

Hard-Cut® 5318 / 5418 / 5518 *Straight Cutting Oils*

FEATURES

- High Content of Extreme Pressure Additive
- Maximizes Productivity
- Maximizes Speeds and Feeds
- Maximizes Tool Life
- Non-Hazardous
- Non-Toxic
- Solvent Free
- Wide Variety of Viscosities

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.

APPLICATIONS

| Primary | | | Secondary | |
|---------------|--------------|----------|------------|----------|
| Broaching | Gear Cutting | Sawing | Burnishing | Honing |
| Cutting | Gun Drilling | Stamping | Coining | Punching |
| Drilling | Milling | Tapping | Drawing | Shaving |
| Fine Blanking | Reaming | Turning | Forming | Swedging |

MATERIALS

| Primary | | Secondary | |
|------------------|-------------------------|--------------------------|-----------------|
| Aluminum | High Temperature Alloys | Bronze | Magnesium |
| Armor Plate | Nickel Alloys | Iron, Cast Iron, Ductile | Plastic |
| Brass, Lead Free | Stainless Steel | Ceramics | Powdered Metals |
| Chromium Alloys | Titanium | Copper | Tungstem |

INSTRUCTIONS

Hard-Cut 8 series is normally used where any cutting oil is used as is and on most materials. The wide range of viscosity allows use as a bar feed oil to eliminate contamination of the cutting oil. The Ozonics 203 or VS-315 is recommended to clean Hard-Cut 8 series at the machine in process or as a final utility clean. The Ozoincs and VS product can be mixed back in to the Hard-Cut products as they become saturated. Please see the Ozoincs and VS brochures for the recommended procedures. The Hard Cut 8 series is also used to thin the Aldraw products.

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MAINTENANCE & CLEANING

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).

PRODUCT CHARACTERISTICS

| Product: | Hard-Cut 5318 | Hard-Cut 5418 | Hard-Cut 5518 |
|-------------------------------|----------------------|----------------------|----------------------|
| Form | Liquid | Liquid | Liquid |
| Color | Red | Red | Red |
| Odor | Mild | Mild | Mild |
| 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 | 369 / 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% | N/A | N/A | N/A |
| Chlorine | Added as EP Additive | Added as EP Additive | Added as EP Additive |

WASTE TREATMENT

Dispose of in accordance with local, state, federal and international laws. As with most used oils, they can be re-refined or used in energy recovery systems.

SHIPPING UNITS

All Hangsterfer's products are available in 5 gallon, 55 gallon and Intermediate Bulk Containers (275 or 330 gallons). All products are distributed worldwide.

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Disclaimer: All reasonable care has been taken to ensure that the information contained in this publication is true and accurate. No warranty is expressed or implied regarding the accuracy of the data. 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. Also, seller is not liable for any loss, damage or liability resulting from the use of the product in the buyer's manufacturing processes or in combination with other substances. SDS's are available for all Hangsterfer's products and should be consulted as needed.

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