TOM KENDALL OIL / CSR

canadian super refined petroleums

Product Data Sheet

SUPER SOLUBLE, CITCOOL 33

PREMIUM, WATER SOLUBLE COOLANTS

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Super Soluble and **Citcool 33** are premium, water-soluble synthetic coolants for use in a variety of machining operations.

In service **Super Soluble** and **Citcool 33** offer the following benefits:

- Premium resistance to bacterial and fungal growth for extended coolant life
- Superior protection against corrosion and rust
- Ability to machine at higher speeds
- Excellent cooling and lubricating properties
- Resistance to foaming
- Extended tool life
- Resistance to forming of gummy-tacky residue

Product Applications

Super Soluble is a semi-synthetic formulation that mixes easily with water in all proportions to form a translucent blue solution. As a micro emulsion, it provides for longer emulsion life, improved work piece visibility, and long term stability against tramp oil contamination. **Super Soluble** coolant is very resistant to physical or chemical changes in service, especially to the development of rancidity and odour. It is extremely effective in preventing in-process rust on exposed machine and tool components and work parts. It is especially effective in controlling corrosion on cast, gray, nodular and malleable iron. **Super Soluble** coolant contains non-ferrous inhibitors, which prevent staining on aluminum alloys, brass, copper and bronze. The product is safe, clean and easy to use; it does not leave a slippery or sticky film on dried, machined parts.

Super Soluble coolant can be used economically for general purpose machining and grinding operations of ferrous and non-ferrous metals including carbon/cast steel, cast/nodular/gray iron, stainless and high alloy steels. It can also be used for light to moderate duty applications on copper and aluminum alloys; it cannot be used for machining magnesium. Water/oil dilution ratios between 10:1 and 25:1 can be used to meet the performance requirements for a particular machining operation.

Citcool 33 is a full synthetic product, free of mineral oil, nitrite, phenols, mercurials, PCB's, diethanolamines, chlorine, sulfur and boron compounds. It mixes easily with water in all proportions to form a clear blue solution. **Citcool 33** coolant is formulated with premium lubricity component technology that provides a wide range of machining capabilities - ranging from high-speed machining and grinding to relatively slow-speed broaching, tapping and sawing of most iron and steel alloys including cast iron, carbon and cast steels, tool steels, high alloy and stainless steels.
Water/oil dilution ratios between 10:1 and 30:1 can be used to meet the particular machining performance needs. **Citcool 33** coolant is not recommended for machining copper or aluminum alloys; it cannot be used for machining magnesium.
Citcool 33 coolant use contributes to superior tool life even when compared to straight cutting and soluble oils. High speeds and feeds can be achieved with good part geometry and quality. The product has good general production economics. Low carry-off on parts and chips allows very low makeup. The long product life and good settling and filterability minimize expensive and time consuming recharges. Good Tramp Oil Rejection characteristics and exceptional bacterial and fungal control contribute to long product life, greatly reduced odour problems and infrequent need for biocidal additives.
This product does not leave a slippery or tacky film; any trace residue is easily rinsed off. Machine tools are kept cleaner by the good washing action of this product. The lack of oil mist and general mildness benefits the operator.

Machining Operation

	Ratio of Water to Soluble Fluid	
	Super Soluble	**Citcool 33**
Hobbing, shaping, broaching, pipe threading, multiple point threading & tapping	10:1 to 15:1	10:1 to 20:1
Turning, milling, forming, multiple spindle screw machines, auto lathes & screw machines	15:1 to 25:1	20:1 to 25:1
Drilling & boring; sawing	10:1 to 25:1	10:1 to 25:1
Grinding	15:1 to 25:1	20:1 to 30:1

Preparation and Care of Emulsion

To obtain the best results, the coolant system should be drained, flushed and cleaned to remove all traces of the existing old product before adding these new formulations. **Super Soluble** and **Citcool 33** should never be added as make-up to another coolant system; the products may be incompatible and result in unsatisfactory performance. When preparing dilutions, the concentrate should always be added to the water to prevent the possible formation of an invert emulsion. The effective concentration of dilutions can be checked using a refractometer. Since these formulations contain some water, the products should always be stored indoors during the winter to prevent freezing and separation of the product.

Product Handling and Maintenance

Super Soluble and **Citcool 33** are manufactured from high quality synthetic base stocks and/or high quality petroleum base stocks, carefully blended with selected additives. As with all of our products, good personal hygiene and careful handling should always be practiced. Avoid prolonged contact to skin, splashing into the eyes, ingestion or vapour inhalation. These products contain materials, which are irritating, and may injure eye tissue if not removed promptly. Frequent or prolonged contact may irritate the skin. Please refer to the Material Safety Data Sheet for further information.

When no longer suitable for service, **Super Soluble** and **Citcool 33** should be disposed of through an authorized liquid waste disposal company. They should not be mixed with used petroleum base oils, which are collected and recycled by a re-refiner.
Note: These products are controlled under Canadian WHMIS legislation

Typical Properties

	Super Soluble	**Citcool 33**
Density @ 15ºC, kg./m³	945	1060
Appearance		
Concentrate	Dark Blue	Dark Blue
5% Emulsion	Translucent Blue	Clear Blue
Flash Point, °C	None	None
Freezing Point, °C	-2	-12
pH		
Concentrate	9.6	9.6
5% Emulsion	9.0	9.1
Total Chlorine, wt.%	None	None
Total Sulphur, wt.%	0.26	None

The typical properties shown above are representative of current production. Some are controlled by manufacturing and performance specifications while others are not. All may vary within modest ranges.