



Metalworking fluids

Products & services catalog

Protecting beyond just tools



TotalEnergies



TotalEnergies

Major energy player

- TotalEnergies is a broad energy company that produces and markets energies on a global scale: **oil and biofuels, natural gas and green gases, renewables and electricity**
- Our **105,000** employees are committed to energy that is ever more affordable, clean, reliable and accessible to as many people as possible
- Active in more than **160** countries, TotalEnergies puts sustainable development in all its dimensions at the heart of its projects and operations to contribute to the well-being of people



Our history

- The Company's history began in **1924** with the creation of Compagnie Française des Pétroles (CFP)
- We have been innovating for nearly **100** years, to meet our customers' needs and expectations, throughout the world
- The Company was branded **Total** in 2003, after merging with PetroFina then Elf. In 2018, Maersk Oil joined TotalEnergies





Metalworking Fluids SUMMARY



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Innovative fluid technology

Folia

The **Folia** range is a revolution in the field of metalworking. It is a biosourced and water-based fluid free of oils and emulsifiers.

With a high lubricity and an excellent cooling power, it offers to users a unique solution for multiple metalworking operations.

HEALTH



- Less hazardous components
- Boron free technology
- Limited pictograms in the Safety Data Sheet

SAFETY



- No odor
- No dermatitis
- No fumes
- No oily machines / workspace

PERFORMANCE



- Longer tool life
- Longer fluid timespan
- Less consumption
- Increased productivity

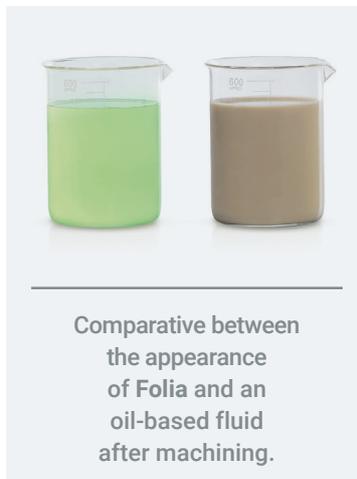


**RENEWABLE
AND CLEAN
SOURCE LUBRICITY**

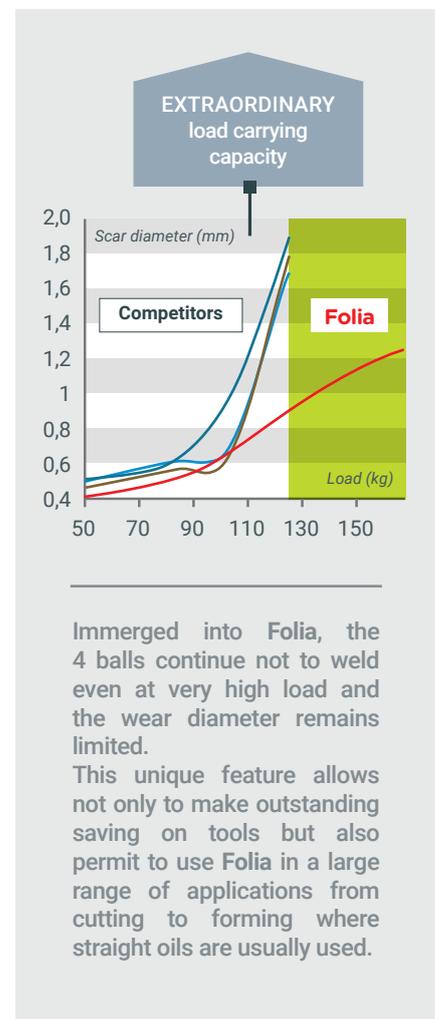
OUR LUBRICANTS
PROTECT BEYOND
JUST TOOLS



