

## Hard Cut® Oils

*Straight Cutting Oil*

### 5318 / 5418 / 5518

#### GENERAL DESCRIPTION

The Hard Cut "8" series represents the third generation of performance above the traditional Hard Cut oils. The "8" signifies a two fold increase of the synthetic fraction in the product. The Hard Cuts are the first choice by the aerospace, electronic and medical industries, especially in Swiss style screw machines.

The Hard Cut "8" series is highly recommended for use on stainless steels, hardened steels, high nickel alloys, titanium and aircraft aluminums. The Hard Cuts are formulated in various viscosities and with various levels of Extreme Pressure (EP) additives. High quality raw materials help provide for both an operator friendly and environmentally compliant product. Reduced smoke, cleaner machines, low odor and non-irritating are just some of the benefits. As with all of Hangsterfer's Hard Cuts, they are non-toxic and non-corrosive.

#### APPLICATION

**5318** - The ultimate in lubricity of this series. Hard Cut 5318 is an advanced version of Hangsterfer's original screw machine oil, Hard Cut 31. This oil is excellent for heavy duty cutting operations, including hobbing, broaching, drilling, tapping and threading. Optimum stock size in bar fed application is 0.500" (12.65mm) or larger.

**5418** - This popular general purpose oil is excellent for a wide range of operations, including turning and milling. It provides ample lubricity for extreme metal removal, while being low enough in viscosity to cool during high speed turning and milling applications. Optimum stock size in bar fed applications is 0.500" (12.65 mm) to 0.125" (3.15 mm).

**5518** - This oil offers excellent results in high speed turning of small diameter parts (0.125" (3.15mm) and under), gundrilling and deep hole drilling. Its low viscosity helps the oil penetrate the tool-workpiece interface in very small component manufacturing.

#### MAINTENANCE

While straight cutting oils are not susceptible to the broad range of problems encountered with a water based fluid, regular maintenance does improve their performance and extend their life. The Hard Cut oils are designed to reject foreign contaminants, such as metal fines. If the performance of the oil begins to deteriorate, remove the oil from the machine and allow to settle in an empty drum or settling tank for 3-7 days. Fines and contaminants will settle to the bottom. After settling, return the top 80% to the clean machine. In order to get the maximum life from your oil, keep the sump free of cleaners, solvents, rust inhibitors, coolants and other contaminants which may inhibit performance.

## CLEANING

All Hard Cut oils are formulated to minimize cleaning time. They are cleanable in both aqueous and solvent systems. For best results use a Hangsterfer's Ozonic series cleaner or recommended aqueous cleaner. Both style cleaners work best at removing Hard Cuts when heated to 140°F (60°C).

<b>Product Characteristics</b>			
<b>Hard Cut</b>	<b>5318</b>	<b>5418</b>	<b>5518</b>
Form	Liquid	Liquid	Liquid
Color	Red	Red	Red
Odor	Bland	Bland	Bland
Specific Gravity	0.96	0.93	0.91
Viscosity: SUS @ 100°F	210	159	90
cSt @ 40°C	45	34	18
Flash Point, COC, °F/°C	370 / 187	350 / 176	250 / 121
Fire Point, COC, °F/°C	380 / 193	370 / 187	260 / 126
Pour Point, °F/°C	0 / -18	0 / -18	0 / -18
Solubility in Water	<0.01%	<0.01%	<0.01%
Boiling Point, °F/°C	400 / 204	440 / 226	420 / 215
Vapor Pressure, mm Hg @ 25°	<0.01	<0.01	<0.01
pH @ 10%	Not Applicable	Not Applicable	Not Applicable
Sulfur, Active	0.0%	0.0%	0.0%
*Chlorine	8%	4%	4%
Phosphorus	0.0%	0.0%	0.0%
Solvent Content	0.0%	0.0%	0.0%
Solids Content	0.0%	0.0%	0.0%
Heavy Metals	0.0%	0.0%	0.0%
Silicone	0.0%	0.0%	0.0%

\*Hangsterfer's uses only non-hazardous, chemically bound, long chain chlorinated paraffin.

## SHIPPING UNITS

All Hangsterfer's products are available in 5 gallon, 55 gallon and Intermediate Bulk Containers (260 or 330 gallons). All products are distributed worldwide.

Revised 08/01/01

The general description, recommended uses, application data and statements in the product literature are guidelines. Because this product may be used for a variety of applications over which Hangsterfer's Laboratories, Inc. has no control, Hangsterfer's Laboratories, Inc. assumes no liability for incidental, consequential, or direct damages of any kind, regardless of causes, including negligence.