

PC 10 / 20 (22) / 28 / 45 *Very High Flash Point Cutting Oils*

FEATURES

- Very High Flash Point Chemistry
- Polar Cutting Technology
- Chlorine and Hydrocarbon Free
- Non-Irritating and Non-Toxic
- Speeds and Feeds are Maximized
- Especially Suited for Diamond and Ceramic Tools
- Renewable Green Chemistry
- Excellent Oxidation Stability

GENERAL DESCRIPTION

Hangsterfer's PC series is based advanced Very High Flash Point (VHF) chemistry and Polar Cutting (PC) Technology. The combination of VHF Chemistry and PC Technology takes the metal working process to new heights. As speeds and feeds are maximized, the temperature in the work piece zone is ever increasing. As a result, the VHF characteristics are well sought after because of their higher flash point. The PC series not only lubricates the tool, but equally lubricates the metal being cut, creating metal flow conditions that were previously unattainable with traditional technologies. PC's unique cutting benefits are well suited to support a wide verity of applications from high pressure through the drill to precision grinding operations where a vegetable type product may be desired.

APPLICATIONS

Primary		Secondary	
Cutting	Reaming	Broaching	Sawing
Drilling	Thread Cutting	Centerless Grinding	Shaving
Gun Drilling	Thread Forming	Creep Feed Grinding	Stamping
Honing	Turning	Gear Cutting	Surface Grinding

MATERIALS

Primary		Secondary	
Aluminum	Nickel	Carbide	Magnesium
Brass	Stainless Steel	Cast Iron	Molybdenum
Chromium	Steel	Ceramics	Powdered Metals
Copper	Titanium	Composites	Precious Metals

INSTRUCTIONS

Use PC's neat. The PC series is used straight out of the drum. To determine which PC product best suited for the application consult a Hangsterfer's representative. PC series are suited for machining ferrous and non-ferrous materials where chlorine additives are restricted. This series provides excellent lubricity and is non-staining with rust protection. This series also provides excellent surface finish quality for most materials. The superior lubricity and chemical composition is perfectly matched for all tools including non-traditional tool materials. The PC series technology will optimize your Diamond and Ceramic tooling, often increasing tool life by more than 200%!

MAINTENANCE & CLEANING

Maintenance: While straight cutting oils are not susceptible to the broad range of problems that can occur with a water-based fluid, regular maintenance does improve their performance and extend their life. The PC series is 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 it 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: The PC series is formulated to minimize cleaning time. They are cleanable in both aqueous and solvent systems. For best results use a Hangsterfer's VS series, Ozonic series cleaner or recommended aqueous cleaner. Consult Hangsterfer's brochures for proper procedures and recommendations. Due to the fact that PC series is often considered biodegradable it might not need to be cleaned off the part at all!

PRODUCT CHARACTERISTICS

Product Name	PC 10	PC 20 (22)	PC 28	PC 45
Form	Liquid	Liquid	Liquid	Liquid
Color	Golden	Golden	Golden	Golden
Odor	Mild	Mild	Mild	Mild
Specific Gravity	0.88	0.88	0.89	0.93
Viscosity: SUS @ 100°F	59	104	132	214
cSt @ 40°C	11	20	28	46
Flash Point, COC, °F/°C	430 / 221	338 / 170	369 / 187	442 / 228
Fire Point, COC, °F/°C	470 / 243	372 / 189	379 / 193	487 / 253
Pour Point, °F/°C	5 / -15	5 / -15	5 / -15	5 / -15
Solubility in Water	<0.01	<0.01	<0.01	<0.01
Boiling Point, °F/°C	482 / 250	392 / 200	392 / 200	487 / 253
Vapor Pressure, mm Hg @ 25°	< 0.01	<0.01	<0.01	<0.01
Chlorine	None	None	None	None

WASTE TREATMENT

If disposal is required, dispose of in accordance with federal, state and local regulations. Non-Petro Hydrocarbon disposal may be available, such as bio-fuel use.

SHIPPING UNITS

All Hangsterfer's products are available in pails, drums and Intermediate Bulk Containers (Totes)

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. MSDS's are available for all Hangsterfer's products and should be consulted as needed.

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