ASPECT



FOUR BALL TEST ASTM: D2783





More savings



Eco-friendly



Higher productivity



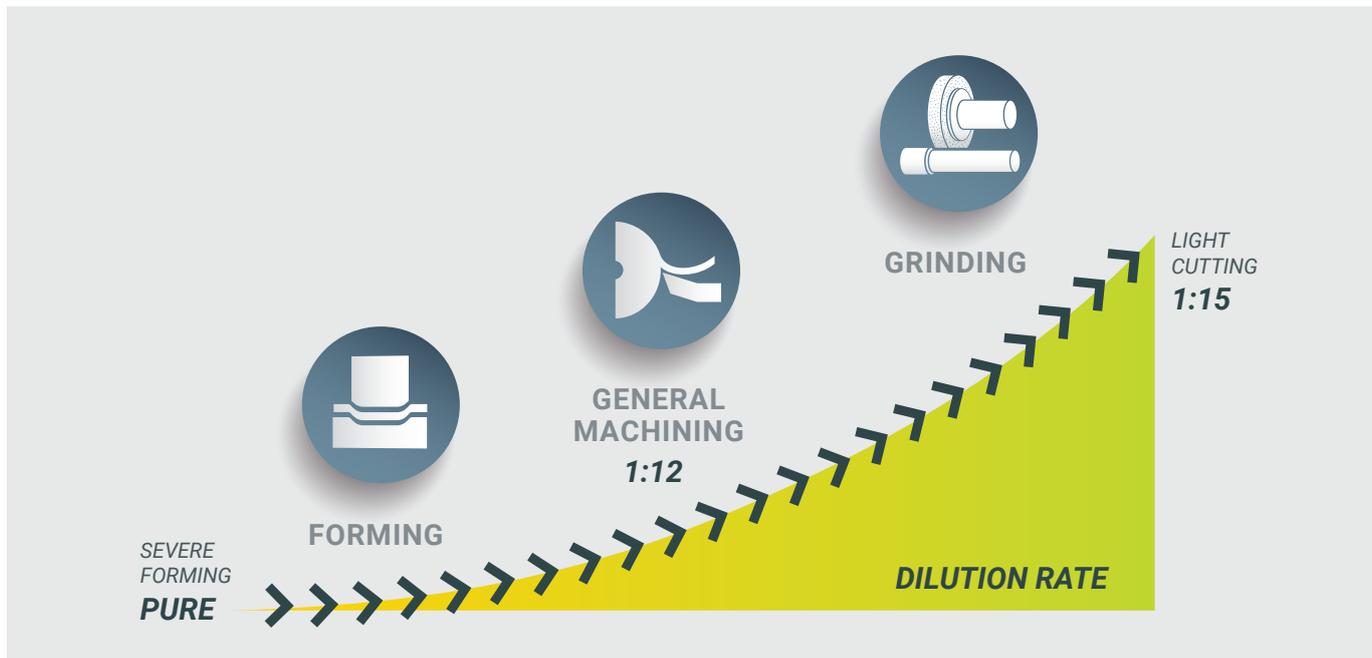
More satisfied employees



Less maintenance

Using advanced technologies, we bring to market the first and only metalworking fluid, that replaces standard oils with biosourced polymers, providing the best performance for the operators and their environment.

MULTI-SERVICE PRODUCTS



PRODUCT OVERVIEW

Products	Materials							Applications			
	Aluminum (Si >7%)	Copper alloys	Carbon steels	Cast iron	Carbide tool steels	Stainless steels	Inconel & titanium alloys	Grinding	Milling, Sawing, Turning, Threading	Drilling, Reaming, Tapping	Broaching, Stamping
Folia B 7000	•	•	•••	••	••	•	••	•••	•••	••	
Folia G 5000	•	•	••	•••	•	••	•	•••	••	••	
Folia W 7000*		•	••	•••	•••	••	•	•••	••	••	
Folia Y 7000*	•	•••	••	••	•	•	•	•	•••	••	

* To be released soon

Legend

- Possible
- Suitable
- Designed for



Water-based cutting fluids Coolants

All our **water-based** fluids are formulated to satisfy the highest technological requirements for your industrial applications while simultaneously providing maximum safety for your operators. In particular they contain no formaldehyde releaser.

TotalEnergies Lubrificants offers a wide range of coolants: Emulsion (macro-emulsions) with **Lactuca**, Semi-Synthetic (micro-emulsions) with **Spirit**, Synthetic fluids with **Vulsol**.

EMULSION	SEMI-SYNTHETIC FLUID	SYNTHETIC FLUID
Lactuca	Spirit	Vulsol
Dedicated to lubrication	Perfect balance between cooling and lubrication	High performance without mineral oil
		

Their formulation guarantees machining performance for any type of metals and severity of operations:
Reinforced antiwear properties | Extended anticorrosion properties | Outstanding resistance to microorganism development | Improved antifoaming properties

FOCUS ON THE LATEST TECHNOLOGY:

- Spirit 3000
- Spirit 5000
- Spirit 7000
- Spirit 5000 X
- Spirit 7000 X

Formulated with the safest molecules available on the market



Spirit 5000 X & Spirit 7000 X:

Health



Biocide free technologie
| No labeling

Safety



In-house technology
avoiding dermatitis

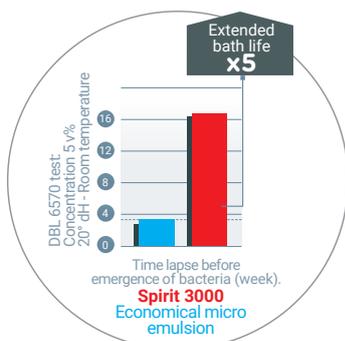
Performance



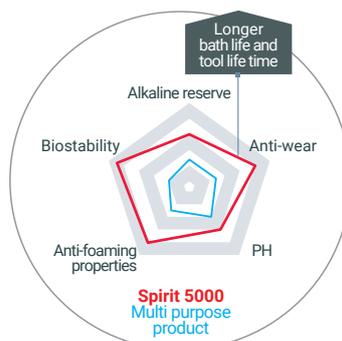
Longer tool life thanks to
a high lubricity content

The new **Spirit X** series offers “X-TRA safe + X-TRA performance = X-TRA care for you and your operations”

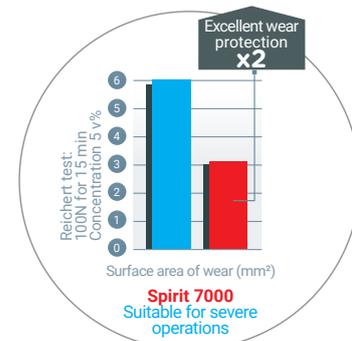
CUSTOMER BENEFITS USING SPIRIT RANGES:



Spirit 3000 is a water based fluid, optimized for grinding and general machining. It has been **specially designed for cast iron and soft & medium hard steels.**



Spirit 5000 is a water based fluid, optimized for general machining and grinding. It has been specially designed **for cast iron, steels and aluminum.** Its technical performances enable more efficient operations for a better productivity.



