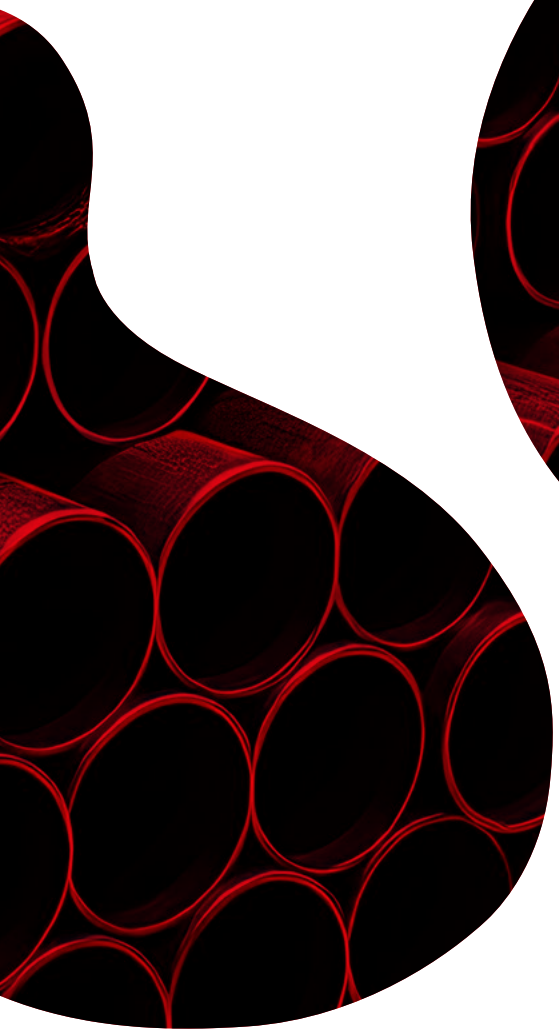
Forming & Corrosion Protection
WEDOLIT
Master Fluid Solutions

LUBRICANTS FOR WELDED AND SEAMLESS PIPES

SEE THE DIFFERENCE



Master Fluid SOLUTIONS™

Master Fluid SOLUTIONS™

SEE THE DIFFERENCE

Since our founding in 1951, we have strived for continuous excellence and improvement in everything we do, thereby helping to expand the opportunities available to our customers and business partners. Get in touch with our experts and SEE THE DIFFERENCE in working with us and our outstanding solutions.

Corrosion & Corrosion Protection
WEDOLIT
Master Fluid Solutions

WEDOLiT® – LUBRICANTS FOR PIPE MANUFACTURING

Whether producing welded or seamless pipes, modern manufacturers demand consistent performance under the most challenging conditions.

Our tailor-made WEDOLiT® products provide lubrication, cooling, and surface protection at every stage of the process — enabling cleaner operations, extended tool life, and superior product quality.

Our solutions are designed to deliver:

- **High process reliability:** Stable lubrication and cooling under mechanical and thermal stress.
- **Clean, residue-free surfaces:** Ready for subsequent processing or coating.
- **Material versatility:** Compatible with steel, stainless steel, galvanized steel, copper, and aluminum.
- **Sustainability:** Mineral oil-free, boron-free, VOC-free, and long-life formulations that reduce environmental impact.

We are your partner for forming and protecting metal.
SEE THE DIFFERENCE – with WEDOLiT®.

« With WEDOLiT®, customers benefit from a comprehensive portfolio and deep expertise, delivering technological and economic advantages for the tube and pipe industry. »

Ismael Tarruell
Global Business Development Manager
for Forming Fluids

MEETING THE CHALLENGES OF PIPE MANUFACTURING

The production of welded and seamless pipes is very demanding for lubricants. Both processes share the same objective — precision, stability, and surface quality — but differ significantly in thermal load, lubrication stress, and cleaning requirements.

WEDOLiT® products are formulated to meet these specific challenges, delivering consistent results, longer tool life, and cleaner processes.

Challenges and Distinct Requirements in Welded and Seamless Manufacturing

Pipe production — whether welded or seamless — places exceptional demands on process lubricants. While both manufacturing methods share fundamental challenges, subtle but important technical differences call for tailored solutions.

