



Master Fluid
SOLUTIONS®

*TRIM® MicroSol® –
Redefining Excellence*



INNOVATIONS
FOR LONGER SUMP
AND TOOL LIFE

TRIM® MicroSol® 590XT



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The ultimate cutting edge fluid, TRIM® MicroSol® 590XT is a maximum lubricity, advanced technology, semisynthetic microemulsion, specifically developed to meet the aerospace industry's most stringent specifications.

MicroSol 590XT surpasses the most stringent chemical content, environmental, and machining requirements of the global aerospace industry – with flying colors.

Highly lubricious MicroSol 590XT has it all: absolute foam control, dramatically extended sump life, superior corrosion and surface finish protection – all delivered with reduced downtime and an increased bottom line.

Exceed your production expectations with MicroSol 590XT.

Case Study

OPERATION:

High-production machining of aerospace materials

APPLICATION:

A major aerospace manufacturer primarily machines aluminum, titanium, stainless, Inconel®, and other aerospace alloys for the global aerospace industry. As a premier supplier of structural components to aerospace Tier 1 and Prime OEMs, the high-production facility runs multiple shifts on approximately 35 machining centers.

Previously, they had used a coolant that had the necessary aerospace approvals, but experienced problems with odor, residue, and foaming. Offering foam control and approvals from major aerospace manufacturers, premium MicroSol 590XT was a logical switch. Running MicroSol 590XT, the customer has seen a vast improvement in overall machine cleanliness, their foul odor and foam issues are gone, and they are achieving excellent tool life and surface finish on their parts. They're completely impressed with the cost effectiveness and performance of MicroSol 590XT.

See your production soar with MicroSol 590XT!



TRIM® MicroSol® 590XT

APPROVALS

Airbus 80-T-30-4010, ABR9-0204

The Boeing Company BAC5008
Boeing Full Aerospace Approval

Bombardier Aerospace BAMS 569-001

Fokker

SAFRAN GROUP
(Messier/Bugatti/Dowty; Techspace
Aero; Hispano Suiza) PCS-4001/4002

Safran Aircraft Engines PR6300 Index A

United Technologies Corporation
(Hamilton-Sundstrand/Pratt Whitney/
Sikorsky) PMC 9297



TRIM® MicroSol® 690XT



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Meeting the highest demands of the aerospace, automotive, and medical industries, TRIM® MicroSol® 690XT is the pinnacle of high-performance microemulsions. It delivers unsurpassed lubricity with dramatically extended tool life and improved foam control.

MicroSol 690XT provides exceptional surface finish and tool life on the difficult-to-machine aerospace aluminum alloys, Inconel®, titanium, stainless, and high tensile-strength steels. With an ultra, low-foam profile, this next generation microemulsion tackles high-pressure, high-volume applications. It's an excellent alternative to the increased consumption experienced with high-mineral soluble oils, and the tooling underperformance and machine compatibility issues of a synthetic.

For peak performance, make it MicroSol 690XT.

Case Study

OPERATION: Cutting Inconel, tapping aluminum

APPLICATION: Precision-machined components and parts

Having used a full synthetic, Oregon-based Hy-Speed Machining switched to MicroSol 690XT with astonishing results. Formerly, when tapping parts, they lined them up, started the taps, put in a machine override to add tapping oil, then resumed tapping. Now, with MicroSol 690XT, they just start it up, walk away, and "come back to beautiful parts."

"Since we switched to MicroSol 690XT," attests CNC operator Mike Mills, Jr., "we've increased our surface footage, speed rates, chip loads, and tool life. We literally get up to six times the tool life that we were getting with the former coolant. On one Inconel job alone, we went from 12 to just 4 ½ minutes per part- with a tenth of the coolant cost. Before we were going through four to five \$450 drills on the run of 150 parts- now we use ONE drill for the entire run and it's still good for more! We're saving thousands of dollars on just this one job."

Having cut coolant and tool costs dramatically and increased production, Hy-Speed Machining is sold on MicroSol 690XT.



TRIM® MicroSol® 690XT

APPROVALS

General Electric SDS# EVEN-12659

Lockheed 864-009

Northrop Grumman

SAFRAN GROUP

(Messier/Bugatti/Dowty; Techspace Aero; Hispano Suiza) PCS-4001/4002

United Technologies Corporation
(Hamilton-Sundstrand/Pratt Whitney/Sikorsky) PMC 9293



TRIM® MicroSol® 585XT



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Also from the MicroSol family is the highly lubricious TRIM® MicroSol® 585XT semisynthetic, microemulsion coolant. With characteristics similar to the MicroSol 690XT, it provides high performance without chlorinated EP additives.