Spirit 7000 is a improved fluid for demanding operations and customers. Its technical properties are specially designed **for heavy machining and hard metals.**

PRODUCT OVERVIEW

Products	Materials							Machining operations				HSE profile
	Cast iron	Low & medium alloyed steels	High alloyed & stainless steels	Titanium	Aluminum alloys (Si > 7 wt%)	Aluminum alloys (Si < 7 wt%)	Yellow metals	Grinding	Light machining	General machining	Heavy machining	
Lactuca												
Lactuca LT 3000	•	•••	••		•		•••		•••	•••		••
Lactuca WBF 9400	•	•••	•••	•	••		••		•••	•••	••	••
Spirit												
Spirit 5000 X	•••	•••	••		••			•••	•••	•••	•	•••
Spirit 7000 X	•	•••	•••	•••	•••	•••	••	•	•••	•••	•••	•••
Spirit 3000	•••	•••	•					•••	•••	•••		••
Spirit 5000	•••	•••	••		••			•••	•••	•••	•	••
Spirit 7000	•	•••	•••	•••	•••	•••	••	•	•••	•••	•••	••
Spirit 5000 F	•••	•••	••		••			•••	•••	•••	•	•
Spirit WBA 5600	•	•••	•••	••	•••		•••	•	•••	•••	••	••
Spirit WBF 7200	•	•••	•••	••	•••		••	•	•••	•••	••	••
Vulsol												
Vulsol MSF 5200	••	•••	•					•••	•			••
Vulsol MSF 7500	••	•••	••	•				•••	••	•		••
Vulsol WBF 7219	••	•••	••	•				•••	••	•		••

Brass	LT
Without boron and amine	WBA
Without boron and formaldehyde	WBF
Multiservice and without formaldehyde	MSF

Legend	
•	Possible
••	Suitable
•••	Designed for



Neat cutting oils Valona

Valona cutting oils cover a wide range of light to severe machining operations on various materials, while breaking new ground on the health, safety and environment front.

1 - Valona BIO range consists of rapidly biodegradable, vegetable-based neat cutting oils. Formulated from carefully selected mineral oil-free base and performance additives, Valona BIO products are the ultimate solution to answer the following requests:



Valona BIO can be used in Minimum Quantity Lubrication (MQL) systems.

Health



- No carcinogenic compound (no Polycyclic Aromatic Compounds)
- No labeling in the MSDS (even at low viscosities)
- No more dermatosis
- Reduced mist

Safety



- No odor
- Reduced fire risks (high flashpoint and firepoint)

Environment



- Bio-sourced
- Bio-degradable

Performance



- Longer tool life
- Less oil consumption
- Increased productivity

2 - Valona HC range consists of advanced mineral base oils. These oils undergo severe refining which modifies the nature of the molecules and makes them:

SAFE/EASY TO USE

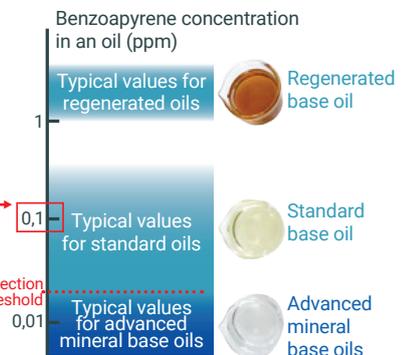
- Odorless
- Transparent
- Poor in aromatics (PAH*)
- Less evaporative

PERFORMANT

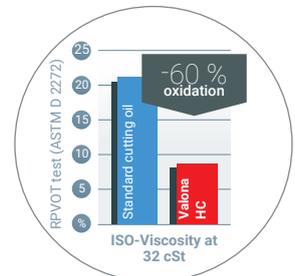
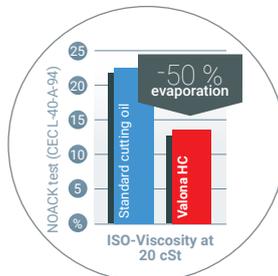
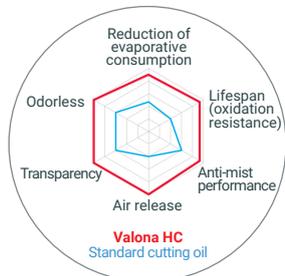
- Low-mist
- Low-foam
- Lower consumption
- Longer lifetime

Our Valona HC range is composed exclusively of advanced mineral base oils, with a benzoapyrene (BaP)** content below detection thresholds.

The INRS*** publishes a maximum recommended concentration value for benzoapyrene (BaP) in cutting oils.



*Polycyclic Aromatic hydrocarbon, ** Benzoapyrene is a molecule belonging to the Polycyclic Aromatic Hydrocarbon (PAH) family, classified as carcinogenic, *** National Research and Safety Institute for the prevention of occupational accidents and diseases in France. For more information: www.inrs.fr



3 - Valona MQL range is dedicated to Mist Quantity Lubrication (MQL), covering light to severe machining operations on various metals.

