



Synkool® SS

Synkool 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.

Synkool 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.

Synkool 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.

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

Applications

Synkool 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
- Noncorrosive to non-ferrous metals

**Premium
Semi-Synthetic
Coolant For
Metalworking**

CONTACT INFORMATION

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- Resists bacterial degradation
- Transparent for good visibility of the machining operation
- Mixes easily with water⁽¹⁾

⁽¹⁾ **Note:** When mixing, always add Synkool SS to water; never add water to Synkool SS. Typical concentrations (Synkool SS in water) range from 3% to 8% depending on the machining operation, type of metal and water hardness. Coolant concentration may be monitored with a refractometer.

Synkool® 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, Synkool® 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 and Safety Information

For recommendations on safe handling and use of this product, please refer to the Material Safety Data Sheet via <http://w3apps.phillips66.com/NetMSDS>.

Typical properties are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.

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