

## TECHNICAL DATA SHEET

# CAL-COOL ES 320

*Advanced Technology Machining & Grinding Fluid for Ferrous Applications*

### TECHNOLOGY

**Callington CAL-COOL ES 320** is an advanced technology metalworking fluid with no mineral oil. **CAL-COOL ES 320** is having excellent tramp oil rejecting tendency, tramp oil can cause smoking or misting and premature damage of coolant. **CAL-COOL ES 320** is free of sulphur, chlorine, phosphorous, biocides and other hazardous chemicals that can cause health or environmental problems. The combination of additives and surfactants makes the product outstanding for ferrous machining and keeps the machines and parts clean.

### APPLICATIONS

**Callington CAL-COOL ES 320** is designed for use on ferrous metal cutting operations where long service life is required and suitable for operations like boring, drilling, grinding, milling, sawing, screw cutting, tapping, turning etc. **CAL-COOL ES 320** can be used on cast iron, low and high tensile steel, stainless steel.

**Callington CAL-COOL ES 320** is stable over a wide range of water conditions (0-400ppm hardness), provides excellent corrosion protection and is very clean in use, reducing product usage and maintenance requirements. It is equally suitable for use in large, centralized coolant systems and for small individual coolant sumps.

### FEATURES & BENEFITS

- **Advance Technology fluid**, no mineral oil, no dirty floors
- **Excellent stability and resistance to microbial growth**, providing extremely long fluid life, and reducing fluid and waste treatment costs.
- **The lubricity additive, and oiliness** prevent sticking of collets and frozen bolts.
- **Excellent detergency**, no residues, providing clean operations, clean machining environment.
- **Outstanding tramp oil rejection**, easily removal and providing excellent machine and component cleanliness.
- **Low foaming behaviour** in all water conditions, ensuring continuous machining.
- **Superior rust protection** even in hard water conditions.
- **Mineral oil, sulphur, chlorine, phenol and nitrite free**, operator and environmentally friendly.

### TYPICAL DATA (note: data is typical and does not constitute a specification)

Concentrate	Test Method	Typical Data
Appearance	Visual	Clear, Brown
Density	ASTM D4052	1.06
Solution	Test Method	Typical Data
Appearance	Visual	Transparent, slight whitish
pH @ 5% (v/v)	pH Meter	9.10
Refractometer factor	In house	1.65

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### DIRECTIONS FOR USE (Recommended dilution)

Application	Cast Iron	Alloy Steel
Boring	3.00 – 5.00%	4.00 – 6.00%
Cutting	3.00 – 5.00%	5.00 – 8.00%
Drilling	4.00 – 8.00%	5.00 – 10.00%
Grinding	3.00 – 5.00%	3.00 – 5.00%
Milling	4.00 – 8.00%	5.00 – 8.00%
Sawing	4.00 – 8.00%	5.00 – 8.00%
Turning	3.00 – 5.00%	3.00 – 5.00%
Tapping	4.00 – 8.00%	5.00 – 8.00%

### COOLANT MANAGEMENT

1. Always premix the coolant for top-up. Do not add coolant directly to sump.
2. Coolant shall be added in water in the recommended ratio and shall be mixed thoroughly before top-up.
3. Keep check on water quality, recommended water quality will ensure long sump life and smooth running.
4. Run oil skimmers to remove excess tramp oil from coolant.
5. Ensure chip / swarf conveyors or chips / burr removal system is in working condition, if swarf remains in sump, coolant can turn brown, or it can accelerate corrosion / rust.
6. Circulate coolant and check concentration with a refractometer. Maintain fluid level.
7. Check pH using pH colour sticks (If pH starts to fall, add coolant to bring up concentration. If pH does not stabilize, it is time to replace coolant. If coolant needs to be replaced, dump old coolant, clean machine using tank cleaning procedure)
8. Record data on a machine check sheet. This can be used to determine trends of a particular machine.
9. Check all filters, chip strainers and canister filters.

### ORDERING

200 Litres-Drum and 20 Litres-Pails

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