Metal Removal Neat Oils

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- • Contains or Recommended
- o Some traces
- MO: Mineral oil
- SHP: Synthetic High Performance technology based on GTL, CTL, GRIII mineral oils

The below information should only be used as a guide. In order to check the suitability for your particular application please consult a QuakerHoughton representative.

	PRODUCT	CATEGORY			PROPERTY	Ester	S Content	P Content	Ca Content	Viscosity @ 40° C cSt	Flash point (COC)	Copper staining	MATERIALS	Ferrous	Aluminium alloys	Copper alloys	Titanium	Carbide tool	BENEFITS
HONING SUPER-FINISHING	QUAKERCUT® 005 XP (BINOL CUT 5)	Honing Grinding Tools	Ester	Medium Duty		•				5	188	1b		•	•	•	•	•	Label free honing and grinding oil based on renewable vegetable raw materials readily biodegradable in soil and water. Increased tool life, Low consumption, low oil mist, cleaner working environment and good skin compatibility. Easy filtration with with Transor filters. In use at several tool manufacturers like Sandvik.
HONING SUPER-FINISHING	CUT-MAX® 912-5	Honing Grinding	SHP	Light Duty		•	•	•		5	180	1b		•	•	•	•		Honing, finsihing and grinding oil based on Syn2Oil technology. High flushing power to clean stones and reduce black staining of the machined parts.
HONING SUPER-FINISHING	CUT-MAX® HO 5	Honing	MO	Light Duty		•				5	140	1b		•	•	•			Honing oil based on sustainable mineral oils low aromatic content. Used as honing and Lapping oil with all kind of abrasives. Has very high flushing power to clean honing and finishing stones.
HONING SUPER-FINISHING	MACRON® 205 M-5	Honing Superfinish Grinding	MO	Light Duty		•		•		4	120	1a		•	•	•			Universal honing, superfinishing and grinding oil based on hydro treated mineral oil. Used also for fine machining of aluminum and yellow metals.Approval/Recommendations: Gehring - Traub Index
GRINDING	CUT-MAX® 905-5	Grinding Tools Grinding	SHP	Medium Duty		•	•	•		5	150	1b		•	•	•	•	•	Calcium free grinding oil based on Syn2Oil technology. Inhibited against cobalt leaching for the grinding of cemented carbide with diamond wheels. The product is also suitable for steels grinding with CBN and ceramic wheels at high cutting speeds. The selection of additives along with low viscosity allows finest filtration even below 1 µm mesh.
GRINDING	MACRON® 2429 S-8	Grinding Tools Grinding	MO	Medium Duty		•	•	•		8	170	1b		•	•	•		•	Grinding oil based on HC mineral oils very low aromatic content, inhibited against cobalt leaching. Main application is for grinding cemented carbide with diamond wheels. The product is also suitable for grinding steel with CBN and ceramic wheels at high Cutting speeds. The selection of additives along with low viscosity allows finest filtration. Approvals/Recommendations: Walter, Schuette, Junker, Transor, Sandvik.
GRINDING	QUAKERCUT® 010 XP (BINOL CUT 10)	Grinding Grinding Tools	Ester	Medium Duty		•				11	232	1a		•	•	•	•	•	Label free high performance grinding and machining oil based on renewable raw materials readily biodegradable in soil and water. Increased tool life, low consumption, low oil mist, cleaner working environment and good skin compatibility.
GRINDING	CUT-MAX® 901-10	Grinding Honing Grinding Tools	SHP	Light Duty		•	•	•	•	9	200	1b		•	•	•		•	Honing, grinding and finishing oil based on Syn2Oil technology. The oil is designed for use with fine filtration units. Its air release properties allows high Cutting speeds and feeds. Approval/Recommendation: Junker.
GRINDING	CUT-MAX® 906-10	Grinding	SHP	Heavy Duty		•	•	•	•	10	180	1b		•		•	•		Grinding oil based on Syn2Oil technology for steel grinding with CBN or ceramic wheels at high Cutting speeds. Main application in gearbox manufacturing, the EP package is designed for high speed hobbing. Has high electric conductivity as required by some MTMs. Approvals: Kapp Niles.
GRINDING	MACRON® 2425 S-14	Grinding Tools Grinding	MO	Medium Duty		•	•	•		13	180	3a		•	•		•	•	Versatile grinding oil based on sustainable MO base oils. Used for flute grinding on high-speed steel as well in combination with ceramic- and diamond- or CBN wheels. Used also for grinding of spiral toothed bevel gears and flat or cylindrical grinding processes on complete range of steels and non-ferrous metals. Approvals: Junker, Liebherr, Klingelnberg, Kapp Niles.