- **Cooling and Lubrication:** Both welded and seamless processes require high-efficiency lubricants that reliably cool and protect tools and materials, minimizing wear and thermal damage throughout forming, welding, or drawing operations.
- **Residue-Free Cleanliness:** Superior washability is essential in both methods. Lubricants must be easily removed and leave no interfering residues before further processing, coating, or testing.
- **Corrosion Protection:** Newly manufactured pipes are susceptible to corrosion. Lubricants must provide dependable temporary protection from the moment of production, supporting safe intermediate storage and transport.
- **Material Compatibility:** Modern lubricants must work with various metals used in pipe production — whether steel, stainless steel, galvanized steel, or copper — without staining or adverse chemical interaction.
- **Health & Safety Compliance:** All formulations must meet current occupational safety and environmental regulations.
- **Microbial Stability:** Long bath life and ease of maintenance depend on lubricants which resist microbial growth and maintain hygienic conditions in recirculated systems.

It is particularly important to use high-performance lubricants when manufacturing seamless pipes. These lubricants must be able to handle high pressures and extreme temperatures.Products must deliver exceptional thermal stability, EP performance, and separation — especially during hot rolling or cold pilgering.

EXPERTISE AND COLLABORATION

- **Trusted partner** to global pipe and tube manufacturers
- **Approved** by leading OEMs for welding, forming, and testing technologies
- **Continuous R&D collaboration** focused on process optimization and sustainability
- Decades of **proven performance** across energy, construction, and automotive sectors

With Master Fluid Solutions and WEDOLiT®, customers gain more than products — you gain complete process know-how and a reliable partnership.

OUR PROMISE

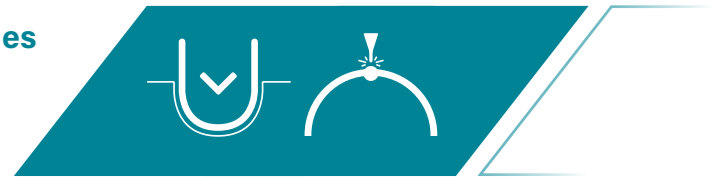
Whether welded or seamless pipe manufacturing demands precision and reliability. Our WEDOLiT® solutions are designed to deliver both — protecting your tools and your process.

- **Proven performance under real production conditions**
- **Tailored product selection for each process step**
- **Sustainable solutions that reduce waste, emissions, and cost**

Trust in more than 80 years of expertise in forming, welding, and protecting metal. WEDOLiT® – See the Difference.

PROCESS SOLUTIONS – WELDED PIPES

Typical process stages in the manufacture of welded tubes



Tube Forming and Welding

Cooling and lubrication of the welding zone.

TUBE WELDING EMULSIONS

PRODUCT	FEATURES	TYPE
WEDOLiT® FW 7640	High lubricity, clean components, low foaming	Synthetic tube welding solution
WEDOLiT® FW 7641	High lubricity, clean components, low foaming	Synthetic tube welding solution
WEDOLiT® FW 7650	Strong lubrication, excellent tube cleanliness, and reliable corrosion protection	Synthetic tube welding solution
WEDOLiT® FW 7651	Thermally stable synthetic coolant for complete tube-welding lines, ensuring clean welds, smooth roller operation, and non-emulsifying behavior with oils.	Synthetic tube welding solution
WEDOLiT® FW 7652	High lubrication efficiency, clean surfaces, and consistent corrosion protection.	Synthetic tube welding solution
WEDOLiT® FW 7661	Low-concentration, high-performance synthetic coolant offering robust lubrication, thermal stability, and uniform corrosion protection for welded steel tubes.	Synthetic tube welding solution
WEDOLiT® FW 7840	OEM-approved (Daimler) tube-welding emulsion delivering stable cooling, clean surfaces, and bright finish after annealing.	Water miscible tube welding emulsion

Tube Sawing

Minimum Quantity Lubrication (MQL) for precision cutting.

Tube Cleaning

Removal of residues and temporary corrosion protection.

