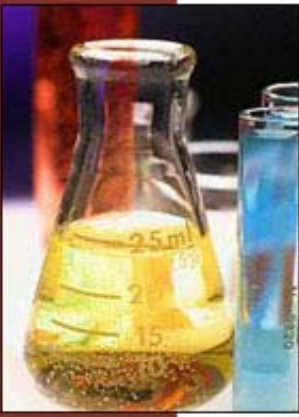


SuperSol 684 Cutting Coolant



SUPER SOL 684 was developed to provide ONE product that can be used for practically all machining and grinding operations. It is designed for cutting and grinding operations on a wide variety of difficult machining alloys. This is possible due to a unique blend of extreme pressure additives, lubricity additives, and emulsifiers. Emulsions of **SUPER SOL 684** have excellent cooling, wetting and low tool wear capabilities. It has proven itself to be the most economical cutting fluid available, in terms of lowest machining cost per part. This takes into consideration the tool life and life of the coolant.

ADVANTAGES

Versatile Performance: SUPER SOL 684 is designed to machine or grind ferrous and nonferrous metals. It contains special inhibitors and lubricity agents to give good finish on soft metals such as aluminum alloys and also provides outstanding tool life on tough stainless steel alloys.

Long Life: SUPER SOL 684 contains a safe NON-PHENOLIC preservative that prevents rancidity or bacteria spoilage. Make-up is added as required and the emulsion can be operated for long periods without dumping.

Clean Performance: SUPER SOL 684 contains a specially built-in cleaning action that prevents dirt and chips from building up. The residue is fluid and has excellent lubrication value to prevent sticky ways, slides, indexing heads and compound rests. Machines stay clean and productive.

Improved Tool Life: SUPER SOL 684 contains a special blend of Extreme Pressure and lubricity additives that combine to provide lower operating temperatures and longer tool life.

Corrosion Inhibition: SUPER SOL 684 is balanced with a special inhibitor system to prevent rusting of ferrous alloys and machines, even at high dilutions of 50/1 and 60/1. It also protects aluminum and copper alloys from staining when traces of the emulsion remain on the work.

PHYSICAL PROPERTIES

Color and Form	- Dark Green Liquid
Specific Gravity @ 60° F.	- .967
Weight per Gallon, lb.	- 8.06
Odor	- Mild
Flash Point, C.O.C. ° F.	- 335
pH 2.5% Concentration	- 9.5
5.0% Concentration	- 9.7

Falex E.P. Test **10/1 Dilution – Weld Load, lbs. – 4350**
20/1 Dilution – Weld Load, lbs. – 4400

Falex Wear Test
 (1/2 hr. @ 500 lbs – Pin Wt. loss, mfg.)
10/1 Dilution – 1.2.
20/1/ Dilution – 3.0 mg.

SUGGESTED STARTING DILUTION FOR VARIOUS MACHINING OPERATIONS

<u>Machining Operation</u>	<u>High Speed Steel Tool</u>	<u>Carbide Tool</u>
Turning	20/1	30/1
Boring	20/1	30/1
Planing	20/1	30/1
Face Milling	20/1	30/1
Slab Milling	20/1	30/1
End Milling	20/1	30/1
Metal Slitting	20/1	30/1
Drilling	20/1	30/1
Broaching	10/1	10/1
Trepanning	20/1	30/1
Tapping	5/1	----
Reaming	5/1	5/1
Power Sawing	10/1	----
Circular Sawing	10/1	10/1
Gear Hobbing	10/1	----
Gear Cutting	10/1	----
Gear Shaping	10/1	----
Gear Shaving	10/1	----

SUGGESTED STARTING DILUTIONS FOR VARIOUS GRINDING OPERATIONS

<u>Grinding Operation</u>	<u>Recommended Dilution</u>
Surface Grinding	50/1
Cylindrical Grinding	30/1
Internal Grinding	30/1
Centerless Grinding	30/1

Make-up dilutions can generally be at a higher ration due to water evaporation. A periodic check of dilution concentration should be made and the make-up dilution added accordingly. A guide to determining dilution strength with a REFRACTOMETER is given in the handy chart below.

<u>DILUTION</u>	<u>PERCENT EMULSION</u>	<u>REFRACTOMETER READING</u>
4/1	25.0	25
5/1	20.0	20
6/1	16.7	16.5
7/1	14.3	14.4
8/1	12.5	12.5
9/1	11.1	11.25
10/1	10.0	10.0
15/1	6.67	6.7
20/1	5.0	5.0
30/1	3.33	3.3
40/1	2.50	2.5
50/1	2.0	2.0
60/1	1.67	1.7
70/1	1.43	1.4
80/1	1.25	1.25
90/1	1.11	1.1
100/1	1.0	1.0

