

## Metalworking Guideline

Metalworking fluid (MWF) is the name given to a range of oils and other liquids that are used to cool and/or lubricate metal workpieces when they are being machined, ground, milled, etc. MWFs reduce the heat and friction between the cutting tool and the workpiece and help prevent burning and smoking.

GS Caltex India's Kixx range of Metalworking Fluids will help end user to improve the quality of component by providing adequate cooling and lubricity properties required during machining.

## GS Caltex India: Fluid Maintenance

Regular maintenance is required for maximum performance. Concentration should be monitored regularly with a calibrated refractometer. The refractometer reading needs to be multiplied by RI factor to determine the actual concentration. Tramp oils should be removed from the coolant surface regularly to help reduce bacterial growth. Keep the coolant system free of cleaners, solvents and other contaminants for efficient performance.

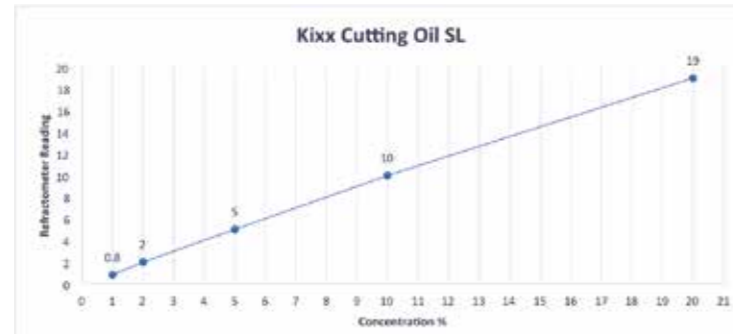
## Managing MWFs in use

When MWFs are used, a primary concern is the presence of contaminants that encourage the growth of bacteria and fungi in water based MWFs. Bacteria can degrade the emulsions and change the properties of the MWFs.

Other sources of contamination include "tramp" oil - oil used for lubrication of the machines, such as hydraulic oil, gear box oil, and other lubricants. Tramp oils that leak into the metalworking fluids can contribute to microbial growth in many ways, including by being a source of nutrients for bacteria, and by creating various conditions for anaerobic microbial growth.

MWFs are also contaminated by small particles of the metal or alloy objects (e.g., fines, chips, swarfs) that come off the parts while they are being machined.

MWFs may also be contaminated by water, cleaning products used for routine housekeeping, or other products at the work site. Improper recycling of materials or the addition of unspecified fluids (such as old lubricating oils) to the MWF will also change the composition of fluid.



Refractive Index Multiplier = 1.0



Refractive Index Multiplier = 1.8



Refractive Index Multiplier = 1.3

## About Us

GS Caltex India is a 100% owned subsidiary of GS Caltex Corporation, South Korea. It was incorporated on 2nd February 2010 in India and has its registered office at Mumbai. Our Indian operations include business in high-quality premium lubricants manufactured from our own group II plus KixxLUBO base oils imported from the Yeosu Refinery, South Korea. It is one of the largest single site refineries in the world. It covers the whole of India with warehouses at key locations to service the needs of customers. GS Caltex India has a very impressive range of high quality finished lubricants and supplies to large businesses including major OEMs. Within the short timespan GS Caltex India has become synonymous with high quality lubricants and lubrication solutions with key OEM partnerships and active technical support.

## GS Caltex India product portfolio also includes

- ▶ Heavy Duty Diesel Engine Oils
- ▶ Hydraulic Oils
- ▶ Gear Oils
- ▶ Transmission Oils
- ▶ Greases
- ▶ Compressor Oils
- ▶ Heat Transfer Fluids
- ▶ Turbine Oils
- ▶ Slideway Machine Oils



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*Enhance Your Productivity & Reliability  
with GS Caltex India Metalworking Fluids*

## Important

We at GS Caltex recommend that selection of MWF should be based upon the process requirements and potential benefits from the choice of fluid rather than a match for the same type of product that was always used in the past.

Most MWFs work well on a given application, one that may offer slightly better rust control and another slightly better tool life or cost advantage. The MWF classifications of synthetic, semi-synthetic or soluble oil only indicates oil content, not performance.



