

SELECTION GUIDE

Innovative Straight Oil Technology For Every Application

- Formulatory Expertise
- Quality Manufacturing
- Product Stewardship
- Comprehensive Technical Support



Straight Oils For Every Cutting And Grinding Application



QualiChem offers a complete line of cutting and grinding straight oils categorized into three distinct series of quality oils formulated to meet your ever-changing needs.

Premium Non-Petroleum Series

Premium Petroleum Series

Select Petroleum Series

Premium Non-Petroleum Series

Vegetable and synthetic based straight oils with ultra-high performance additive technology

EQO

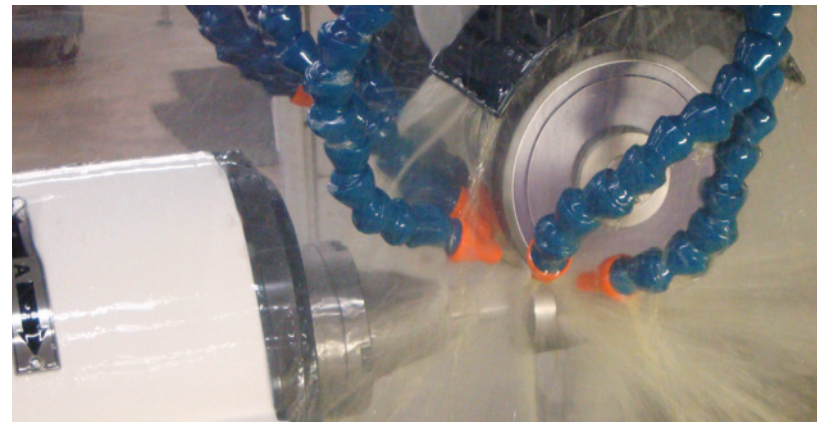
- **EQO-MAX** – Premium Cutting Straight Oils
- **EQO-GRIND** – Premium Grinding Straight Oils

Our EQO straight oils help achieve sustainability objectives by employing the use of renewable resource base stocks. Formulated with leading-edge technology, our Premium Non-Petroleum Series fluids are well suited for users who do not wish to work with mineral oil based straight oils.

QualiChem uses specific vegetable oils with optimum oxidative stability to eliminate varnishing and residues. In addition to the environmental benefits, these unique vegetable-derived base stocks provide enhanced boundary lubrication for the cutting process.

These premium oils come with many benefits, including:

- Outstanding EH&S profiles to include a HMIS rating of “0”
- Superb oxidative resistance
- Unsurpassed machining performance
- Extended service life without varnishing



EQO-GRIND 720 grinding carbide in a Walter Grinder

Premium Petroleum Series

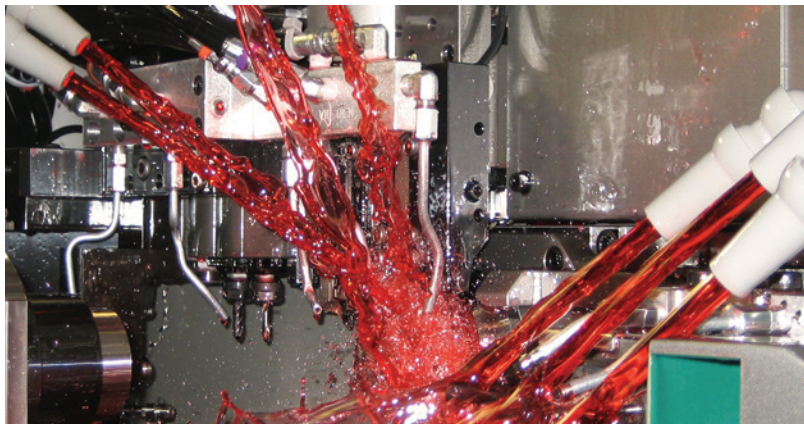
Premium petroleum based straight oils with cutting edge additive technology

XTREME

- **XTREME CUT** – Premium Cutting Oils
- **XTREME DRILL** – Premium Gun Drilling Oils
- **XTREME GRIND** – Premium Grinding Oils

Our XTREME straight oils are the result of extensive research and development incorporating the best available lubrication technology for each cutting process. These premium oils deliver the best performance at the point of cut for your most demanding applications. With our XTREME straight oils, you can expect:

- Extraordinary cutting and grinding performance
- Extremely low odor and light color
- Exceptional cleanliness on both machine tools and parts
- Increased feeds and speeds to maximize productivity and reduce cycle time
- Superior part quality
- Lower operating costs