Leakage and Ultrasonic Testing

Low-foaming, water-based test media.

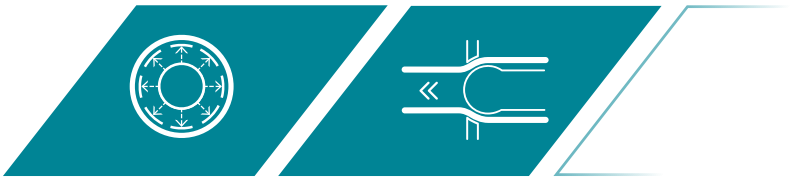
Corrosion Protection

An essential part of the metal production process

EP	Cl	Boron	Amin	FAD	Flashpoint	Compatibility					Approvals
						St	GS	SS	Al NF	CU	
			✓	✓		✓					
			✓			✓	✓	✓			
		✓	✓	✓		✓	✓				
✓		✓	✓	✓	>100	✓					
		✓	✓	✓	>100	✓	✓	✓			
✓			✓	✓	>100	✓					
				✓	>100	✓	✓				Daimler

PROCESS SOLUTIONS — SEAMLESS PIPES

Typical Process Stages



Hot Piercing and Forming

Heavy-duty drawing or pilgering under high pressure.

Cold Drawing

Surface lubrication with reactive or evaporating oils.

TUBE DRAWING EMULSIONS

PRODUCT	FEATURES	TYPE
WEDOLiT® FN 1170-225	High load-carrying capacity, reduces friction and wear, smooth sliding for longer tool life.	Medium Viscous Forming Oil
WEDOLiT® FN 1190-2300	Stable load capacity, excellent wetting & film formation, reduces wear, ensures dimensional accuracy.	High Viscous Tube Drawing Oil
WEDOLiT® FN 1430-115	Medium-viscosity, water-insoluble lubricant (non-ferrous forming) with stable sliding, excellent film formation and easy cleaning — good for non-ferrous tube drawing/forming.	Synthetic Tube Drawing Oil
WEDOLiT® FN 1430-220	High-viscosity, water-insoluble lubricant for aluminium and non-ferrous metal forming; strong load-carrying, good film formation, smooth sliding and easy removal before annealing.	Synthetic Tube Drawing Oil
WEDOLiT® FN 1530-650	Clean surfaces and high dimensional accuracy for bright steel tube, bars and wires	Synthetic Tube and Wire Forming Oil
WEDOLiT® FN 1570-5700	Highly viscous, water-insoluble lubricant for cold forming/non-ferrous metals; high load capacity, consistent sliding behavior, good for high-deformation forming.	High Viscous, Synthetic Tube Drawing Oil
WEDOLiT® FN 1571-2800	Water-insoluble forming lubricant for aluminium and non-ferrous tubes/ profile drawing, offering high load-bearing, clean surfaces, and easy residue removal before annealing.	High Viscous, Synthetic Tube Drawing Oil
WEDOLiT® FN 8850-90	Medium-viscosity, water-insoluble lubricant for steel tube drawing / cold forming; reduces friction & wear, ensures smooth sliding and clean surface, nd adds corrosion protection (short-term).	Medium Viscous Tube Drawing Oil
WEDOLiT® FW 1960	Water-soluble alkaline soap for heavy steel tube drawing; specially reacts with zinc-phosphate layer to yield optimal deformation performance.	Tube Drawing Soap
WEDOLiT® FN 8830	Chlorine-free, pasty, high-pressure lubricant for cold forming (e.g. pilgering) of high-alloy steels; delivers strong extreme-pressure performance and stable sliding under high loads.	Tube Drawing Paste

Calibration and Finishing

Achieving precise dimensions and clean surfaces.

Tube Sawing

Minimum Quantity Lubrication (MQL) for precision cutting.

Testing and Cleaning

Residue-free leak testing and temporary corrosion protection.

Corrosion Protection

An essential part of the metal production process

EP	Cl	Boron	Amin	FAD	Flashpoint	Compatibility					Approvals
						St	HAS	SS	Al NF	YM	
✓✓	✓✓✓				>180	✓					
	✓✓✓				>190			✓			
					>150					✓	
					>160				✓		
✓					>160	✓					
✓					>160	✓					
✓					>160				✓		
✓					> 220	✓					
					>300		✓				

Testing and Cleaning

Residue-free leak testing and temporary corrosion protection.

