



CITGO CITCOOL® 33

Date 03/18

DESCRIPTION: CITGO CITCOOL 33 is a heavy-duty synthetic coolant designed to be diluted in water to the proper concentrations to afford excellent operations in high-performance machining.

- FEATURES:**
- Balanced lubricity and boundary lubrication components
 - Readily soluble in water
 - Oil free
 - Distinct transparent green
 - Fully synthetic
 - Contains effective bactericide and fungicide
 - Rejects tramp oil

- BENEFITS:**
- Improves tool life and surface finish with enhanced EP and wear protection
 - Easy mixing and clean up, and improved solution stability even in harder water
 - Odor and rancidity free, no gummy residues, and eliminates oil mists in the workplace
 - Good work piece visibility
 - Superior heat transfer to improve tool life and part tolerances
 - Inhibits initial bacterial and fungal growth in service
 - Tramp oils are readily removed; eliminating a source for bacteria and fungus to grow, resulting in no rancid odors and extending sump life



Concentrate Diluted with Water

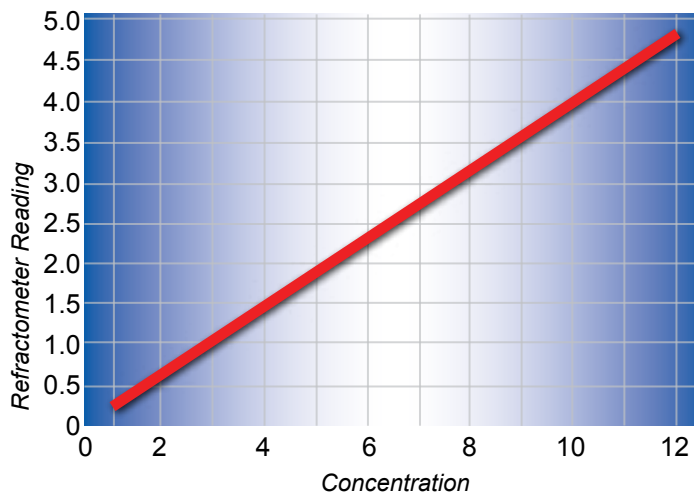
APPLICATIONS: CITGO CITCOOL 33 is designed primarily for use in machining titanium, ferrous metals, and their alloys, and stainless steel. It is non-corrosive to brass and copper so also recommended for these metals.

Material Compatibility



*Not recommended for aluminum, magnesium and their alloys due to possible staining.

Refractometer Chart



Refractometer Reading at 10% = 3.9 °Brix
 Refractometer Factor = 2.56

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TYPICAL PROPERTIES - CITGO CITCOOL® 33

| | |
|---|-----------------------------|
| Material Code | 639333001 |
| Appearance, Concentrate (neat) | Clear, Green |
| Dilution (5% in DI water) | Clear, Green ⁽¹⁾ |
| Gravity, Specific, ASTM D1298, 60/60°F | 1.07 |
| Density, lb/gal | 8.9 |
| Viscosity, ASTM D445, cSt at 40°C | 3.7 |
| ASTM D2161, SUS at 100°F | 17 |
| pH, Concentrate | 9.5 |
| Falex Load, 5% in tap water, ASTM D3233, lbs. | 4500 |
| Rust Test, 3% in tap water, ASTM D4627 | Pass |
| Solution Stability (5%), 24 hrs. at 30°F | No Separation |
| Copper Corrosion (5%), 3 hrs. at 122°F, ASTM D130 | 1B |
| Foam Test, ASTM D892, Seq. I | 90-0 |
| Seq. II | 10-0 |
| Seq. III | 20-0 |

Note: 1) Dilute solutions can be hazy if tap water is used depending upon water hardness.

STORAGE, HANDLING AND SPECIAL CONSIDERATIONS:
Preferred storage is indoors away from sun and heat. Do not allow to freeze. Under long term storage, product may discolor.

METAL MACHINABILITY GROUPS⁽¹⁾

| | 1 Non-Ferrous, Soft Metals ⁽²⁾ | 2 Nickel Alloys, Nitalloy Steels, Cast Irons and Alloy Steels (up to 200 Brinell) | 3 Stainless Steels, “Monel” Metals, Cast Irons and Alloy Steels (200 to 300 Brinell) | 4 Titanium Alloys, High Tensile Nickel Alloys, Austenitic Stainless Steels, Tool Steel and High Tensile Alloy Steels (300 to 400 Brinell) |
|---|--|---|--|---|
| Machining Operation | | | | |
| Turning, Boring, Milling, Forming, Drilling, Sawing | 5-7% | 5-7% | 7-9% | 7-9% |
| Tapping, Thread Rolling, Reaming, Screw Cutting, Broaching | 5-7% | 5-7% | 8-10% | 8-10% |
| Gear Shaping, Form and Thread Milling, Shaving, Hobbing, and Trepanning | 5-7% | 5-7% | 8-10% | 8-10% |
| Internal and External Grinding, Form and Thread Grinding | 5-7% | 5-7% | 5-7% | 5-7% |
| Stamping | 10% | 10% | 20% | 20% |

Notes: (1) Dilution ratios shown are approximate and may require higher or lower water concentrations depending on a number of factors including the type of metal cut, machine speed, the severity of the operation, metal hardness, etc.

(2) CITCOOL 33 is not recommended for machining aluminum alloys or magnesium (due to possible staining).

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