XTREME CUT 757 shaping, threading and drilling 304 SS in a Citizen L20

Select Petroleum Series

Petroleum based straight oils with traditional additive technology

MET & Q

- **MET-CUT** – Select Cutting Oils
- **MET-DRILL** – Select Gun Drilling Oils
- **MET-GRIND** – Select Grinding Oils
- **Q-BROACH** – Select Broaching Oils
- **Q-HONE** – Select Honing Oils
- **Q-LAP** – Lapping Oils
- **Q-MIST** – Spray Mist Lubricants

Our MET & Q straight oils are formulated to provide the highest performance level for the lowest cost per gallon. You can depend on our Select Petroleum Series fluids to provide many favorable advantages, including:

- Cost effective machining performance
- Proven, reliable additive technology
- Highly refined, virgin base stocks




MET-CUT 733 turning and drilling 4140 steel in a Tsugami B-0205

Cutting Oil Selection Guide

Application Viscosity @ 100FSUS & 40C cSt	Mild Steel Cast Iron, 1010, 1018, 52100	Nonferrous Al, Brass, Cu, Mg	Alloy Steels 4000/8000 series	Stainless Steel 300/400 series, 15-5, 17-4	Exotic Alloys Ti, Inconel, Hastalloy, Waspalloy
Broaching, Horizontal 250 - 300 SUS @ 100F 54 - 65 cSt @ 40C	EQO-MAX 715 EQO-MAX 715HD MET-CUT 77 MET-CUT 776	EQO-MAX 715 MET-CUT 775	EQO-MAX 715 EQO-MAX 715HD XTREME CUT 778 MET-CUT 772	EQO-MAX 715HD XTREME CUT 778 MET-CUT 772	EQO-MAX 715 XTREME CUT 778 MET-CUT 776
Broaching, Vertical 70 - 130 SUS @ 100F 13 - 27 cSt @ 40C	EQO-MAX 713 XTREME CUT 735 MET-CUT 775 Q-BROACH 721	EQO-MAX 713 XTREME CUT 731HV XTREME CUT 753HP MET-CUT 752 MET-CUT 754	EQO-MAX 712 XTREME CUT 757 MET-CUT 746 Q-BROACH 721	EQO-MAX 712CS XTREME CUT 757 XTREME CUT 759 MET-CUT 736 MET-CUT 755HD	EQO-MAX 712 EQO-MAX 716 XTREME CUT 727 XTREME CUT 738 XTREME CUT 757CF
EDM 32 - 40 SUS @ 100F 1.8 - 4.25 cSt @ 40C	MET-EDM	MET-EDM	MET-EDM	MET-EDM	MET-EDM
Gear Hobbing, Shaping, Shaving 130 - 300 SUS @ 100F 27 - 65 cSt @ 40C	EQO-MAX 712CS XTREME CUT 778 MET-CUT 771 MET-CUT 776	EQO-MAX 710 XTREME CUT 766 MET-CUT 769 MET-CUT 775	EQO-MAX 712CS XTREME CUT 766 XTREME CUT 778 MET-CUT 772 MET-CUT 776	EQO-MAX 712CS XTREME CUT 766 XTREME CUT 778 MET-CUT 771 MET-CUT 772	EQO-MAX 712CS EQO-MAX 715 XTREME CUT 776 XTREME CUT 778
General Purpose 75 - 200 SUS @ 100F 27 - 65 cSt @ 40C	EQO-MAX 710 EQO-MAX 712 EQO-MAX 713 XTREME CUT 735 XTREME CUT 757 XTREME CUT 764CF MET-CUT 730 MET-CUT 733S MET-CUT 746 MET-CUT 769	EQO-MAX 710 XTREME CUT 731 XTREME CUT 731HV XTREME CUT 753HP MET-CUT 734 MET-CUT 747 MET-CUT 753 MET-CUT 760	EQO-MAX 712 EQO-MAX 713 EQO-MAX 716 XTREME CUT 727 XTREME CUT 735 XTREME CUT 738MG XTREME CUT 748 XTREME CUT 758 MET-CUT 730 MET-CUT 733S MET-CUT 746 MET-CUT 755HD MET-CUT 769 MET-CUT 771	EQO-MAX 712CS XTREME CUT 713 XTREME CUT 748SS XTREME CUT 758 MET-CUT 746 MET-CUT 771 MET-CUT 776	EQO-MAX 716 EQO-MAX 716CS XTREME CUT 738 XTREME CUT 748 XTREME CUT 757 XTREME CUT 768 MET-CUT 746 MET-CUT 755HD MET-CUT 756
Gun Drilling & Deep Hole Drilling 65 - 90 SUS @ 100F 25 - 34 cSt @ 40C	XTREME DRILL 741CF XTREME DRILL 743 MET-DRILL 740 MET-DRILL 740L MET-DRILL 744	XTREME CUT 753HP XTREME DRILL 743 MET-CUT 729 MET-CUT 753	XTREME CUT 746LV XTREME DRILL 741 XTREME DRILL 741CF MET-DRILL 740 MET-DRILL 740L MET-DRILL 744	XTREME DRILL 741 MET-DRILL 740 MET-DRILL 744	XTREME CUT 738 XTREME CUT 738MG
Screw Machine, Dual Purpose 120 - 160 SUS @ 100F 25 - 34 cSt @ 40C	EQO-MAX 710 XTREME CUT 764CF XTREME CUT 768 MET-CUT 747 MET-CUT 754 MET-CUT 756	EQO-MAX 710 XTREME CUT 764CF XTREME CUT 768 MET-CUT 747 MET-CUT 754	EQO-MAX 710 XTREME CUT 764CF XTREME CUT 768 MET-CUT 754 MET-CUT 756 MET-CUT 769	XTREME CUT 764CF XTREME CUT 768 MET-CUT 760 MET-CUT 769	EQO-MAX 710 XTREME CUT 764CF MET-CUT 769