HYDRO -, ULTRASONIC TESTING MEDIA & AUXILIARIES

PRODUCT	FEATURES
WEDOLiT® AW 5700	Ultrasonic testing
WEDOLiT® CS 8208	Synthetic medium with very good corrosion protection and low foam formation.
WEDOLiT® FW 3500	Leak test pressure medium
WEDOLiT® C78-1	Water-soluble, long term quenching medium based on polymerized hydrocarbons.
WEDOLiT® K 102	Water-miscible corrosion preventive with high material compatibility

Tube Sawing

Minimum Quantity Lubrication (MQL) for precision cutting.

TUBE SAWING SOLUTIONS

PRODUCT	FEATURES
WEDOLiT® FN 1940-60	Minimum quantity lubrication for forming and sawing
WEDOLiT® N-52	Rattunde approved cutting oil for sawing of tubes
WEDOLiT® CN 8471-36	Ester based minimum quantity lubrication for forming and sawing

TYPE	ph	Boron	Amin	Compatibility				Approvals
				St	GS	SS	Al NF	
Ultrasonic testing				✓				
Ultrasonic testing	9,4	✓	✓	✓	✓	✓		
Leak test pressure medium		✓	✓	✓				FF Fluid Forming
Polymer quenching medium				✓	✓	✓	✓	
Water miscible Corrosoin Preventive								Rattunde

TYPE	Flashpoint	Compatibility					Approvals
		St	GS	SS	Al NF	CU	
Ester based Tube Drawing product	>180	✓	✓	✓	✓	✓	
Mineral oil based forming and cutting							Rattunde
Ester based Minimum Quantity Lubrication	>225	✓	✓	✓	✓	✓	

ENGINEERED FOR YOUR PROCESS

Corrosion Protection

An essential part of the metal production process

Types of Corrosion Protection

- **Oil-based protection:** For dry components — applied by dipping, spraying, or brushing.
- **Dewatering fluids:** Displace moisture from wet surfaces for immediate corrosion prevention.
- **Aqueous systems:** Clean and protect in one step at 50–60 °C, ensuring a fast corrosion protection film formation.

According to DIN 50902, temporary corrosion protection covers all measures designed to protect metal surfaces during transport, storage, or production downtime – through easily removable substances.

Our products combine mineral and synthetic oils, waxes, and active polar additives (such as sulfonates, lanolin, and amines) to ensure reliable protection.

CORROSION PREVENTATIVES

PRODUCT	FEATURES
Dewatering fluids with short-term corrosion protectionoffers short-term corrosion protection, VOC free*	
WEDOLiT® AS 1012	Very fast dewatering, offers short-term corrosion protection, lower flash point, very fast evaporation
WEDOLiT® AS 3040	Very fast dewatering, offers short-term corrosion protection, higher flash point, fast evaporation
WEDOLiT® AN 6011	Very fast dewatering, offers short-term corrosion protection, VOC free*
Dewatering fluids with medium to long-term corrosion protection	
WEDOLiT® AS 2251	Corrosion protection with an outstanding performance, for overseas transportation
WEDOLiT® AS 4116	Thin film wax corrosion protection, no influence on subsequent processes
WEDOLiT® AS 4116-3	Corrosion protection with a very good performance, for overseas transportation
WEDOLiT® AN 7114	VOC free* product with a high performance
Wax dispersion with long-term corrosion protection	
WEDOLiT® AS 1723	Thick waxy film potentially for outdoor storage
Straightening oils	
WEDOLiT® AS 4111	Corrosion protection with additional forming properties
WEDOLiT® AN 9921-100	VOC free*, available with different flash points and performance levels
Water-miscible corrosion protection	
WEDOLiT® AE 1030	Water-miscible, application at approximately 60°C, for steel and non-ferrous metals, Rattunde approval
Water-miscible corrosion protection	
WEDOLiT® K 102	Water-miscible, application at approximately 60°C, for steel and non-ferrous metals, Rattunde approval

