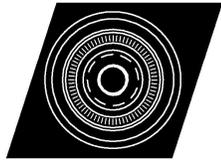


# SPIRIT BIO 3300



Metalworking



**TOTAL**

## Heavy-Duty, Micro-Emulsion for Aluminum Alloys

### APPLICATIONS

- **SPIRIT BIO 3300** represents a technology breakthrough in the development of semi-synthetic metalworking fluids. It is recommended for the machining of aluminum alloys including aerospace aluminum.
- **SPIRIT BIO 3300** is also suitable for some ferrous and non-ferrous alloys.
- The outstanding performance characteristics of this micro-emulsion are obtained through a blend of mineral oil and synthetic esters.
- The concentration range is 6 to 12% and should be adjusted as necessary to maximize performance.

### ADVANTAGES

- Easily forms a translucent micro-emulsion in all types of water
- Designed specifically for aluminum alloys including aerospace aluminum
- Suitable for medium to heavy-duty metal removal operations
- Bio-stable - provides long coolant sump life without unpleasant odor
- No additive top-treats necessary
- Contains no chlorine or sulfur
- Allows for cleaner machines and environment
- Greater operator acceptance
- Formula provides for rapid cooling of work piece and tool
- Will not stain aluminum
- Low foaming tendency, no tankside treatments of antifoam
- Rapid tramp oil rejection
- Consistent and reliable formulation
- Low misting tendency

| TYPICAL CHARACTERISTICS                | SPIRIT BIO 3300          |
|--|--------------------------|
| Appearance                             | Clear Amber Liquid       |
| Odor                                   | Very Low Odor            |
| Specific gravity @ 15.6 / 15.6 (conc.) | 0.96                     |
| Density @ 60 F, lbs/gal                | 8.01                     |
| Chlorine and sulfur content            | Nil                      |
| pH @ 5 %                               | 9.1                      |
| Emulsion stability @ 5%                | Stable                   |
| Foam break @ 5%, mixer method, sec.    | 5                        |
| Cast iron chip rust break point, %     | 3                        |
| Refractive Index, Factor               | 1.32                     |
| Emulsion @ 5% fresh dilution           | Translucent Amber Liquid |

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