ZELLER+GMELIN

Zubora

Water-miscible cooling lubricants

Zeller+Gmelin
The brand with the clear plus

Zeller+Gmelin is a medium-sized, international manufacturer of lubricants, printing inks and chemicals. The company with its head office in Eislingen/Fils, which was founded in 1866, is still family-owned. With 19 subsidiary companies and many partners, we are well connected throughout the world and deliver our high-quality products to more than 80 countries. We have understood and solved your problems for more than 160 years and will continue to do so in the future. This is how we create a tangible plus for our customers.
Because we understand the customer and develop solutions – reliably, flexibly and tailor-made.

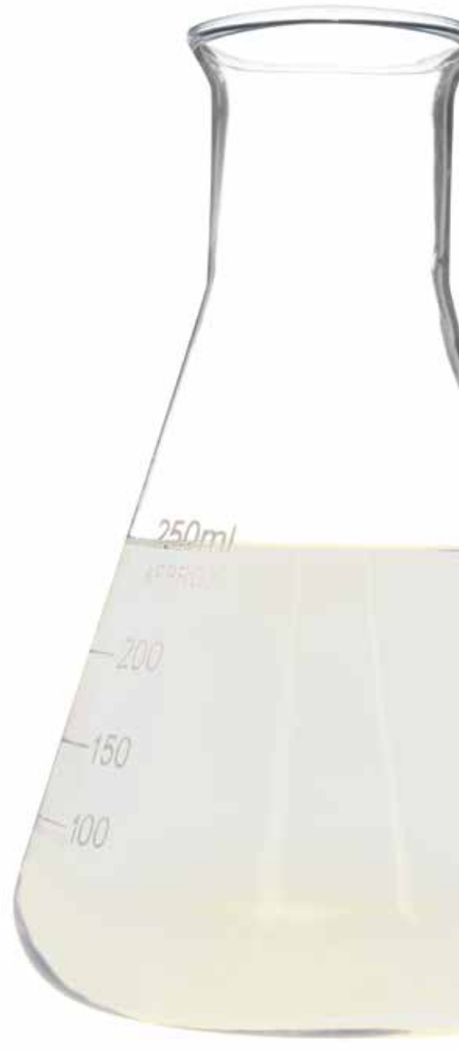
Under the brand name Zubora, we supply you with high-quality branded lubricants for machining made in Germany. Customers around the world rely on the high quality of our Zubora products. During the development of our cooling lubricants, we concentrate on fulfilling both current and future requirements of the chemicals legislation and, in addition, on ensuring optimum economic efficiency.

Zubora

Table of contents

+ Cooling lubricants for highest demands 4
+ Zubora 10 series 6
+ Zubora 20 series 8
+ Zubora 30 series 12
+ Zubora 57/5000 series 14
+ Zubora 65 series 18
+ Zubora 67 series 24
+ Zubora 77 series 30
+ Synthetic solutions | Zubora set-up agents 32
+ Awards 34
+ Lubrication of machine tools 36
+ Cooling liquids for high-performance spindles 38
+ Gear and hydraulic oils 40
+ Multicor dewatering fluids 42
+ Zeller+Gmelin Fluidmanagement 44
+ Locations 46

Please take a look at the current MSDS for all products offered.
The MSDS are always available on demand.



Cooling lubricants for highest demands

Our water-miscible Zubora cooling lubricants meet the highest requirements in the machining area and make convincing contributions to a more efficient and cost-effective production. We offer you advice on lubrication and machining issues, laboratory monitoring of the products used by us and assistance with disposal issues. Approx. 20 % of the 580 employees at the location in Eislingen work in the research and development department. This shows that Zeller+Gmelin is not only a manufacturer and supplier, but also an important development partner.

Our quality and environmental management is certified according to DIN EN ISO 9001:2015 and DIN EN ISO 14001:2015.

Your advantages:

+ A wide range of water-miscible high-performance cooling lubricants using state-of the-art technology
+ Can be used for all materials and machining processes
+ Special products for the most difficult machining operations such as broaching, deep hole drilling or threading
+ Optimised foaming behaviour due to the adjustment to different degrees of water hardness
+ Zubora products have an excellent lubrication performance, excellent wear protection and high corrosion protection
+ Our Zubora products are characterised by a long service life
+ Our products meet the high requirements for occupational health and safety
+ Resistance of plastics and lacquers as well as coatings in accordance with VDI 3035
+ No risk of formation of nitrosamines due to the renunciation of secondary amines
+ Expert report on skin compatibility upon request
+ Our products comply with TRGS 611

On the following pages, you will find our comprehensive selection of water-miscible cooling lubricants. Further products and special solutions are available upon request. Our personnel will be happy to provide you with technical advice on applications.