Film structure	Viscosity @20°C [mm²/s]	Film thickness g/m²	Flashpoint [°C]	Dewatering effect [sec]	Water separation [min]	Humidity test [days]	Salt spray test [hours]
Oily		0,3	> 40	≤ 5	4	10	< 1
Oily		0,3	> 60	≤ 5	4	7	< 1
Oily		0,3	> 100	≤ 5	4	7	< 1
Oily		1,4	> 40	≤ 30	3-6	1	<15
Oil		0,5	> 60	≤ 30	9-12	3-6	---
Oily		2,4	> 60	≤ 30	3-6	1	---
Oily		1,5	> 120	≤ 30	17	50	2
Waxy		10	> 26	---	---	720	200
Oily		1,7	> 60	≤ 60	4 - 6	70	8
Oily		1,2	> 100	---	18 - 18	60	24
Oily		0,5	> 160	≤ 30	12	14	< 1
Oily		1,2	---	---	---	> 2	> 1

*Volatile Organic Compounds (VOC) free according to 31st BImSchV

Case Study

WEDOLiT® DRASTICALLY REDUCED FOAM, RESIDUE AND EXTENDED SUMP LIFE

Automotive Parts Manufacturer in Thailand Reduces Coolant Consumption by 42% with WEDOLiT® FW 7652

The customer is a well-respected and growing auto and motorcycle parts manufacturer. They specialise in producing stainless steel parts for exhaust systems, especially pipes and inlet tubes. The company has been instrumental in the expansion of the automotive industry in Thailand and South Asia.

« WEDOLiT® drastically reduced foam, residue and extended sump life. »

The Challenge

One of the biggest problems the customer encountered during manufacturing was their previous coolant left a sticky residue on the tubes. The fluid also created substantial foam during operation, contributing to lowquality surface finishes for their parts. The additional cleaning and reworking significantly reduced throughput and labour efficiency.

Additionally, the sticky residue and foam caused the machines, dies and rollers to get dirty and accumulate contaminants, requiring special cleaning that further reduced production output. The foam, along with a short sump life, led to frequent fluid changes, driving up manufacturing costs.

« After switching to the new product, surface finish for completed parts immediately improved. »

The Solution

The customer transitioned to WEDOLiT® FW 7652, a speciality fluid best suited for wire drawing and forming welded stainless steel tubes. In addition to providing superior lubrication and forming ability, FW 7652 offers significant corrosion protection, even at a concentration of four to six percent. The product's excellent thermal stability allows it to be used throughout the production process, including initial forming, high-heat welding, calibrating and sawing.

The Results

WEDOLiT® FW 7652 produces no foam and keeps workpieces and machines clean throughout the manufacturing process. After switching to the new product, surface finish for completed parts immediately improved. Machine operators also reported a better shop environment due to less odour and significantly improved tramp oil rejection over their previous product.

Another advantage is WEDOLiT® FW 7652 features a robust formulation and excellent sump life, even without additional tank side additives. Combined with a lower carry-off rate, the new WEDOLiT® formula has allowed the customer to lower their fluid usage from 7.7 imperial gallons per month down to 4.4, a 42 percent decrease.

In addition to providing superior lubrication and forming ability, WEDOLiT FW 7652 offers significant corrosion protection.

THE NUMBERS

- **Customer drastically reduced foam, residue and extended sump life**
- **Reduced fluid consumption 42%**
- **Decreased residue on tubes, leading to lower production costs**

GET IN TOUCH WITH OUR EXPERTS

Discover how partnering with WEDOLiT® can transform your pipe manufacturing processes with technology-led lubrication. Whether aiming to enhance productivity, reduce costs, improve cleanliness of the pipes or improve sustainability, our expert team is ready to tailor solutions that fit your production requirements.

See the difference with WEDOLiT®.

Master Fluid Solutions WDG GmbH
Hasselsstraße 6-14
D-40597 Düsseldorf
Deutschland
Telefon +49 211 41 72 82 00
info-eu@masterfluids.com

www.masterfluids.com