Valona MQL neat cutting oils ensure:

- Reduced oil consumption
- Higher productivity and lower production cost
- Better valorization of metal chips



PRODUCT OVERVIEW

Products	Materials					Machining operations				Specifications Viscosity at 40°C (mm ² /s or cSt)
	Yellow-metals	Aluminum	Steels	Stainless steels	Carbide tool	Honing	Grinding to light machining	Light-severe machining	Very Severe machining	
Valona BIO										
Valona GR 7007 BIO			7
Valona MS 7010 BIO		9
Valona MS 7016 BIO		15
Valona MS 7022 BIO	25
Valona HC										
Valona GR 3008 HC			8
Valona GR 5005 HC		5
Valona GR 7007 HC		8
Valona GR 7012 HC		14
Valona GR 9005 HC			6
Valona MS 5515 HC				15
Valona MS 5020 HC			22
Valona MS 5032 HC*			33
Valona MS 7009 HC		10
Valona MS 7023 HC		23
Valona MS 7116 HC		15
Valona MS 7046 HC*			43
Valona ST 9013 HC			13
Valona ST 9037 HC			42
Valona ST 9122 HC			22
Valona BR 9015 HC				15
Valona MQL										
Valona MQL 3036 BIO			36
Valona MQL 3046			46
Valona MQL 5035		35

* Can be used for machine tool lubrication

Grinding and/or honing	GR
Machining of ferrous and non-ferrous metals	MS
Machining of mild to high alloyed steels	ST
Broaching	BR
Minimum Quantity Lubrication	MQL

Legend

.	Possible
..	Suitable
...	Designed for

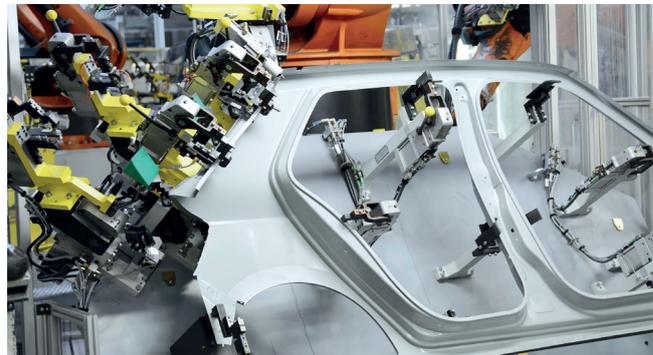


Forming fluids

Martol

The **Martol** range brings you multi-purpose and innovative products for metalforming applications that require optimized lubrication. This goes towards:

- Reduced VOC emissions and improved air quality
- Minimal or no degreasing step after stamping operation
- Enhanced forming capacity for stringent processes
- Longer tool lifetime and higher production rates
- Decrease in oil consumption



THREE TECHNOLOGIES FOR ALL YOUR NEEDS

1 - NEAT OILS

Our range of neat oils covers all the physical and chemical properties needed for the success of your cold forming operations: viscosity, lubricity, extreme pressure and non-extreme pressure properties, etc.

With our range, you are assured to find the suitable product for your needs.

FACING THE CHLORINE ISSUE

This use of chlorine is more and more regulated worldwide.

This is why TotalEnergies Lubrificants offers:

- Highly additivated sulfurised products, to be used successfully under very high loads
- New generation of chlorinated products that are non toxic following 1999/45/EC, or CLP



2 - SOLUBLE OILS

As the forming operations give off a lot of heat, our **Martol** soluble oils combine strong lubricating and cooling powers.

When used as an emulsion in water, they reduce product consumption.

3 - VANISHING OILS

Formulated from light petroleum cuts, vanishing oils allow to reduce or even eliminate degreasing operations.

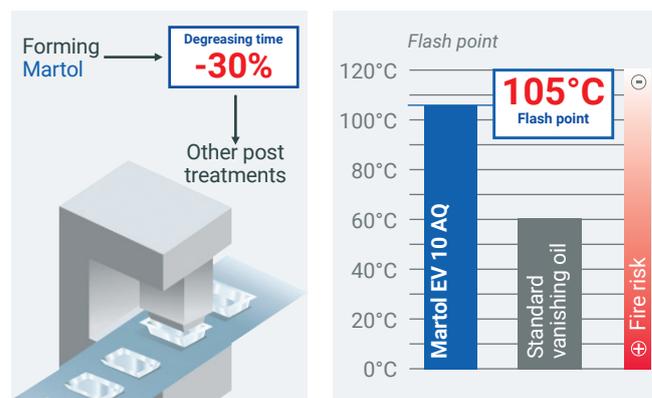
They are perfectly suited to medium difficulty or high throughput operations.

NEW GENERATION OF VANISHING PRODUCTS TO REDUCE VOC* EMISSIONS

The product does not contain any VOC and still has a fast evaporating rate, thus limiting the degreasing operations.

At the same time, the high flash point limits the fire risk to ensure the safety of the workshop, thus decreasing all related costs.