MicroSol 585XT is exceptional for machining titanium and aluminum alloys, highly engineered thermoplastics and composites. The extremely hard-water tolerant, fast-wetting coolant markedly extends sump life and provides superior corrosion protection along with substantial savings on time and material.

For exceptional lubricity and surface finish, use MicroSol 585XT.

Case Study

OPERATION:

Milling and turning aluminum, titanium, and aerospace alloys

APPLICATION:

A USA-based manufacturer of aerospace turbine blades and precision industrial parts was experiencing problems with other coolants: from foul odor and high carryoff, to damaged seals and residue, as well as smoking and excess makeup. The customer ran tests on MicroSol 585XT and found that smoking and misting were significantly reduced, there were no bad odors or damage to seals, and usage was measurably reduced.

With the switch to MicroSol 585XT, they have experienced much longer sump life, and problems with smoking, residue, foul odor, seal damage, and excess carry-off are a thing of the past. The customer has seen a significant boost to their bottom line with MicroSol 585XT!



TRIM® MicroSol® 585XT

APPROVALS

Aerojet ASTM F 945

Airbus 80-T-30-4010 (site specific)

Applied Materials UHV

The Boeing Company BAC 5008

Bombardier Aerospace BAMS 569-001

Fokker

General Electric SDS# EVEN-11232

Lockheed G34.62, G74.0051, F74.0051

Lord Corporation MTL-S-0136

Rolls Royce CSS 127

SAFRAN GROUP

(Messier/Bugatti/Dowty; Techspace Aero; Hispano Suiza) PCS-4001/4002

United Technologies Corporation
(Hamilton-Sundstrand/Pratt Whitney/
Sikorsky) PMC 9362



TRIM® MicroSol® 685



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High-lubricity, semisynthetic TRIM® MicroSol® 685 microemulsion offers the performance of a heavy-duty soluble oil with the cleanliness of a semisynthetic. With excellent machinability, cooling, and mechanical lubricity, MicroSol 685 is an excellent alternative to chlorinated soluble oils on high-silica aluminum alloys.

MicroSol 685 is compatible with a very wide range of materials including aluminum, magnesium and copper alloys, cast iron, steels, stainless steels, and plastics and composites. With exceptional sump life without the use of tank side additives, it provides superior corrosion inhibition on all ferrous and nonferrous metals.

Boost your production with MicroSol 685.

Case Study

OPERATION:

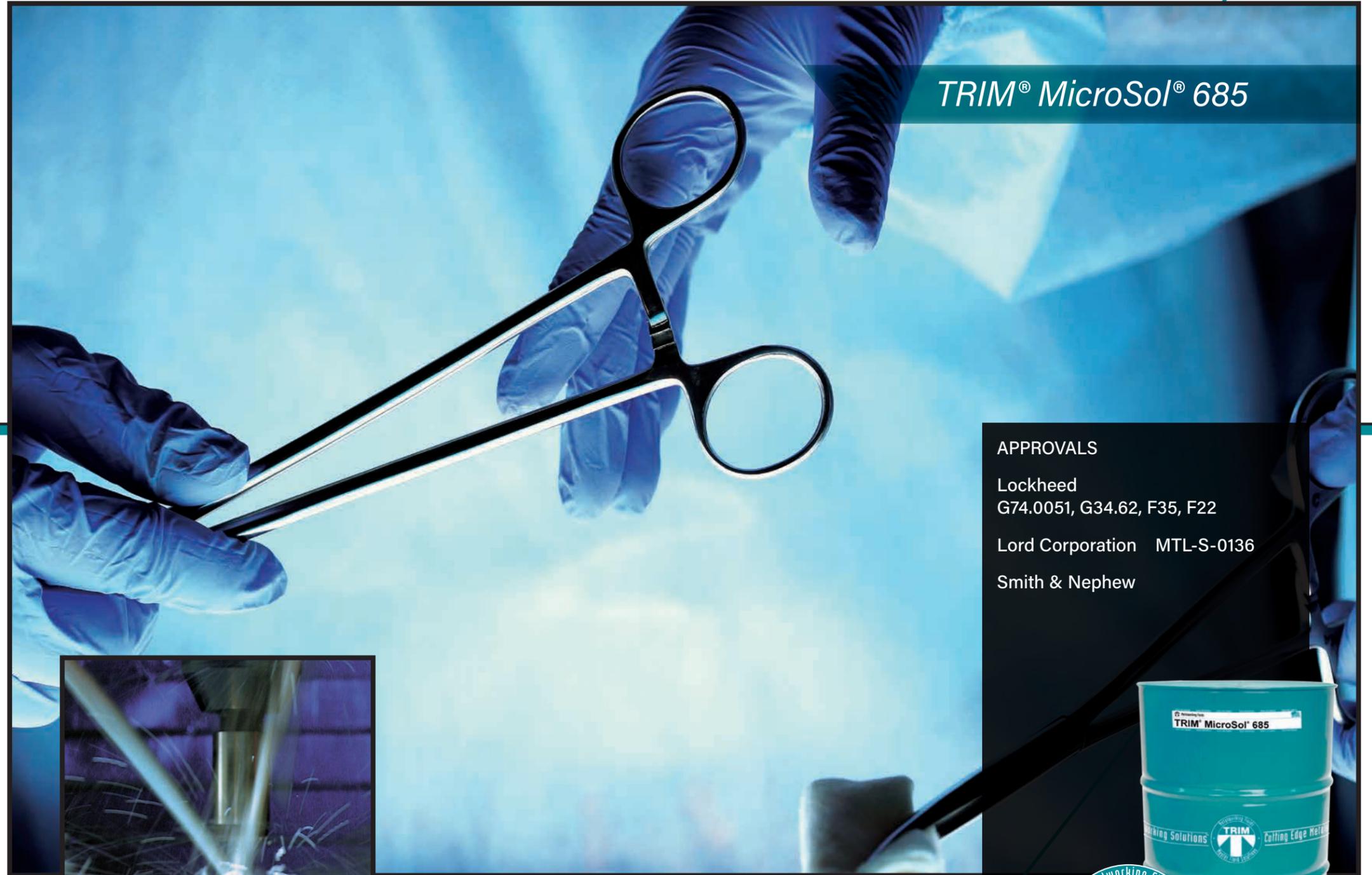
Machining titanium, engineered plastics, and stainless steel

APPLICATION:

A major US manufacturer of joint replacement systems and tools for the medical industry, wanted to reduce the number of coolants to just one or two and possibly achieve cost savings- without sacrificing parts quality that is so essential in the medical industry.

Lab tests confirmed TRIM® MicroSol® 685 would meet their cytotoxicity specifications to produce clean, reliable parts, while reducing cost. MicroSol 685 matched or exceeded the other coolants in all areas while solving problems with excessive foam. Parts were pristine, surface finish and overall performance were very good.

The medical parts customer switched to MicroSol 685 as their single coolant and realized a whopping 24.4% cost savings per year with less product used, much longer fluid life, and significantly reduced disposal costs.



TRIM® MicroSol® 685

APPROVALS

Lockheed
G74.0051, G34.62, F35, F22

Lord Corporation MTL-S-0136

Smith & Nephew



TRIM® MicroSol® 455



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The latest, hard-working addition to the MicroSol® lineup is TRIM® MicroSol® 455. This low-foam, long-life semisynthetic microemulsion coolant is specifically formulated for high-pressure, high-volume machining and slab milling of cast iron, ferrous metals, and some aluminums and nonferrous metals.

TRIM MicroSol 455 delivers extended sump and tool life, and improved parts quality, while providing excellent corrosion protection on cast iron. And MicroSol 455 prevents leaching of elemental iron and eliminates clinkering and oxidation of ferrous micro fines. Cost-effective MicroSol 455 is free of boron, chlorine, DEA, and sulfur, and requires no special disposal or recycling.

Make a difference to your bottom line with MicroSol 455.

Case Study

OPERATION: Turning, slab milling, drilling, tapping, forming cast iron and steel

APPLICATION: High-volume industrial bearings

Standard Locknut of Westfield, Indiana, manufacturers of precision industrial bearings ranging from 3" to 24". 98% of their high-volume operation is production of cast iron and steel, and some aluminum. They were using a reputable semisynthetic coolant that produced dependable parts, but gave them just four to six months sump life and some unpleasant odor issues. Backed with testing and data from their Master Fluid Solutions expert, they made the switch to TRIM MicroSol 455 semisynthetic.