Zubora 10 series

10

Advantages:
+ Free of formaldehyde releasers
+ Very good resolubility
+ Excellent corrosion protection

Product	Item no.	Cast iron	Steel	High tensile steels	Alu-mini-um*	Non-ferrous metals*	Recommended hardness range of preparation water	Mineral oil content	Application concentration	pH value	Refractometer correction factor	General application notes
Zubora 10 H Plus FF	32060	++	++	+	+	+	> 12° dH	42 %	3 – 7 %	5 % 9.4	1.1	Universally applicable, long-term stable cooling lubricant, which can be used for up to medium-heavy machining operations. Also suitable for grinding.
Zubora 10 H Extra FF	32080	++	++	++	+	+	> 12° dH	37 %	5 – 10 %	5 % 9.4	1.1	Semi-synthetic, long-term stable high-performance cooling lubricant with a high content of polar additives. Suitable for heavy machining operations. With Zubora 10 H Extra FF and Zubora 10 M Extra FF, considerable tool life extensions can be achieved at high cutting speeds.
Zubora 10 M Extra FF	32130	++	++	++	+	+	7 – 12° dH	37 %	5 – 10 %	5 % 9.4	1.1	

++ suitable + suitable to a limited extent – recommendation after consultation

* In case of particularly sensitive alloys, we recommend a compatibility test in advance.