LIMITED DEGREASING TIME TO IMPROVE PRODUCTIVITY



*Volatile Organic Compound

PRODUCT OVERVIEW

Products	Materials					Forming operations				Specifications	
	Stainless Steel	Steel, galvanized steel	Aluminum	Copper	Thickness (mm)	Drawing	Deep drawing	Wire drawing	Stamping / Punching / Blanking	Flash point (°C)	Viscosity at 40°C (mm ² /s or cSt)
Neat oils											
Martol AL 150	...	•	•	•	≤ 100	•••	•••	•••	••	> 180	147
Martol AL 60	•••	•	•	•	≤ 10	•••	•••	••	•••	> 180	55
Martol AL 20 HC	•••	•	•	•	≤ 1	•••	•	•	••	> 180	25
Martol EP 405 CF	•••	•••	•	•	From 2 to 5	•••	•••	••	••	> 180	400
Martol EP 235 CF	••	••	•	•	≤ 3	•••	•••	••	••	> 180	230
Martol EP 100 CF	••	••	•	•	≤ 3	••	••	••	••	> 180	101
Martol EP 65 CF	••	••	•	•	≤ 3	••	••	••	••	> 180	60
Martol EP 5 CF	••	••	••	••	≤ 2	•	•	••	••	94	3
Martol EP 185*	•••	••	••	•	From 10 to 100	•••	•••	•••	•••	> 180	175
Martol EP 79*	•••	••	••	•	From 1 to 10	•••	•••	••	••	> 180	78
Vanishing oils											
Martol EV 45	•	•	•••	•	< 4	•	•	•••	••	62,5	2,1
Martol EV 40 CF	•	•	•••	•	< 4	•	•	•••	••	59,5	1,5
Martol EV 10 AQ	•	•	•••	•	< 2	•	•	•••	••	104	2,5
Martol EV 10 CF	•	•	•••	•	< 1,5	•	•	•••	••	58,5	1,3
Martol LVG 25 AQ**	••	•••	•	•	< 2	••	••	••	••	105	2,8
Martol LVG 25 CF**	••	•••	•	•	< 2	••	••	••	••	74	1,7
Martol LVG 15 CF**	••	•••	•	•	< 1	••	••	••	••	59	1,3
Food manufacturing oils (FMO)											
Martol FMO 235 CF	•••	•••	•••	•••	•••	•••	•••	•••	•••	270	235
Martol FMO 75 CF	•••	•••	•••	•••	•••	•••	••	•••	•••	256	75
Martol FMO 15 CF	•••	•••	•••	•••	•••	•••	•••	•••	•••	240	15

* Non toxic according to 1999/45/EC

** Both the oil and its additives can be washed away with an increase in temperature (brazing, annealing, etc...)

Aluminum	AL
Extreme Pressure	EP
Standard vanishing	EV
Thermal degreasing	LVG
Air Quality to reduce VOC emissions	AQ

Legend

- Possible
- Suitable
- Designed for



Quenching oils

Drasta

Drasta quenching oils match all thermal treatment requirements and all types of installation. Formulated from base oils selected for their exceptional resistance to oxidation, they offer a cost-effective means of enhancing the mechanical properties of components.

Drasta C series are cold quenching oils based on a technology that reduces odors and significantly increases the flash point limiting the risk of fire. The very low volatility reduces evaporation losses making it more user friendly. Its oxidation resistance limits the soot and extends the lifetime of the oil.

Drasta C series are adapted to meet all heat treatment needs.

Drasta H series are hot quenching oils specially formulated to ensure longer sump life.



PRODUCT OVERVIEW

Products	Quenching Sump Temperature (°C)	Maximum Cooling Speed (°C/s)	Flash point (°C)	Typical applications
Drasta				
Drasta C 1022	20-80	53	230	Steels with high hardenability (torsion bars, springs)
Drasta C 5022	20-80	90	222	Screws and bolts
Drasta C 7025	20-80	102	228	Steels with high martensite start (leaf springs)
Drasta C 9022	20-80	113	232	Steels with low martensite start (bearings)
Drasta H 5160	120-160	91	282	Gears



Electrical discharge machining fluids

Diel



The **Diel** range consists of multiservice fluids for spark erosion, from roughing to finishing operations.

Diel fluids are formulated from advanced base oils, contributing to the continuous improvement initiatives in regards to Health, Safety and Environment.

Diel fluids comply with the European directives concerning the VOC emissions.

Diel fluids ensure:

- Extended bath lifetime due to high resilience to oxidation
- Reduced fire risks due to a high flash point
- Safer use of the fluid due to very low aromatic content



PRODUCT OVERVIEW

Products	Applications	Approvals	Specifications	
			Viscosity at 40°C (mm ² /s or cSt)	Classifications
Electrical discharge machining				
Diel MS 5000	Preliminary work and semi-finishing	Agie-Charmilles, Krupp-Nassovia	3,9	ISO-L-MHA
Diel MS 7000	Semi-finishing work and finishing for complex forms and precise dimensions	Agie-Charmilles, Ona, Zimmer & Klein, Nassovia, Waldrich Siegen	2,4	ISO-L-MHA, NADCAP (DMP66)
Diel MS 9000	Finishing for complex forms and precise dimensions	Agie-Charmilles, Zimmer & Klein, Nassovia, Waldrich Siegen	1,8	ISO-L-MHA, NADCAP (DMP66)

Machining of ferrous and non-ferrous metals	MS
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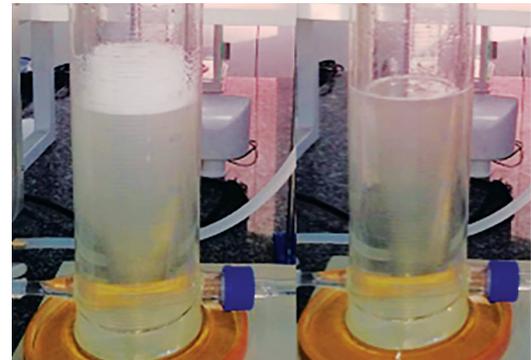


Post-treatment additives
Serade

The **Serade** range consists of post-treatment additives. Used at the right time, based on the recommendations of your technical advisor, these additives allow you to extend the life of your soluble cutting fluid baths in service.