Cutting Oil Selection Guide continued

Application Viscosity @ 100FSUS & 40C cSt	Mild Steel Cast Iron, 1010, 1018, 52100	Nonferrous Al, Brass, Cu, Mg	Alloy Steels 4000/8000 series	Stainless Steel 300/400 series, 15-5, 17-4	Exotic Alloys Ti, Inconel, Hastalloy, Waspalloy
Spray Mist/MQL 120 SUS @ 100F 6 - 43 cSt @ 40C	EQO-MAX 710 EQO-MAX 718 Q-MIST 705 Q-MIST 705CF Q-MIST 706	EQO-MAX 710 Q-MIST 705 Q-MIST 705E Q-MIST 706	EQO-MAX 715 EQO-MAX 718 Q-MIST 705 Q-MIST 705E	EQO-MAX 712 EQO-MAX 712CS	EQO-MAX 715 EQO-MAX 718 Q-MIST 705E
Swiss Automatic 55 - 140 SUS @ 100F 9 - 30 cSt @ 40C	EQO-MAX 713 EQO-MAX 714 XTREME CUT 735 XTREME CUT 748CF MET-CUT 725 MET-CUT 730 MET-CUT 733S MET-CUT 760	EQO-MAX 713 EQO-MAX 714 EQO-MAX 716SF XTREME CUT 731 & 731HV XTREME CUT 749 XTREME CUT 753HP MET-CUT 724 MET-CUT 729 MET-CUT 734 MET-CUT 752	EQO-MAX 712 EQO-MAX 713 EQO-MAX 714 XTREME CUT 727 XTREME CUT 746LV XTREME CUT 757 MET-CUT 730 MET-CUT 742 MET-CUT 746 MET-CUT 755HD	EQO-MAX 712 EQO-MAX 712CS XTREME CUT 738MG XTREME CUT 746LV XTREME CUT 748S MET-CUT 733 MET-CUT 742 MET-CUT 746	EQO-MAX 716 EQO-MAX 716SF XTREME CUT 727 XTREME CUT 738 XTREME CUT 757 MET-CUT 746 MET-CUT 754
Tapping/Threading 235 - 800 SUS @ 100F 50 - 173 cSt @ 40C	 QUICKTAP MET-CUT 773 MET-CUT 775 MET-CUT 776	QUICKTAP MET-CUT 775	QUICKTAP XTREME CUT 778 MET-CUT 772 MET-CUT 773 MET-CUT 779	QUICKTAP XTREME CUT 778 MET-CUT 772 MET-CUT 779	QUICKTAP XTREME CUT 778 MET-CUT 775 MET-CUT 776 MET-CUT 779