Water Soluble Cutting Oil						
Product	Key Features	Machining capability	Key Applications	Key Materials	Get maximum out of it	
Kixx Cutting Oil SL	Excellent performance on Fe & non-Fe material	General purpose machining	Drilling, milling, turning, boring Light duty tube forming	Steel, Mild Steel, Aluminium, Yellow metals	<ul style="list-style-type: none"> <li>• Excellent emulsion management</li> <li>• Regular oil top-up to get desired emulsion life</li> <li>• Maintain pH between 8.5-9.5 and concentration 5% to achieve excellent results</li> <li>• Periodic tank cleaning to see no accumulation of tramp oil or other contaminants are present</li> <li>• Use water for top-up and fresh charging having hardness of &gt;50ppm and &lt;150ppm</li> <li>• Avoid/minimum skin contact using standard PPE equipments</li> </ul>	
	Excellent emulsion stability					
	Good machine clean-ability					
	Excellent hard water tolerance Excellent resistance to corrosion					
Kixx Cool SSL	Operator and environment friendly chemistry	General purpose machining	Drilling, milling, turning, boring Best suited for grinding	Steel, Mild Steel, Cast Iron		
	High cooling and detergency property					
	Low foaming technology, ideal for high pressure systems					
	Excellent hard water tolerance Excellent resistance to corrosion					
Kixx Multi SSH	Operator and environment friendly chemistry	General purpose machining Heavy duty machining	Drilling, milling, turning, boring	Steel, Mild Steel, Aluminium, Cast Iron, Yellow metals		
	Versatile product - best suited for Fe & non-Fe material					
	High performance with EP properties					
	Low foaming technology, ideal for high pressure systems Excellent resistance to corrosion					



Neat Cutting Oil						
Product	Key Features	Machining capability	Key Applications	Key Materials	Get maximum out of it	
Kixx Neat Cut 18	Excellent EP lubricity, chlorine free	Low to medium duty application	General purpose machining Suitable for deep hole drilling, gun drilling, light duty tapping	Steel, Mild Steel, Aluminium, Cast Iron, Yellow metals	<ul style="list-style-type: none"> <li>• Periodic check on oil level</li> <li>• Avoid cross contamination if any</li> <li>• Periodic tank cleaning to see no accumulation of external contaminants are present</li> <li>• Avoid/minimum skin contact using standard PPE equipments</li> </ul>	
	Yellow metal compatibility					
	Light colored fluid ensures clear visibility Excellent resistance to corrosion					
Kixx Neat Cut 36	Excellent EP lubricity, chlorine free	Medium to heavy duty application	General purpose machining Best suited for gear cutting, gear hobbing, tapping	Steel, Mild Steel, Cast Iron		
	Less heat generation and improves surface finish					
	Light colored fluid ensures clear visibility Free of heavy metals					



Rust Preventive Oil							
Product	Key Features	Type	Salt Spray Protection	Storage* Indoor/Outdoor	Key application	Get maximum out of it	
Kixx Protec ST	Finger print neutraliser	Solvent based	>30hrs	2/1	Auto component and ancillary	<ul style="list-style-type: none"> <li>• Periodic check on oil level</li> <li>• Removal of de-watered tank regularly to get maximum performance</li> <li>• During non operational, oil tank should be closed</li> <li>• Filtration recommended periodically to remove fine traces of metals</li> </ul>	
	Excellent water displacing property						
	Suitable for both Fe and non-Fe Easily removable with neutral cleaners						
Kixx Protec MT	Finger print neutraliser	Solvent based	72hrs	5/3	Protection of nut, bolts, bars, tubes and auto component		
	Excellent water displacing property						
	Suitable for both Fe and non-Fe Easily removable with neutral cleaners						
Kixx Protec HF	Pre-lube coating for sheet metal	Oil based	>72hrs	8/4	Rust preventive oil for rolled steel sheet and coated strips Suitable for electrostatic spray equipment application	<ul style="list-style-type: none"> <li>• Periodic check on oil level</li> <li>• Filtration recommended periodically to remove fine traces of metals</li> </ul>	
	Excellent anti-oil stain property						
	Free of heavy metals and solvent Easily removable with neutral cleaners						

\*In months