Zubora 20 series

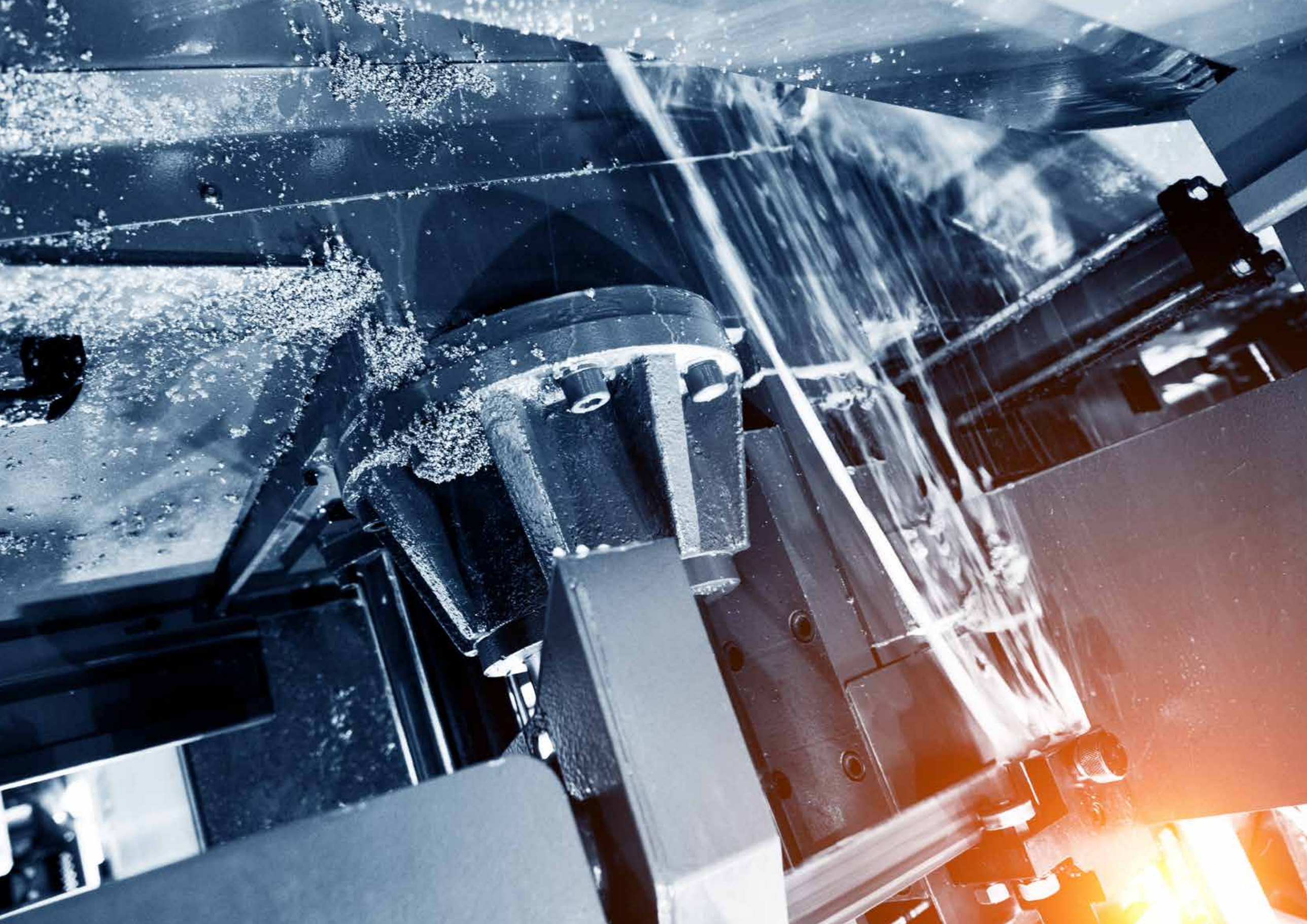
20

Advantages:
+ Free of formaldehyde releasers
+ Mono-ethanolamine-free
+ For the economical machining of aluminium alloys

Product	Item no.	Cast iron	Steel	High tensile steels	Alu-mini-um*	Non-ferrous metals*	Recommended hardness range of preparation water	Mineral oil content	Application concentration	pH value	Refractometer correction factor	General application notes
Zubora 20 H Plus FF	32100	++	++	+	+	+	> 12° dH	35 %	4 – 10 %	5 % 9.2	1.2	Long-term stable, universally applicable cooling lubricant, which can be used for up to medium-heavy machining operations. Also suitable for grinding.
Zubora 20 S Plus FF	32090	++	++	+	+	+	4 – 7° dH	45 %	4 – 7 %	5 % 9.3	1.1	
Zubora 20 H Extra FF	32110	++	++	+	++	+	> 12° dH	30 %	5 – 10 %	5 % 9.2	1.2	Semi-synthetic, long-term stable high-performance cooling lubricant with a high content of polar additives for the most difficult machining operations of all types of steel and aluminium. The product is also suitable for the machining of aluminium alloys with a high silicon content.
Zubora 20 H Ultra FF	32120	++	++	++	++	+	> 12° dH	30 %	5 – 10 %	5 % 9.0	1.2	Semi-synthetic, long-term stable high-performance cooling lubricant for the most difficult machining operations of almost all materials. Also suitable for contract manufacturers with alternating machining operations. Even heavy machining operations such as deep hole drilling, reaming, thread forming etc. can be mastered without any problems. EP additives considerably extend the tool life and allow machining at high cutting speeds.

++ suitable + suitable to a limited extent – recommendation after consultation

* In case of particularly sensitive alloys, we recommend a compatibility test in advance.



Zubora 30 series

30

Advantages:
+ Free of formaldehyde releasers
+ Boron- and amine-free
+ Particularly suited for the machining of sensitive non-ferrous alloys

Product	Item no.	Cast iron	Steel	High tensile steels	Alu-mini-um*	Non-ferrous metals*	Recommended hardness range of preparation water	Mineral oil content	Application concentration	pH value	Refractometer correction factor	General application notes
Zubora 30 FD	21650	–	+	+	++	++	4 – 24° dH	40 %	5 – 10 %	5 % 9.5	1.0	Finely dispersed, boron- and amine-free cooling lubricant based on mineral oil. Excellent results are achieved with medium to heavy machining tasks. Very good experience is available in particular with reaming and thread forming of aluminium materials. Also ideal for the processing of sensitive non-ferrous metals.
Zubora 30 Spezial	90241	–	+	+	++	++	4 – 24° dH	40 %	5 – 10 %	5 % 9.1	1.0	Boron- and amine-free, high-performance cooling lubricant with polar additives for medium to heavy machining operations. Particularly suitable for the processing of aluminium and non-ferrous metals.
Zubora 30 Extra	21620	–	+	+	++	++	4 – 24° dH	37 %	5 – 10 %	5 % 9.0	1.0	Boron- and amine-free, semi-synthetic cooling lubricant with a high content of polar additives. Can be used for the most difficult machining operations such as reaming, thread cutting, puncturing, sawing, etc.

++ suitable + suitable to a limited extent – recommendation after consultation

* In case of particularly sensitive alloys, we recommend a compatibility test in advance.