Serade products are best used with our LubAnac Soluble service.

LubAnac Soluble service provides analysis report of different parameters of your bath(s) and our recommendations for using **Serade** post-treatment additives if necessary.



Left : foaming
Right : use of Serade Antifoam

PRODUCT OVERVIEW

Products	Applications	Functions
Serade		
Serade System Cleaner	System cleaner for machine tools	Cleans machine tools before draining
Serade Antifoam	Defoamer for emulsions and synthetic soluble fluids	Avoids foaming
Serade ACR Ferrous	Corrosion inhibitor for ferrous metals	Avoids corrosion of ferrous metal parts
Serade ACR Non-Ferrous	Corrosion inhibitor for non-ferrous metals	Avoids corrosion of non-ferrous metal parts
Serade WQ Minus	Water hardness decreasing agent	Avoids the formation of white deposits due to over-hard water
Serade WQ Plus	Water hardness increasing agent	Avoids foam due to over-soft water
Serade WQ Buffer	pH increasing agent	Extends lifetime of the bath
Serade AW Emulsion	Anti-wear agent for emulsions	Decreases friction wear
Serade AW Synthetic	Anti-wear agent for synthetic fluids	Decreases friction wear
Serade STAB Emulsion	Stabilizing agent for emulsions	Use in case of severe contamination by grease and oils (e.g. tramp oil)
Serade STAB Synthetic	Stabilizing agent for synthetic fluids	Use in case of severe contamination by grease and oils (e.g. tramp oil)

Product data sheets and your technical advisor(s) help you define the right concentration of **Serade** post-treatment additives for your situation.



Industrial solutions

Degreasing



Finadet detergents are designed to clean production areas and can be used in the food industry and for difficult cleaning of all types of pollution.

Finasol solvents are dispersants for cleaning engines and a very wide range of materials. Their properties permit eliminating greases and removing insoluble components, without affecting the quality of the items cleaned.



PRODUCT OVERVIEW

Products	Type	Applications	Specific advantages	Methods of application
Finadet				
Finadet SW	Special washing machine detergent	Special cleaning of parts placed in closed washing machines	<ul style="list-style-type: none"> • Automatic • Foam free 	Machines (cloths, rushes)
Finasol				
Finasol BAC	Fast evaporating degreasing agent	<ul style="list-style-type: none"> • Degreasing mechanical parts: machined parts, chassis, machine tool frames, bearings, pinions, filters, injection moulds • Preparation of surfaces before assembly 	<ul style="list-style-type: none"> • Fast evaporation • Compatible with all metals, most plastic materials and elastomers 	Fountain cleaner brush: high settling capacity
Finasol BIO*	Pure or diluted degreasing agent, 100 % plant based, unlabeled	Cleaning of all engines, elimination of fuels and resins, removal of tar, bitumen, floor cleaning	<ul style="list-style-type: none"> • Odorless, biodegradable and non toxic • Not aggressive for elastomers or plastics 	Fountain cleaner brush, spraying
Finasol MF	Emulsifiable degreasing agent	Multipurpose	<ul style="list-style-type: none"> • Leads to the complete dissolution of oily pollutants and the removal of insoluble components 	Immersion, brush, low pressure spraying, brush, straight

* No volatile organic compounds (VOC)

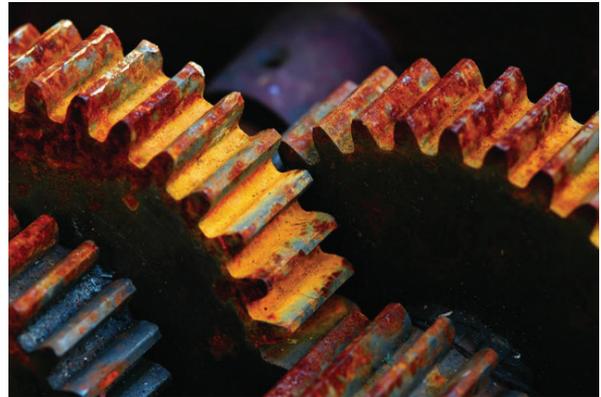


Rust preventive oils Osyris

Osyris oils are designed to protect parts from the risks of corrosion during storage and transportation. TotalEnergies Lubrificants offers a wide range of products in accordance with the required properties of the protective film (oily, waxy or varnish).