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	PRODUCT	CATEGORY			PROPERTY							MATERIALS					BENEFITS
					Ester	S Content	P Content	Ca Content	Viscosity @ 40° C cSt	Flash point (COC)	Copper staining	Ferrous	Aluminium alloys	Copper alloys	Titanium	Carbide tool	
MACHINING	GARIA® 201 F-10	Cutting Grinding	MO	Light Duty	●	●	●		10	165	4a	●	●				Cutting and grinding oil based on sustainable mineral oils low aromatic content. Has shown good performance with many machining operations such as milling, drilling, reaming and tapping. For the machining of low alloy steel, magnesium and aluminium excellent results are achieved and also proven for grinding operations like grinding of crank shafts. Approval: SWM (EMAG)
MACHINING	CUT-MAX® 903-12	Cutting Deep drilling	SHP	Heavy Duty	●	●	●	o	12	190	4c	●	●		●		Cutting oil based on Syn2Oil technology for machining of high alloyed steels, stainless, heat resistant or austenitic steels and aluminum or magnesium alloys. Gives also excellent results with many difficult operations such as tapping, shaping or shaving of gears. Approval: Index
MACHINING	CUT-MAX® 913-12	Cutting	SHP	Medium Duty	●	●	●		12	190	1b	●	●	●	●		Calcium free neat oil based on Syn2Oil technology showing good performance with many machining operations such as milling, drilling, reaming, deep drilling and tapping. Suitable for all metal types, does not stain yellow metals and aluminium alloys.
MACHINING	QUAKERCUT® 4150 EPS	Cutting	MO	Heavy Duty	●	●	●	●	15	188	1a	●	●	●	●		High-performance oil based on advanced lubricating technology and mineral oils with low aromatic content. Versatile formulation can be used from general-purpose up to medium/heavy duty MW operations like deep-hole drilling, broaching, gears hobbing, gears cutting, ...
MACHINING	MACRON® 600 M-16	Cutting	MO	Heavy Duty	●	●	●	●	16	180	1b	●	●	●	●		Universal Cutting oil based on sustainable mineral oil low aromatic content. Developed particularly for cutting operations on all kind of alloys (steel, titanium, copper and aluminum). Also recommended for medical implants machining on stainless steel and titanium materials. Is recommended for medical implants machining on stainless steel and titanium materials.
MACHINING	QUAKERCUT® 020 XP (BINOL CUT 20)	Cutting	Ester	Medium Duty	●				20	200	1a	●	●	●	●		Label free high performance neat cutting oil based on advanced ester technology from renewable raw materials. Increased tool life, low consumption, low oil mist, cleaner working environment and, good skin compatibility.
MACHINING	MACRON® 805 M-20 VEG	Cutting	Ester	Heavy Duty	●	●	●		20	230	1b	●	●	●	●		Cutting oil based on synthetic esters from renewable sources. Designed for heavy duty operations including gear hobbing and shaving. Wide range of materials such as steel of high tensile strength, titanium, yellow metals and aluminum alloys.
MACHINING	CUT-MAX® 903-22	Cutting	SHP	Heavy Duty	●	●	●		22	220	4c	●	●		●		Calcium free universal cutting oil based on Syn2Oil technology for medium to very high alloyed steel, cast iron and aluminum. Suiitable for all kind of gear machining for automatic turning lathes and for light to medium severe broaching operations.
MACHINING	QUAKERCUT® 4220 EPS	Cutting	MO	Heavy Duty	●	●	●	●	24	198	1a	●	●	●	●		High-performance oil based on advanced lubricating technology and mineral oils with low aromatic content. Versatile formulation can be used from general-purpose up to medium/heavy duty MW operations like deep-hole drilling, broaching, gears hobbing, gears cutting, ...
DEEP DRILLING	GARIA® 601 M-8	Deep Drilling	MO	Heavy Duty	●	●	●		8	160	4c	●	●		●		Cutting oil based on hydrocracked mineral oil with very low aromatic content used for severe gun drilling e.g. of fuel injectors. The low viscous HC base oil allows the drilling of very small diameters in the automotive or also medical sector. Approval: TBT
DEEP DRILLING	CUT-MAX® 902-10	Deep drilling Grinding	SHP	Medium Duty	●	●	●	o	11	200	4b	●			●		Deep drilling and grinding oil based on Syn2Oil technology for material of medium to high tensile strength. Used for grinding with ceramic and CBN wheels. Premium version of the well known Garia 404 M-10. Approvals/Recommendations: Klingelnberg, 3M, Junker
DEEP DRILLING	GARIA® 404 M-10	Deep drilling Grinding	MO	Heavy Duty	●	●	●		10	165	4b	●			●		Versatile grinding and deep drilling oil based on hydro treated mineral oil with low aromatic content. For material of medium to high tensile strength and also used as grinding oil for ceramic and CBN grinding wheels. Approvals: TBT, Botek
DEEP DRILLING	GARIA® 601 M-12	Deep Drilling	MO	Heavy Duty	●	●	●	o	12	175	4b	●	●		●		Deep drilling oil based on hydrocracked mineral oil with very low aromatic content. Has the same chemistry as the Garia 601 M-8. The higher viscosity allows the use with BTA or Ejector drills. Product works also perfect in General machining as e.g. turning of stainless steel. Approved by Kay's Engineering (Eldorado machines) for gun drilling.

