



CHEMPOL 5103

Water Soluble Cutting Fluid Additive

PRODUCT DESCRIPTION

CHEMPOL 5103 has been formulated to meet the requirements for the preparation of soluble oils from paraffinic and naphthenic base oils, which will give stable milky emulsions in all types of water. It is also suitable as the base for the preparation of translucent semi-synthetic micro-emulsions and also heavy-duty EP emulsions.

It is a blend of emulsifying agents, wetting agents, and rust inhibitors, together with solvent refined mineral oils. It also contains biocides and fungicide additives to give the finished soluble oils and long service life, prevent emulsion breakdown and spoilage. It is an extremely versatile product for medium-cutting operations, provides all the lubrication and cooling properties necessary to ensure good work piece finish, and extended tool life. It is suitable on ferrous and non-ferrous metals in turning, milling, drilling, tapping, threading and cold sawing operations.

PRODUCT CHARACTERISTICS

Item	Index	Typical Value	Test Method
Appearance	Dark Brown Viscous Liquid	Dark Brown Viscous Liquid	Visual
Density (15°C), kg/m ³	950-990	980	ASTM D4052
VISCOSITY @40°C, mm ² /s	200-300	230	ASTM D445
TAN mg KOH/gm	30-40	38	ASTM D664
PH OF THE EMULSION IN D. WATER	8-9.5	8.7	ASTM D1293

For improved emulsion stability the concentrate can be adjusted for the base oil used by addition of more acid (Olein, Tall oil Distillate) or by more alkali (Triethanolamine, Potassium Hydroxide).

Soluble oil formulations based on CHEMPOL 5103:

Typical opaque soluble oil formulations

A treat rate of 15-20 % wt in paraffinic base oils yields a concentrate, which forms stable emulsions (5%) in medium hard water. The addition of biocide is recommended.

Suggested minimum treatment levels of CHEMPOL 5103 in base oil:

150 SUS Paraffinic Oil: from 15 % w/w
 100 SUS Paraffinic Oil: from 17 % w/w
 100 SUS Naphthenic Oil: from 15 % w/w

Semi-synthetic formulation

CHEMPOL 5103 50% w/w
 100 SUS Naphthenic oil 48% w/w
 Triethanolamine 2% w/w

Emulsion Characteristics

Appearance Transparent
 Corrosion test IP.287 50:1 Pass

EP Soluble oil formulation

CHEMPOL 5103 40% w/w
 100 SUS Naphthenic oil 50% w/w
 Chlorinated paraffin 10% w/w

Emulsion Characteristics

Corrosion test IP.287 20:1 Pass

PACKING, STORAGE AND TRANSPORTATION

Please refer MSDS of this product when storing, shipping, handling and using this product. It is nonflammable, non-explosive and non-corrosive. The highest storage temperature shall not exceed 75°C. For long term storage, the highest temperature shall not more than 45°C. For product details of safety, health and environmental precautions, please refer to the MSDS of this product.