



# MAK ROLLUBE SE 1

Premium cold rolling oil for ferrous metals

MAK Cold Rolling Oil has been specially designed for cold reduction of steel sheet. It is developed by blending fully synthetic, semi-synthetic and fully natural products with advanced emulsifier. The product makes use of nonionic, amphoteric and polymeric technologies to deliver the lubricant. The special additive chemistry helps providing low residue, excellent resistance to oxidation and extended operating life. This oil is based on non-active chemistry.

**Applications:**

MAK Rollube SE 1 is a soluble oil for steel and other ferrous alloys. It is used in the form of emulsion to effectively reduce different types of steel to the gauge and shape required. It is recommended to use in steel sheet manufacturing for automotive and white goods components.

**Performance/ Benefits:**

**Excellent Lubrication Performance** – offers low friction coefficient and exhibits superior boundary and extreme pressure lubrication characteristics. Maintains strong lubricating film in hydrodynamic and mixed lubrication zones. Low friction reduces the rolling force which helps reducing the elastic flattening of work rolls and enables larger reduction.

**Superior Cooling Characteristics** – modern rolling process demands much smaller exit gauges from larger hot strip thickness. Heat is generated due to friction and deformation in the roll bite. Good cooling characteristics offers efficient control of roll temperature, transverse thermal profile of rolls, strip shape while minimising roll wear and degradation.

**Cleanliness Performance** – has good cleanliness performance to keep the mill housing clean. It does not leave residue on rolls and produces stain free rolled strips with no soot formation on the rolled sheet.

**Emulsion Behaviour** – forms a metastable emulsion with controlled distribution of emulsion particles based on size. It offers optimum balance of lubricity and cooling. Cooling system needs efficient agitation facility to maintain effective emulsion.

**Extended Sump Life** – contains broad spectrum biocide. Inhibits microbial and fungal growth. Offers extended sump life for the emulsion. Reduces operating cost.

**Excellent Corrosion Protection** – selected corrosion inhibition additives in oil helps to protect cold rolled sheets from corrosion for intermediate storage of strips.

**Clean Burn-Off Characteristics** – helps reduce build-up of deposits in annealing process and delivers clean sheets for further processing.

**Efficient Tramp Oil Rejection** – allows efficient tramp oil removal from emulsion sump to offer clean strips.

**Concentration:**

Cold Rolling: 1 – 4% in water

**Specification:**

- Proprietary Grade

**Typical Physico-Chemical Data: MAK Rollube SE 1**

Characteristics	Method	Value
Appearance	Visual	Clear
Colour	Visual	Brown
Density, g/cc @15°C	ASTM D 1298	0.914
Kinematic Viscosity @40°C, cSt	ASTM D 445	45.80
Saponification Value, mg KOH/ g	IS 1448 P:35	151
Acid Value, mg KOH/ g	ASTM D 664	5.6
pH, 2% Emulsion in DM water		8.1

**Storage & Handling:**

The product should be stored inside. Keep it properly sealed to avoid contamination. Avoid freezing. Shelf life is 2 yrs. under protected conditions.

**Health & Safety:**

It is unlikely to be hazardous when properly used in recommended applications. Contamination of the oil from other oils, greases, chemicals, dirty water etc. can occur during the use. It should be avoided. Regular monitoring of the in-use product is recommended.