HANGSTERFER'S®

Research, Development & Manufacturing of Metalworking Lubricants

Crystal Cut® 465 (*Synthetic Coolant Concentrate)*

FEATURES

- No Free Amines
- Excellent corrosion protection
- Excellent for ferrous and most non-ferrous materials
- Extended sump life
- GHS pictogram free
- High pressure capable with low-foam
- Long lasting bio-resistant
- Lower consumption
- Mild on paint and skin
- Oil rejecting

GENERAL DESCRIPTION

A product is only as strong as its weakest point and **Crystal Cut 465** has no weak points.

Crystal Cut 465 contains a new unique chain link synthetic technology, which provides a variety of physical and chemical protection over a broad range of conditions. **Crystal Cut 465** contains time tested technology combined with the latest molecularly modified components resulting in excellent lubricity and corrosion protection without compromise to health, safety and environmental concerns.

APPLICATIONS

Primary			**Secondary**
Diamond Tip Tooling	Hard Turning	Reaming	Shaving
Drilling	Micro Tooling	Turning	Swedging
Grinding	Milling	Stamping	Tool Grinding

MATERIALS

Primary		**Secondary**	
Ceramics	Powdered Metals	Aluminum Alloys	Glass
Chromium Alloys	Refractory Metals	Composites	Plastics
High Temperature Alloys	Steels & Stainless Steels	Copper Alloys	Precious Metals
Nickel Alloys	Titanium	Ductile and Cast Iron	

INSTRUCTIONS

Always premix coolant before adding to the machine sump. When mixing coolant by hand it is important to always add the concentrate to the water and then agitate. For best results, a Hangsterfer's recommended proportioning unit should be used. To maintain recommended concentration, make-up should be added at one-half the desired concentration. Always check concentration with a Refractometer. To maintain 6%: first charge the machine at 6%, then, as needed, add make-up as much as 3%. Avoid adding straight water or concentrate directly to the machine. For best results use DI or RO treated water.

OPERATION	*CONCENTRATION*		
	%	***Ratio*** Concentrate: Water	***Refractometer***
General Cutting	5% - 10%	1:20 - 1:10	2.9 - 5.7
Severe Cutting	10% - 20%	1:10 - 1:5	5.7 - 11.4
General Grinding	2.5% - 5%	1:40 - 1:20	1.4 - 2.9
General Deformation	2.5% - 10%	1:40 - 1:10	1.4 - 5.7
Severe Deformation	10% - 20%	1:10 - 1:5	5.7 - 11.4

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MAINTENANCE

Crystal Cut 465 is a biostable coolant, designed to control the growth of bacteria. Regular maintenance is required for maximum performance. Concentration should be monitored regularly with a calibrated refractometer. Tramp oils should be removed from the coolant surface regularly to prevent unwanted bacterial growth. Keep the coolant system free of cleaners, solvents and other contaminants.

PRODUCT CHARACTERISTICS

Product Name: Crystal Cut 465		**Concentration Dilution Table**		
Form	Liquid	**%**	**Ratio**	**Refractometer**
Color	Colorless	20%	1 : 5	11.4
Odor	Mild	15%	1 : 7	8.6
Specific Gravity	1.05 -1.08	10%	1 : 10	5.7
Viscosity: SUS @ 100°F	73 - 94	7.5%	1 : 13	4.3
cSt @ 40°C	14 - 19	5%	1 : 20	2.9
Flash Point, COC, °F/°C	Non-Flammable	4%	1 : 25	2.3
Fire Point, COC, °F/°C	N/A	3%	1 : 33	1.7
Pour Point, °F/°C	32 / 0	2.5%	1 : 40	1.4
Solubility in Water	100%	2%	1 : 50	1.1
Boiling Point, °F/°C	212 / 100	1%	1 : 100	0.6
Vapor Pressure, mm Hg @ 25°	< 1.0	**Refractive Index Multiplier = 1.75**		
pH @ 10%	9.1 - 9.4			

WASTE TREATMENT

Dispose of in accordance with local, state, federal and international laws. If and when it is necessary to dispose of waste fluids, the amount of waste can be greatly reduced by separating the water from the oil and contaminants which accumulate through normal machining. You can often reduce your waste disposal by more than 80% through conventional methods such as Ultra-Filtration, Chemical Treatment or Evaporation. After approval by your local, state, or federal authorities, the waste water may be sent to the sewer or discharged into waters, and the separated oils may be removed for recycling, sale or disposal.

SHIPPING UNITS

All Hangsterfer's products are available in pails, drums and Intermediate Bulk Containers (275 gallons). All products are distributed worldwide.

Date: 24 June 2008 Revised: 12 July 2023