

SPIRIT 990 S



METALWORKING



TOTAL

Heavy-Duty, Semi-Synthetic, Micro-Emulsion for Ferrous & Non-Ferrous Metals.

APPLICATIONS

- **SPIRIT 990 S** is a premium, high performance, semi-synthetic metalworking fluid for heavy duty machining and grinding of all metals including automotive and aerospace alloys.
- **SPIRIT 990 S** is formulated with a unique additive package which enhances the machinability of the product while also offering exceptional biological control.
- **SPIRIT 990 S** is used on all cutting operations on all ferrous and non-ferrous metals. It will not stain aluminum or copper.

ADVANTAGES

- Excellent corrosion protection.
- Excellent sump life.
- Excellent lubricity properties--Increases the tool life on a large scale of cutting parameters maintaining an additive layer on the chip / workpiece / tool surface.
- Non-foaming, non-toxic, non-irritating and non-staining.
- Contains no sulfur or chlorine.
- Permits operator surveillance of the workpiece at all times.
- Splits out tramp oil quickly.
- Resistant to microbiological growth.
- Safe and mild.
- Excellent for recycling.

TYPICAL CHARACTERISTICS	SPIRIT 990 S
Appearance	Amber Liquid
Density @ 60 °F, lbs./gal.	8.00
Specific Gravity @ 60/60 °F	0.959
Flash Point, COC, °F	None
Copper Strip Corrosion	1A - 1B
Sulfur, %wt.	None
Chlorine, %wt.	None
pH @ 10%	9.3
Residue	Liquid Film
Metal Compatibility	All Metals
Refractive Index Factor	1.08

Standard dilution of water to oil is 20:1. May be mixed satisfactorily from 10:1 to 20:1 depending on the type and severity of the operation. For grinding operations, 20 to 25 parts water to 1 part **SPIRIT 990 S** is recommended. The concentration should be adjusted as necessary to maximize performance.

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