CN-TM-069	8.9 - 9.3
pH of Emulsion	@ 5%	CN-TM-069	9.1-9.7
Specific Gravity	@ 60°F (16°C)	CN-TM-086	0.95 - 0.97
EP Chlorine	-	-	None
Bulk Density	lbs/gal	-	7.99

User advice

Recommended Applications & Dilutions

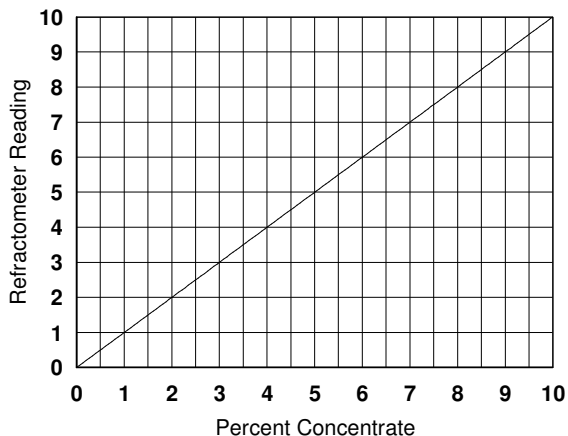
Grinding (including high speed creep-feed grinding): 3%
Turning, milling, drilling, boring: 3 - 5%
Thread cutting, broaching: 5 - 12%

Additional Information

Concentration Control

% Concentrate	Refractometer Reading
3.0	3.0
5.0	5.0
7.0	7.0
10.0	10.0

This chart was prepared with dilutions of distilled water using an Atago Model N1A refractometer. The graph is a linear regression of actual readings from laboratory tests. It is important to realize that refractometer readings are dependent upon the type of refractometer and water used. Atago Model N1A refractometers are available through Castrol Industrial North America Inc.



Castrol WE3-046C
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