Osyris can be:

- Applied to all ferrous metals, from cast iron to alloyed steels
- Applied by dipping, spraying and brush application
- Removed with the aid of solvents and alkali cleaners



PRODUCT OVERVIEW

Products	Type of the film			Protection				Type of product		Flash point (°C)
	Oily	Waxy	Varnish	< 6 months	6-8 months	8-12 months	> 18 months	Oil	Solvent	
Osyris										
Osyris Y 1000	•			•				•		> 150
Osyris Y 4000	•				•			•		> 150
Osyris Y 5000	•					•		•		> 150
Osyris DWX 3000		•			•			•		< 60
Osyris DWY 4000		•			•			•		> 60
Osyris DWY 5000		•				•		•		> 60
Osyris DWY 6000		•				•		•		> 60
Osyris DWL 3550	•				•			•		> 60
Osyris X 9100			•				•	•		< 60

Solvent based	X
Oil-based	Y
Dewatering & flash point < 60°C	DWX
Dewatering & flash point > 60°C	DWY
Dewatering & flash point > 60°C & low odor	DWL



Spindle & Slideway oils

Drosera



Drosera range offers a wide range of products for all parts of machine tools (hydraulics, slideways, gears).

- High speed machine spindles (grades 5, 10, 15 and 22) and very high speed (grade 2)
- Machine tool slideways under all conditions of speed and load (grades 68 to 320)
- Hydraulic circuits for hydraulic pumps and motors (grades 32 and 46)
- Gear boxes and feed mechanisms of all types with or without wet electro magnetic clutches (grades 68 to 320)
- Hydrodynamic lubrication of mill roll stands during grinding (grade 460)

Drosera oils offer the following advantages:

- Very low coefficient of friction
- Anti-mist properties
- Very good foaming resistance
- Very good oxidation resistance
- Very good protection against rust
- Very good anti-wear properties
- Good filterability



PRODUCT OVERVIEW

Products	Applications	Specific advantages	Specifications
			<i>Viscosity at 40°C (mm²/s or cSt)</i> <i>Classifications</i>
Spindle oil			
Drosera MS	Spindle oils for lubrication of high-speed machine spindles	High speed machine spindles (grades 5, 10, 15 and 22) and very high speed (grade 2)	2, 5, 10, 15, 22 ISO 6743-2: FD 2-5-10-15-22
Multipurpose oil (hydraulics, slideways, gears)			
Drosera MS	Multipurpose range for all machine tool parts depending on the viscosity of the lubricant: hydraulics, slideways, gears, spindle movements, feed and gear boxes	Wide range of applications	32, 46, 68, 100, 150, 220, 320, 460 Depending on viscosities: ISO 6743-4: HG 32 ISO 6743-13: GA 68-100-150-220 DIN 51502: CGLP 46-68-100-150-220-320-460
Drosera HXE 68	Way lubricant including those lined with synthetic resin, feed and gear boxes	Compatibility with cutting fluids, including aqueous based fluids	68 ISO 6743-13: GB 68 DIN 51524 Part 2: HLP 68 DIN 51517 Part 3: CLP 68 DIN 51502: CGLP 68
Drosera HXE 220	Way lubricant including those lined with synthetic resin, feed and gear boxes	Compatibility with cutting fluids, including aqueous based fluids	220 ISO 6743-13: GB 220 DIN 51502: CGLP 220 DIN 51517 Part 3: CLP 220

Machining of ferrous and non-ferrous metals

MS



LubInsight
maintenance planner

LubInsight maintenance planner software optimizes your oil change strategy. Built on the expertise of our engineers, it offers you to:

- Increase efficiency and savings of your maintenance management
- Monitor lubricant parameters and analyses with a single tool
- Assert your quality and safety management through management of lubricant documentation and critical points

LubAnac: in use oil analysis

By analysing your oil in use, **LubAnac** will provide you vital information on its working conditions. So switching from remedial to predictive maintenance will:

- Reduce your operating costs
- Anticipate and plan maintenance operations to perform them at the best time
- Optimize drain intervals and extend the lifetime of your equipment
- Improve the reliability and performance of your equipment

THE IN-DEPTH DIAGNOSIS SYSTEM FOR CUTTING FLUIDS IN METALWORKING

LubAnac Soluble is a personalised diagnosis system for soluble cutting fluids used in metal working. It is performed by the TotalEnergies Lubrificants Soluble Fluid production site in Osnabrück, Germany. The experience and knowledge of their experts permit precision results at the service of the customers.

LubAnac Soluble is recommended for:

- Monitoring of the bath to get the best operating conditions at the lowest process cost
- Checking the product concentration, the stability and the fluid performance
- Extending lifetime of the bath and the tools in an eco-responsible way

MEASURED CHARACTERISTICS

LubAnac Soluble is offered in 3 sets:

- **Basic:** all essential characteristics of the emulsion are checked like product stability
- **Standard:** basic set + water hardness and conductivity especially
- **Expert:** a full analysis including a bacterial check and anti-corrosion properties are tested for all baths, including those with longer periods of stand still

	Basic	Standard	Expert
Smell	•	•	•
Appearance	•	•	•
Total hardness		•	•
Nitrite content		•	•
Bacteria			•
Fungi			•
Refractometer Brix	•	•	•
pH	•	•	•
Tramp oils	•	•	•
Refractometer corr factor	•	•	•
Concentration Ref	•	•	•
Concentration RA			•
Chip corrosion test			•
Conductivity		•	•
Total dissolved solids		•	•

Soluble fluid bath monitoring service to guarantee the quality of the machining and preserve the life of equipment.

YOUR CHALLENGES

Efficiency and productivity are your priorities
The reliability of your static equipment is essential
Your high value-added equipment requires daily checks to ensure that it is working properly.

OUR SOLUTIONS

At TotalEnergies, we care about our customers' satisfaction and we work every day to provide the best experience possible.
The aim of this innovation is to offer a better and faster recommendation to maintain baths in optimal conditions and increase their lifetime.