Zubora 57/5000 series

5000 57

Advantages:
+ Free of formaldehyde releasers
+ Boron-free
+ Universally applicable

Zubora 57 series

Product	Item no.	Cast iron	Steel	High tensile steels	Alu-mini-um*	Non-ferrous metals*	Recommended hardness range of preparation water	Mineral oil content	Application concentration	pH value	Refractometer correction factor	General application notes
Zubora 57 H Plus	32020	++	++	+	++	+	> 12° dH	30 %	4 – 7 %	5 % 9.6	1.5	Boron-free, semi-synthetic and long-term stable cooling lubricant, universally applicable up to medium-heavy machining operations. Product has particularly good foaming properties with hard water. Ideal for grinding.
Zubora 57 H Extra	32030	++	++	++	++	+	> 12° dH	30 %	5 – 10 %	5 % 9.6	1.4	Boron-free, long-term stable and semi-synthetic high-performance cooling lubricant with a high content of polar additives for difficult machining tasks. The innovative formulation ensures a high level of process reliability.
Zubora 57 H Ultra	31950	++	++	++	++	+	> 12° dH	30 %	5 – 10 %	5 % 9.3	1.5	Boron-free, semi-synthetic high-performance cooling lubricant with a high content of polar additives and EP additives. Due to the high content of active substances, it is also suitable for the most difficult machining operations.

Zubora 5000 series (fully synthetic)

Product	Item no.	Cast iron	Steel	High tensile steels	Alu-mini-um*	Non-ferrous metals*	Recommended hardness range of preparation water	Mineral oil content	Application concentration	pH value	Refractometer correction factor	General application notes
Zubora 5000 H Ultra	24590	+	++	++	++	–	> 12° dH	0 %	8 – 10 %	5 % 9.2	1.2	Long-term stable, mineral oil-free high-performance cooling lubricant based on synthetic ester. Thanks to its new combination of active substances, the product has a long service life and high emulsion stability. The synthetic base component optimises the wetting behaviour and improves the cooling and lubricating effect. Can be used for the most difficult machining operations and many materials.

++ suitable + suitable to a limited extent – recommendation after consultation

* In case of particularly sensitive alloys, we recommend a compatibility test in advance.

Zubora 65 series

65

Advantages:
+ Free of formaldehyde releasers
+ Boron-free
+ Excellent drain-off characteristics and, therefore, low topping up concentration
+ Ideally suited for contract manufacturers with changing materials and processes

Product	Item no.	Cast iron	Steel	High tensile steels	Alu-mini-um*	Non-ferrous metals*	Recommended hardness range of preparation water	Mineral oil content	Application concentration	pH value	Refractometer correction factor	General application notes
Zubora 65 H Plus	28890	++	++	+	+	+	> 12° dH	9 %	3 – 7 %	5 % 9.7	1.5	Boron-free, semi-synthetic and universally applicable cooling lubricant. The product produces a finely dispersed emulsion when mixed with water. Can be used for light to medium-heavy machining operations. Also ideal for grinding. Due to a special formulation, the product is particularly long-term stable.
Zubora 65 S Plus	28440	++	++	+	+	+	4 – 12° dH	9 %	3 – 7 %	5 % 9.5	1.7	
Zubora 65 H Extra	28870	++	++	++	+	+	> 12° dH	5 %	5 – 10 %	5 % 9.6	1.7	Semi-synthetic, boron-free and universally applicable high-performance cooling lubricant. The product produces a finely dispersed emulsion when mixed with water. Due to the selection of highly effective additi-ves, Zubora 65 H Extra and Zubora 65 S Extra can be used for difficult machining processes. Due to a special formulation, Zubora 65 H Extra and Zubora 65 S Extra are particularly long-term stable. The innovative additive package considerably extends the service life of the tools and enables machining at high cutting speeds.
Zubora 65 S Extra	28440	++	++	++	+	+	4 – 12° dH	5 %	5 – 10 %	5 % 9.5	1.7	

++ suitable + suitable to a limited extent – recommendation after consultation

* In case of particularly sensitive alloys, we recommend a compatibility test in advance.

Zubora 65 series

65

Advantages:
+ Free of formaldehyde releasers
+ Boron-free
+ Excellent drain-off characteristics and, therefore, low topping up concentration
+ Ideally suited for contract manufacturers with changing materials and processes

Product	Item no.	Cast iron	Steel	High tensile steels	Alu-mini-um*	Non-ferrous metals*	Recommended hardness range of preparation water	Mineral oil content	Application concentration	pH value	Refractometer correction factor	General application notes
Zubora 65 H Ultra	28660	+	++	++	++	+	> 12° dH	20 %	5 – 10 %	5 % 9.6	1.3	Boron-free, semi-synthetic and universally applicable high-performance cooling lubricant. The product produces a finely dispersed emulsion when mixed with water. Due to the selection of highly effective EP additives, the product can also be used for the most difficult machining processes. The EP additives considerably extend the service life of the tools and enable machining at high cutting speeds. This ensures high process reliability even with very difficult machining operations.
Zubora 65 M Ultra	30970	++	++	++	++	+	7 – 12° dH	18 %	5 – 10 %	5 % 9.5	1.2	
Zubora 65 S Ultra	28460	++	++	++	++	+	4 – 7° dH	18 %	5 – 10 %	5 % 9.5	1.3	

++ suitable + suitable to a limited extent – recommendation after consultation

* In case of particularly sensitive alloys, we recommend a compatibility test in advance.