With the additional benefit of corrosion protection on cast iron parts, TRIM MicroSol 455 produces reliable bearings, odor problems are eliminated, sump life is more than doubled to over 12 months, and usage is reduced by 25%. Plant manager Rob Fulk states, "We'll see a \$25,000 savings a year, not factoring in the additional cost savings with less downtime, less waste, and less haul-off. We're completely sold on MicroSol 455!"



MicroSol® 590XT Advanced Technology Aerospace Semisynthetic

- > specifically designed for earning aerospace approvals
- > protects aerospace and nuclear material alloys from surface stains and corrosion
- > exceptional foam control
- > free of boron, halogen, and DCHA

MicroSol 690XT High-lubricity, Low-foam Premium Semisynthetic

- > highest lubricity MicroSol
- > robust stability package for long life
- > exceptional foam control
- > excellent environmental and regulatory profile

MicroSol 585XT Extended-life, Nonchlorinated Semisynthetic

- > for wide range of materials: cast iron, steels, titanium and aluminum alloys, copper, most plastics and composites
- > high performance without chlorinated EP additives
- > excellent for high-pressure, low-foaming applications

MicroSol 685 High-lubricity Semisynthetic

- > higher lubricity performance on aluminum, copper alloys, steels, stainless steels, and most plastics and composites
- > contains chlorine, but free of nitrites, triazines, phenols, and sulfurized EP additives

MicroSol 455 Low-foam Ferrous Semisynthetic

- > for high-volume cast iron and ferrous metalworking operations

MACHINING	Fe + C [<2%] Steels	Fe + C [>2%] Cast Iron	Al + Si [<1%] Al-Wrought	Al + Si [>8%] Al-Cast	(Cu+Zn), Cu, (Cu+Sn) Yellow Metals	Fe + [Ni, Co &/or Cr] Exotic Alloys
Turning	MS590XT* MS585XT* MS455	MS455	MS690XT* MS685 MS590XT* MS585XT* MS455	MS585XT*	MS585XT*	MS690XT* MS685 MS590XT* MS585XT*
Surface Milling	MS590XT* MS585XT* MS455	MS455	MS690XT* MS590XT* MS585XT* MS455	MS690XT* MS685 MS585XT*	MS585XT*	MS690XT* MS685 MS590XT* MS585XT*
Drilling, Tapping, and Reaming	MS690XT* MS685 MS590XT* MS585XT*	MS455	MS690XT* MS685 MS590XT*	MS690XT* MS685	MS585XT*	MS690XT* MS685 MS590XT* MS585XT*
Thread Forming/Roll Threading	(other TRIM products)**	MS585XT* MS455	MS690XT* MS685 MS590XT*	MS690XT* MS685	MS585XT*	MS690XT* MS685 MS590XT* MS585XT*
Sawing - Band/Hack/Cold	MS590XT* MS585XT*	MS455	MS690XT* MS685 MS590XT*	MS690XT* MS685	MS585XT*	MS690XT* MS590XT* MS585XT*
GRINDING	Fe+C[<2%] Steels	Fe+C[<2%] Tool Steels	Al+Cu+Zn Nonferrous	Fe+[Ni, Co &/or Cr] Exotic Alloys		
Plain Grinding - Surface/Cylindrical	MS590XT* MS585XT*	MS455	MS690XT* MS685 MS585XT*	MS590XT* MS585XT*		
Blanchard - Double Disc/Belt Grinding	MS590XT* MS585XT*	MS585XT*	MS585XT*	MS590XT* MS585XT*		
Through-feed Centerless	MS590XT* MS585XT*	MS585XT*	MS690XT* MS685 MS585XT*	MS590XT* MS585XT*		
Infeed Centerless	MS590XT* MS585XT*	MS585XT*	(other TRIM products)**	MS590XT* MS585XT*		
Form Cylindrical - Internal Grinding/Angle Grinding	MS690XT* MS685 MS590XT* MS585XT*	MS585XT* MS455	(other TRIM products)**	MS590XT* MS585XT*		

NOTE: MS stands for TRIM® MicroSol® * * * Indicates excellent performance for high-pressure applications and low foaming for MicroSol 690XT, MicroSol 590XT, and MicroSol 585XT.
 ** Ask your TRIM sales representative for the specific TRIM product/products best suited for these operations, and for form grinding or grinding carbides.



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