

## TECHNICAL DATA SHEET

# CAL-COOL ES 414

*Advanced Technology General Purpose Metalworking Fluid*

### DESCRIPTION

**CAL-COOL ES 414** is an advanced technology metalworking fluid free of mineral oil, chlorine, nitrite, phenol, sulphur and hazardous chemicals. The combination of special lubricants makes the product outstanding for general machining of ferrous and non-ferrous materials. **CAL-COOL ES 414** is having superior corrosion protection and cleanliness properties to keep machine parts protected and clean.

### APPLICATION

**CAL-COOL ES 414** offers improved performance in applications where conventional high oil content soluble coolants are often used, providing enhanced machining performance, better cleanliness, and long life. **CAL-COOL ES 414** can be used for grinding and general machining operations on aluminium and ferrous alloys.

**CAL-COOL ES 414** can be used in soft and hard waters [50-400 ppm] and suitable for centralized as well as individual systems with proper monitoring.

### SPECIAL FEATURES

- Mineral oil, Chlorine, phenol, nitrite, secondary amine, heavy metals free makes the product operator and environmental friendly
- Superior lubricity when compared with conventional soluble oils, enhanced tool life
- Exceptional product stability, long coolant life
- Provides lower process costs and machine downtime
- Less drag-out as compared to conventional soluble oil, hence less consumption
- Excellent anti corrosion and anti-stain properties to protect machine tools and components

### HEALTH AND SAFETY

For proper handling and storage, please refer SDS, and share the information to user. For any other information, please contact Callington representative.

The product is available in 200 Liters-Drum and 20 Liters-Pails

### TYPICAL DATA

CONCENTRATE	METHOD	UNITS	TYPICAL VALUES
Appearance	Visual	-	Clear, yellow fluid
Specific Gravity	ASTM D 4052	-	1.060
SOLUTION			
Appearance	Visual	-	Translucent to whitish
pH in use	pH meter	-	8.80
Refractometer Factor	Refractometer	-	1.40

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### RECOMMENDED DILUTIONS

Concentration varies depending on the type of machining operation, the water hardness, and required finish. In general **CAL-COOL ES 414** can be recommended from 5.00% to 15.00% for drilling, milling, sawing, turning, tapping, grinding etc.

The starting concentration can be 8.00—10.00% and it can be optimized slowly by monitoring. It is recommended to map the machine shop before concentration recommendation. The survey form is available with Callington representative.

### CALLINGTON PRODUCTS

Callington's **SYN** and **CAL-COOL ES** series are proven product for use in all metalworking applications.

Apart from above, Callington is having below product range:

**CalGuard DW and DWP** series of Rust Preventives suitable for protection up-to 12 months

**Pro-Clean** series of cleaners suitable for removing different soils from components and meet the Millipore requirement

**Evap-Lube** series of stamping oils

**Eco-Tap Spray** for drilling, tapping, cutting

### COOLANT MANAGEMENT

- Always premix the coolant for top-up. Do not add coolant directly to sump
- Coolant shall be added in water in the recommended ratio and shall be mixed thoroughly before top-up
- Keep check on water quality, recommended water quality will ensure long sump life and smooth running
- Run oil skimmers to remove excess tramp oil from coolant
- 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
- Circulate coolant and check concentration with a refractometer. Maintain fluid level
- 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)
- Record data on a machine check sheet. This can be used to determine trends of a particular machine

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