ADDED VALUE

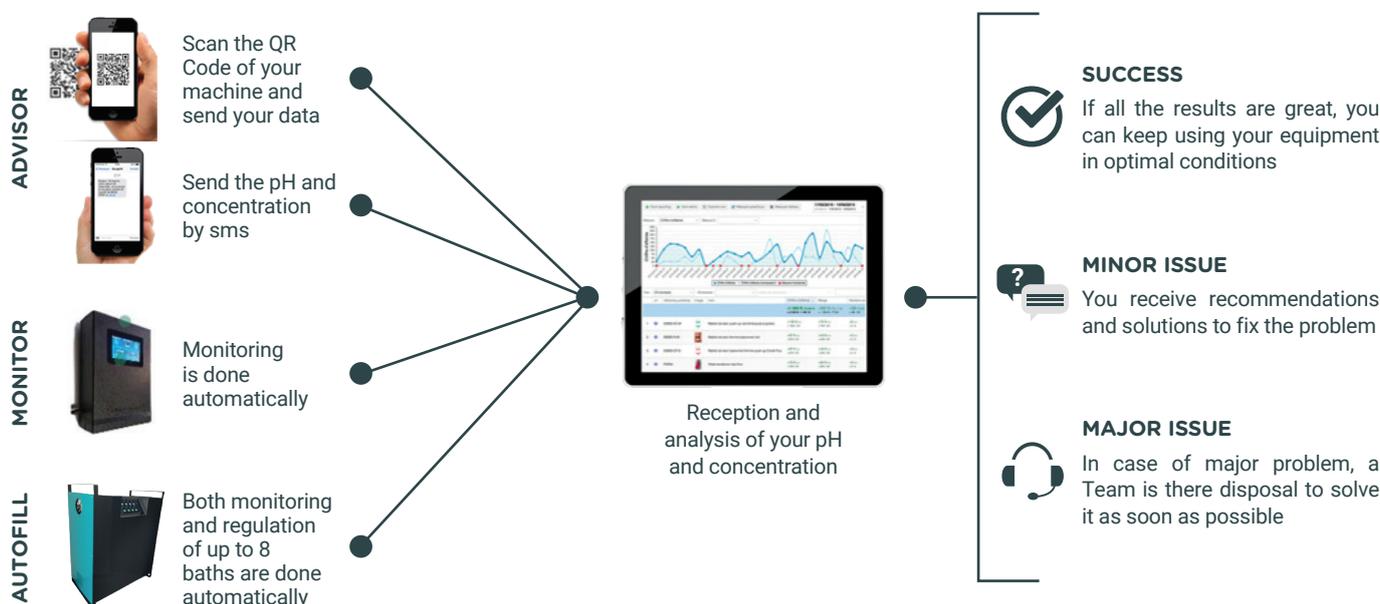
Reduced Costs: automatic monitoring aims to reduce your operating costs

Safety: regularly checked equipment highly reduce possible incidents

Efficiency: access to many information concerning your machine park in order to ensure that productivity and lifetime of your equipment are well tracked

Core Activity: digitalizing the control of your static equipment will allow you to focus on the essential, your business

Time Saving: optimizing the management of your equipment and increasing your employee's productivity by simplifying the fluid analysis and monitoring process



LubPilot
storage

A UNIQUE DIGITAL AND INNOVATING SERVICE

Thanks to our smart sensors, you will be able to:

- Monitor in real time the lubricants' level of your workshops' drums
- Be monitored on-time for the top up

Maximize your operational performance and your daily efficiency

AN EASY SET UP SERVICE

- 1 Automated secured connectivity (Sigfox). Five-year battery autonomy on the sensors
- 2 Easy screwing on the drum opening
- 3 Notification when the level reaches a pre-defined threshold
- 4 Lubricants' activity monitoring by anticipating needs

QUICK BENEFITS

					
Operational costs reduction	Top up monitoring	Improved shared information between operators	Alerts to avoid on-site shortages	Accurate concentration assistant	Product's needs anticipation

A major player

With our production, supply chain and commercial presence in more than 160 countries, we deliver a full range of lubricants.

Support and partnership

Thanks to local technical presence, we provide a high level of service to optimize your Total Cost of Ownership.

References & OEMs

TotalEnergies Lubrificants cooperates with equipment manufacturers to create high-technology products for optimal performance and production of your machinery.

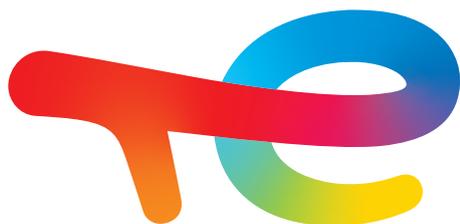


Innovation & Research

TotalEnergies Lubrificants invests in biotechnologies to find the most suitable components to reach energy efficiency through formulations designed in our Research Centers.

Quality and environment

TotalEnergies Lubrificants ISO 9001 and 14001 certifications are the guarantee of a long term commitment to quality and environment. From the initial design stage, our R&D teams seek to develop products that minimize toxicity risks and environmental impact.



TotalEnergies



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TotalEnergies Industry Solutions



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Safety Data Sheets are available at ms-sds.totalenergies.com



Metalworking fluids