



Hydrokool™ SS

Phillips 66® Hydrokool SS is a premium quality, water-soluble, semi-synthetic coolant developed for general-purpose turning, milling and grinding of steel and high-speed steel alloys. It offers the ease of maintenance found in synthetic coolants plus the economy found in conventional soluble oils.

Hydrokool SS mixes with soft or hard water to form a high-quality, semi-synthetic metalworking fluid that provides excellent cooling properties and lubricity for maximum tool life and good surface finishes on the machined parts. It contains a biocide to combat the growth of harmful microorganisms in machine sumps and reservoirs.

Hydrokool SS is formulated to provide an optimum balance of lubricity and detergency for high-quality finishes on machined parts and for overall machine cleanliness. It is ideal for use in machine sumps as well as in once-through applications because it is highly resistant to microbial and bacterial degradation that causes rancid odors. It forms a clear, golden-colored solution that permits easy observation of the machining operation. An oiliness agent helps to minimize tool wear and prevent particle agglomeration. Special inhibitors help protect metal surfaces against rust and corrosion.

Hydrokool SS does not contain chlorine, active sulfur, nitrites, phenols, or diethanolamine (DEA).

Applications

Hydrokool SS is recommended for general-purpose machining and grinding of ferrous metals and metal alloys, with water hardness up to 350 ppm. Typical applications include:

- Broaching (light-duty)
- Drilling
- Grinding
- Milling
- Reaming
- Sawing
- Tapping
- Turning

Features/Benefits

- Excellent cooling and lubricating properties
- Helps extend cutting tool life
- Reduces grinding wheel wear
- Good surface finish
- Excellent rust protection
- Non-corrosive to non-ferrous metals
- Resists bacterial degradation
- Transparent for good visibility of the machining operation
- Mixes easily with water⁽¹⁾

⁽¹⁾ **Note:** When mixing, always add Hydrokool™ SS to water; never add water to Hydrokool™ SS. Typical concentrations (Hydrokool™ SS in water) range from 3% to 6% depending on the machining operation, type of metal, and water hardness. Coolant concentration may be monitored with a refractometer.

Premium Semi-Synthetic Coolant for Metalworking





Hydrokool™ SS

Typical Properties	
Specific Gravity @ 60°F	1.05
Density, lbs/gal @ 60°F	8.74
Color, ASTM D1500	2.5
Boiling Point, °C (°F)	100 (212)
Flash Point (COC), °C (°F)	N/A ⁽²⁾
Freezing Point, °C (°F)	0 (32)
pH, 5% (1:20) dilution	9.5
Water, wt %	33
Chlorine, wt %	Nil
Fatty Oil, wt %	4.0
Sulfur, Total, wt %	2.2
Sulfur, Active, wt %	Nil

⁽²⁾**Note:** This product does not support combustion.

Recommended Concentrations, Hydrokool™ SS in Water (Volume %)			
Operation	Carbon Steels, Malleable Iron, Cast Iron	High Alloy Steels	Tool Steel
Drilling, Milling, Turning	4-5	4-5	4-5
Light-Duty Broaching, Form Milling, Reaming, Sawing, Tapping	4-6	5-6	5-6
Grinding	3-4	3-4	3-4

Refractometer Reading					
Dilution Ratio	1:10	1:15	1:20	1:25	1:30
Reading	10.3	7.2	5.4	4.6	3.0

Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/EN/products/Pages/MSDS.aspx>.