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BROACHING	GARIA® 805 M-15 VEG	Broaching Deep Drilling	Ester	Heavy Duty +	●	●	●		15	190	4c	●	●		●		Oil based on synthetic esters from renewable sources. Designed for heavy duty operations such as gear shaping, hobbing, shaving, deep drilling and broaching in a wide range of materials as steel of high tensile strength, stainless steel, aluminium, titanium and nickel alloys. Approvals/Recommendations: TBT Tiefbohrtechnik
BROACHING	CUT-MAX® BR 30	Broaching	MO	Heavy Duty +	●	●	●	●	30	180	4a	●			●		Chlorine free neat oil recommended for broaching and other severe machining operations. Its special additivation ensures high tool life, superior to chlorine-containing products. Broaching steel up to 1000 N/mm2 and at speeds up to 60 m/min. Based on HT mineral oil with low aromatic content. Approval: Klink
MQL	CUT-MAX® ML 501	MQL	Fatty Alcohol	Medium Duty					27	190	1a	●	●	●	●		MQL based on high purity fatty alcohols. It is designed to be easy washable when in process or final cleaning is required. It provides good lubricity together with clean environment mainly when machining of aluminium or ferrous materials. Approval/Recommendation: Bielomatik.
MQL	MACRON® SL 501	MQL	Fatty Alcohol	Medium Duty					27	190	1a	●	●	●	●		MQL based on high purity fatty alcohols. It provides good lubricity together with clean environment mainly when machining of aluminium or ferrous materials. Approvals/Recommendations: Bielomatik, Grob
MQL	QUAKERCUT® MQL 036 AW	MQL	Ester	Medium Duty	●		●		36	278	1a	●	●	●	●		High performance MQL based on ester technology from renewable raw materials. Containing anti-wear additivation sulfur free. It is designed to be easy washable when in process or final wash is required. Suitable for ferrous and non-ferrous materials.
MQL	QUAKERCUT® MQL 050 S	MQL	Ester	Heavy Duty	●	●			47	>250	2c	●	●	●	●		MQL based on synthetic esters technology. Containing anti-wear additivation sulfur free. Suitable for ferrous and non ferrous materials.
MQL	GARIA® SL 601	MQL	Ester	Heavy Duty	●	●	●		50	240	4a	●	●		●		MQL based on synthetic esters from renewable sources. Due to the small amount of unsaturated fatty acids the product shows high hydrolytic and oxidation stability. Used for many applications such as sawing, drilling or tapping. It has enhanced lubricity to increase tool life.
ELECTRO-EROSION	MACRON® EDM 65	EDM	Solvent						1,2	66	1b	●	●	●	●		Universal spark erosion oil based on synthetic isoparafinic hydrocarbons with very low content of aromatics for improved working conditions. Shows very good results with both rough and fine machining. Even in very small erosion slots, the product shows a good flushing performance. Approved by leading MTM.
ELECTRO-EROSION	MACRON® EDM 110	EDM	Solvent						2,4	100	1a	●	●	●	●		EDM fluid for rough and fine machining. Has high removal rate and good flushing power. Product is also used for EDT texturizing of steel rollers. With the benefits of low electrical conductivity, neutral odor,high oxydation stability, low evaporation. Approvals/Recommendations: Makino, Waldrich.
ELECTRO-EROSION	MACRON® EDM 130	EDM	MO						4,0	135	1a	●	●	●	●		EDM for rough machining with high removal rate. Also used for EDT texturizing of steel rollers. With the benefits of low electrical conductivity, neutral odor,high oxydation stability, low evaporation. Approval/Recommendation: Waldrich.

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