

CUTTING FLUIDS

Metal Working Industry has made great strides in introducing new technology in recent years. HPCL's range of cutting fluids have kept up with the changes in technology by way of constant quality upgradation and development of new products to meet specific needs. HPCL's wide range of cutting fluids today cater to virtually every single application in the metal working industry. Classified as water mix type and straight type of cutting fluids, these products are marketed mainly under the brand names of KOOLKUT and TRIMOFIN, respectively. Special products are also sold for specific applications under different brand names.

WATER MIX TYPE OF CUTTING FLUIDS :

HPCL's KOOLKUT series of water mix cutting fluids enjoy leadership status in the market. These products are formulated with refined base stocks and specially selected additives, raw materials, bactericides and other performance chemicals to ensure excellent performance in the shop floor. Diluted in water, at concentrations ranging between 2 to 10%, these products provide excellent cooling, mild lubricity, rust prevention and plating out characteristics.

KOOLKUT 30 is a general purpose low cost emulsifiable type of cutting fluid suitable for all machining operations where emulsifiable oils are used. Depending on operating conditions oil concentration may be varied between 3 to 10%.

KOOLKUT 40 is a premium quality emulsifiable cutting oil meeting BIS specification 1115 - 1986. It is recommended for all machining operations requiring emulsifiable fluids and offers excellent cooling and rust protection.

KOOLKUT 60 is a special grade of premium quality soluble cutting oil. It is specifically recommended in applications where sight of the work piece is important as it forms a translucent emulsion. It is particularly recommended in very demanding applications involving very strict tolerance limits and surface finish. It meets BIS specification 1611-1980. Oil concentration may be varied between 3 to 10%.

KOOLKUT EP 66 is a premium quality heavy duty soluble cutting oil possessing excellent Extreme Pressure properties. It is recommended in machining operations requiring soluble oils but where severity of machining is more. It is much more effective in extending tool life when compared to other soluble cutting oils. Oil concentration may be varied between 5 to 10%.

PROPERTIES	KOOLKUT			
	30	40	60	EP 66
EMULSION TEST	OFF WHITE EMULSION	MILKY EMULSION	TRANSLUCENT EMULSION	SLIGHT YELLOW EMULSION
LOW TEMPERATURE STABILITY TEST	PASS	PASS	PASS	PASS
EP VALUE (SHELL 4 BALL) OK LOAD , KG				180

SEMI SYNTHETIC FLUIDS

KOOLKUT 70 is a synthetic fluid which contains no oil. It is supplied as a concentrate containing special corrosion protection additives dispersed in water. When diluted in water in 2-5% concentration, the solution obtained provides exceptional cooling and adequate rust prevention properties. KOOLKUT 70 is recommended for grinding and other high speed machining operations.

SYNTHKOOL 100 is a premium quality semi-synthetic cutting fluid developed to combine the qualities of both oil based and synthetic water mix fluids. The product is formulated with an assortment of various components to provide cooling, antirust, lubricity, detergency and other properties. It is recommended for high precision grinding and other high speed machining applications. It is also recommended as a replacement to emulsifiable cutting oils in modern machinery.

ALL HP GRADES OF WATER MIX FLUIDS ARE FORTIFIED WITH SUITABLE BACTERICIDES. As such, all KOOLKUT grades and SYNTHKOOL 100 are exceptionally resistant to bacterial growth and provide long service. However, it is essential to maintain good plant handling practices as given below to obtain the longest possible life from these products :

- Pre-treatment of water and its softening for use emulsion/solution preparation.
- The product should always be added to water and not vice-versa. If water is added to product emulsification is not achieved fully and performance is poor, in addition to accelerated bacterial growth.

- Aeration of emulsion/solution to arrest the growth of the predominating anaerobic bacteria.
- Frequent removal of metal chips and fines with proper filtration.
- Regular cleaning of the Coolant reservoir and system.

CHARACTERSTICS	KOOLKUT 70	SYNTHKOOL 100
COLOR	FLOURESCENT GREENISH YELLOW	FLOURESCENT YELLOW
COPPER STRIP CORROSION 3 HRS, 100 ° C, MAX	1	1
NON VOLATILES WT % , MIN	35	38
pH OF 1 :50 SOLUTION IN DISTILLED WATER, MAX	9	8