Grinding & Honing Oil Selection Guide

Application Viscosity @ 100FSUS & 40C cSt	Mild Steel Cast Iron, 1010, 1018, 52100	Nonferrous Al, Brass, Cu, Mg	Carbide	Stainless Steel 300/400 series, 15-5, 17-4	Exotic Alloys Ti, Inconel, Hastalloy, Waspalloy
Flute Grinding 100 - 150 SUS @ 100F 20 - 32 cSt @ 40C	XTREME GRIND FGO 100 MET-GRIND FGO 100 MET-GRIND FGO 150	Not applicable.	XTREME GRIND FGO 100 MET-GRIND 732 MET-GRIND FGO 100 MET-GRIND FGO 150	Not applicable.	Not applicable.
High Speed Grinding 40 - 80 SUS @ 100F 4.25 - 16 cSt @ 40C	EQO-MAX 714 XTREME GRIND 726 XTREME HONE 793 MET-CUT 724 MET-CUT 725 MET-GRIND 732 MET-GRIND 750	XTREME CUT 778 MET-CUT 732	EQO-GRIND 720 MET-GRIND 732	EQO-GRIND 714 EQO-GRIND 720 XTREME CUT 726 MET-GRIND 750	EQO-GRIND 720 XTREME GRIND 726 MET-GRIND 750
Honing 40 - 80 SUS @ 100F 4.25 - 16 cSt @ 40C	XTREME HONE 791 XTREME HONE 793 Q-HONE 780 Q-HONE 788 Q-HONE 790	XTREME HONE 791 Q-HONE 705 Q-HONE 705E Q-HONE 706	Not applicable.	XTREME HONE 793 Q-HONE 782	XTREME HONE 791 XTREME HONE 793 Q-HONE 782 Q-HONE 790
Lapping 40 - 50 SUS @ 100F 4.25 - 8 cSt @ 40C	Q-LAP 701	Q-LAP 701	Q-LAP 701	Q-LAP 701	Q-LAP 701

Selecting The Right Oil For The Right Application Is Crucial To Your Bottom Line

A QualiChem expert will work with you to identify the best product for your application.

Our experienced engineers can tell you which characteristics are best suited for all combinations of materials, machines, processes and other special considerations. With QualiChem's expertise in oil technology, rest assured you are using the correct oil for your application and gaining maximum machining productivity.

The QualiChem straight oils specifically recommended for your applications will:

- Reduce consumption with lower drag out rates
- Optimize lubrication and cooling to decrease cycle times and improve part quality
- Increase tool life
- Ensure compatibility with various metallurgies and special industry needs (aerospace, medical, electronics, etc.)
- Resolve common issues, such as ensuring high pressure compatibility, reducing misting and smoking, controlling staining and improving work-place cleanliness

To determine the right oil for your application, please contact your local QualiChem Distributor or QualiChem Sales Engineer.

EQO

Premium Non-Petroleum Series

Vegetable and synthetic based straight oils with ultra-high performance additive technology

XTREME

Premium Petroleum Series

Premium petroleum based straight oils with cutting edge additive technology

MET & Q

Select Petroleum Series

Petroleum based straight oils with traditional additive technology



Tomorrow's Technology...Today

QualiChem delivers the power of new, innovative technology to your straight oil cutting and grinding operations. The advanced additive chemistry in QualiChem oils will fast forward your entire process. You can count on our straight oils to provide:

- Improved cycle times
- Reduced tooling costs
- Excellent part quality
 - Superior surface finishes
 - Adherence to exacting tolerances
 - Reduced scrap rates
- Decreased oil consumption through lower drag out rates
- Exceptional fluid aesthetics (superb cleanliness, low odor & low residue)
- Trouble-free operations
- Environmentally friendly product options

**Make a smooth transition to the future
with QualiChem straight oils.**



QualiChem Corporate Headquarters, Manufacturing Plant and Laboratories

All metalworking products sold by QualiChem are manufactured at our facility in Salem, VA. Local stocking and delivery are provided through our premier distribution network.

Distributor Label

QUALICHEM
Metalworking Fluids

2003 Salem Industrial Drive
Salem, VA 24153

540.375.6700
540.375.3880 FAX

www.qualichem.com

AN ISO 9001:2008 COMPANY



The QualiChem Advantage

Formulatory Expertise

QualiChem manufactures the highest performing straight oils on the market today. By applying the latest advances in additive technology and looking beyond the additives targeted for metalworking, our team of formulation experts is erasing old paradigms and providing innovative chemistry that defines the future of metalworking fluid technology.

Quality Manufacturing

QualiChem's state of the art manufacturing facility utilizes a precision manufacturing process to blend all straight oils to tight quality control parameters. Every batch is tested in our QC lab prior to shipment, then re-tested after one month and again after 12 months to ensure short and long term stability as well as adherence to quality control standards.

Product Stewardship

QualiChem subscribes to the principles of Product Stewardship. Human and Environmental Safety is our foremost objective during the research, development and manufacturing of our products. QualiChem's drive to deliver high performance is equaled only by our commitment to health, safety and environmental responsibility.

Comprehensive Technical Support

QualiChem provides complete technical, sales and laboratory support for all of our straight oils. Our engineering expertise will effectively address all of your specific fluid requirements and assist you in improving the performance of your most challenging applications.