



*Formulations for Today's
Technical Manufacturing Needs*

ASTRO-SOL ES

Meeting today's machining demands and preparing you for tomorrow's safety legislation.

ASTRO-SOL ES is a new generation water soluble metalworking fluid providing outstanding cutting performance and lubricity and can be used in all types of manufacturing applications. The performance additives incorporated into the fluid provides outstanding surface finish on all types of aluminium and exotic alloys as well as steels. The unique formulation prevents scum and soap formation associated with more reactive materials.

Background

Setting New Standards in Aqueous Machining

New Safety Standards; A machining fluid taking safety standards to a new level. **ASTRO-SOL ES** is mineral oil, formaldehyde and boron free.

Outstanding Performance; Whilst the diluted concentrate appears that of a milky emulsion the machining performance is outstanding across a full range of ferrous and non-ferrous materials and providing a Reichert result of 12.

Surface Finish; The surface finish and machine cleanliness provided by the fluid is excellent ensuring machine tools remain clean and in peak condition.

Aviation Standards; **ASTRO-SOL ES** meets key aviation test specifications including Rolls Royce RPS917/RRP59000.

Water Conditions; The unique Safranate Universal emulsifier system allows the emulsion to be used in both soft and hard water conditions from 50ppm to 500ppm.

Sump Life; Long sump life and odour free.

Legislation; **ASTRO-SOL ES** meets today's machining demands preparing you for tomorrow's safety legislation.

Features & Benefits

Based upon renewable technology

Chlorine free

Formaldehyde biocide free

NP Ethoxylates free

Traditional mineral oil free

Diethanolamine free

Multi-functional

High lubricity

Multi-metal compatible

Boron free

Reduced disposal costs

Materials & Performance

Material Types	Performance Rating	Applications	Recommended Dilution
Titanium	*****	Broaching	8-10%
Aluminium	*****	Tapping	6-10%
Aero aluminium alloys	*****	Milling	5-7%
High alloy/stainless steel	*****	Turning	5-7%
Copper/brass	****	Reaming	8-10%
Cast iron	**	Sawing	5-8%
		Drilling	7-10%

Typical Data

Appearance @ 20°C	Amber liquid
Odour	Sweet
Emulsion appearance	Milky white
Specific gravity	0.918 (typ)
pH (5% dilution)	9.8 (typ)
IP287 Corrosion Break Point, % Vol	3.0
IP125 Corrosion Break Point, % Vol	2.0
Stack Corrosion Test	2.0
Reichert Lubricity Characteristics (10% dilution);	
Noise reduction (metres)	12M
Load bearing capacity (Kg/mm ²)	1.66
Refractometer Correction Factor	1.25
Copper/Aluminium Stain	1a/no stain

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