

## LA 230 SOLUBLE CUTTING FLUID

### DESCRIPTION

Premium quality Chlorine Free soluble cutting oil designed for light to moderate machining operations including boring, milling, drilling, tapping, threading, broaching, turning, reaming and grinding. LA 230 is a revolutionary, emulsion, cutting and cooling fluid that penetrates rapidly deep into the shear zone of machining operations.

### APPLICATION

LA 230 Soluble Cutting Fluid is suited for cutting of low and medium steels, machining of non-ferrous metals-(brass, bronze, copper), aluminium and alloy, and cast iron.

### EXTENDED TOOL LIFE

Lubrication and cooling is assured between the cutting tool and work surface promoting long tool life and excellent surface finish to the machined surfaces. Prevents metal-to-metal bonding where the "edge" and "sharpness" of tool life is extended due to the high oiliness, low frictional and cooling properties.

### NON HAZARDOUS

LA 230 is non-flammable and will not generate nauseating fumes or odors in normal use. It is non-hazardous by current definition as outlined by The Occupational Safety and Health (OSHA). The product contains no sulphur, chlorine, phenolics, nitrites or lead compounds.

### BACTERIA FORTIFIED

Rust protection is given to steel and ferrous machined metals with emulsion dilutions up to 60:1 water to oil concentrations. A bacteria resistance is imminent by the inclusion of an effective biocide which ensures long service emulsion life, free of bacteriological degradation products which generally result in staining and corrosion of the machined components. It contains proprietary and highly effective inhibitors to prevent rust and corrosion of equipment and tools as well as finished products.

## CLASSIFICATION OF WORKPLACE METALS ACCORDING THEIR MACHINABILITY

Easy machining - High machinability >70%	Medium machining – Medium machinability >50-<70%	Difficult machining – Low machinability <50%
<b>Non-Ferrous</b>	<b>Non-Ferrous</b>	<b>Non-Ferrous</b>
Leaded bronze	High Tensile Bronzes	Nickel
Non Leaded Brasses	Copper	Nickel/Chrome Alloys
Zinc based Alloys	<b>Ferrous</b>	Titanium
Magnesium	Cast Iron	<b>Ferrous</b>
Aluminium	Mild, Low Carbon and unalloyed steels	High carbon and low-alloy steels (Heat treatable steels, construction steels, tool steels)
Aluminium/Silicon Alloys		High carbon and high alloyed steels (Stainless steel, high speed steels, heat resistant alloys)

## APPLICATION AND MIXING RATIO GUIDE

Operation	Aluminium & Alloy	% Percentage	Brass & Bronze	% Percentage	Copper	% Percentage	Iron – Cast Iron*	% Percentage	Mild Steel, low alloy steel, carbon steel	% Percentage
Broaching	20:1	4-5	20:1	4-5	20:1	4-5	20:1	4-5	15:1 – 10:1	5-6
Boring	20:1	4-5	20:1	4-5	20:1	4-5	20:1	4-5	15:1 – 10:1	5-6
Drilling	33:1 – 20:1	3-5	33:1 – 20:1	3-5	33:1 – 20:1	3-5	33:1 – 20:1	3-5	15:1 – 10:1	5-6
Grinding	40:1	2.5	40:1	2.5	40:1	2.5	33:1	3	15:1 – 10:1	5-6
Milling	33:1 – 20:1	3-5	33:1 – 20:1	3-5	33:1 – 20:1	3-5	33:1 – 20:1	3-5	15:1 – 10:1	5-6
Reaming	25:1 – 20:1	4-5	25:1 – 20:1	4-5	25:1 – 20:1	4-5	25:1 – 20:1	4-5	15:1 – 10:1	5-6
Tapping	25:1 – 20:1	4-5	25:1 – 20:1	4-5	25:1 – 20:1	4-5	25:1 – 20:1	4-5	15:1 – 10:1	5-6
Threading	NA		25:1 – 20:1	4-5	25:1 – 20:1	4-5	15:1 – 10:1	5-6	NA	
Turning	33:1 – 20:1	3-5	33:1 – 20:1	3-5	33:1 – 20:1	3-5	33:1 – 20:1	3-5	15:1 – 10:1	5-6

\* Iron is a pure metal, existing as a single element whereas cast iron is alloyed iron which is iron alloyed with elements such as carbon or silicon.

**‘When making an emulsion, always add oil to water. Never add water to oil.’**

Emulsion stability 250 – 600ppm Ca CO<sup>3</sup> expressed as hard water.

## SAFETY

LA 230 is non-irritating to skin as it has a very low toxicity. However, the use of protection gloves and barrier cream is recommended when used over long periods as a straight coolant.

## PHYSICAL CHARACTERISTICS

TEST DESCRIPTION	ASTM	TEST RESULT
Description	Visual	Amber
Viscosity, cSt @ 40°C	D-445	51
Viscosity, cSt @ 100°C	D-445	7.75
Density @ 15°C, kg/L	D-4052	0.848

*Typical formulation specifications at time of production, minor variations may occur.*

**Health and Safety:** This product is not expected to cause health concerns when used for the intended application and according to the recommendations in the Material Safety Data Sheet (MSDS).