Zubora 67 series

67

Advantages:
+ Boron-free
+ Free of formaldehyde releasers
+ With a higher mineral oil content compared to the 65 series
+ Excellent for small diameter machining operations

Product	Item no.	Cast iron	Steel	High tensile steels	Alu-mini-um*	Non-ferrous metals*	Recommended hardness range of preparation water	Mineral oil content	Application concentration	pH value	Refractometer correction factor	General application notes
Zubora 67 H Plus	30910	++	++	+	+	+	> 12° dH	32 %	4 – 7 %	5 % 9.5	1.1	Boron-free, semi-synthetic and universally applicable cooling lubricant. The product produces a finely dispersed emulsion when mixed with water. Can be used for light to medium-heavy machining operations. Also ideal for grinding. Due to a special formulation, Zubora 67 H Plus and Zubora 67 M Plus are particularly long-term stable.
Zubora 67 M Plus	31610	++	++	+	+	+	7 – 12° dH	30 %	4 – 7 %	5 % 9.5	1.2	
Zubora 67 H Extra	30920	++	++	++	+	+	> 12° dH	30 %	5 – 10 %	5 % 9.6	1.0	Semi-synthetic, boron-free and universally applicable high-performance cooling lubricant. The product produces a finely dispersed emulsion when mixed with water. Due to the selection of highly effective additives, Zubora 67 H Extra and Zubora 67 M Extra can be used for difficult machining processes. Due to a special formulation, the product is particularly long-term stable. The innovative additive package considerably extends the service life of the tools and enables machining at high cutting speeds.
Zubora 67 M Extra	31620	++	++	++	+	+	7 – 12° dH	30 %	5 – 10 %	5 % 9.6	1.0	

++ suitable + suitable to a limited extent – recommendation after consultation

* In case of particularly sensitive alloys, we recommend a compatibility test in advance.

Zubora 67 series

67

Advantages:
+ Boron-free
+ Free of formaldehyde releasers
+ With a higher mineral oil content compared to the 65 series
+ Excellent for small diameter machining operations

Product	Item no.	Cast iron	Steel	High tensile steels	Alu-mini-um*	Non-ferrous metals*	Recommended hardness range of preparation water	Mineral oil content	Application concentration	pH value	Refractometer correction factor	General application notes
Zubora 67 H Ultra	30930	++	++	++	++	+	> 12° dH	30 %	5 – 10 %	5 % 9.5	1.0	Boron-free, semi-synthetic and universally applicable high-performance cooling lubricant. The product produces a finely dispersed emulsion when mixed with water. Due to the selection of highly effective EP additives, Zubora 67 H Ultra and Zubora 67 M Ultra can be used for difficult machining processes. The EP additives considerably extend the service life of the tools and enable machining at high cutting speeds. This ensures high process reliability even in case of very difficult machining operations.
Zubora 67 M Ultra	31630	++	++	++	++	+	7 – 12° dH	30 %	5 – 10 %	5 % 9.4	1.1	

++ suitable + suitable to a limited extent – recommendation after consultation

* In case of particularly sensitive alloys, we recommend a compatibility test in advance.

Zubora 77 series

77

Advantages:
+ Free of formaldehyde releasers
+ Free of ingredients with sensitising potential such as abietic acid and colophony
+ The practical application has shown that these products are characterised by good skin compatibility

Product	Item no.	Cast iron	Steel	High tensile steels	Alu-mini-um*	Non-ferrous metals*	Recommended hardness range of preparation water	Mineral oil content	Application concentration	pH value	Refractometer correction factor	General application notes
Zubora 77 H Ultra	31800	+	++	++	++	+	> 12° dH	30 %	5 – 10 %	5 % 9.6	1.1	Boron-free, semi-synthetic and universally applicable high-performance cooling lubricant. The product produces a finely dispersed emulsion when mixed with water. Due to the selection of highly effective EP additives, Zubora 77 H Ultra and Zubora 77 S Ultra can be used for difficult machining processes. The EP additives considerably extend the service life of the tools and enable machining at high cutting speeds. This ensures high process reliability even with very difficult machining operations. The product is free of substances with increased allergen potential and free of monoethanolamine – TRGS 900 workplace limit value. Therefore, the Zubora 77 series is ideal for people with allergies.
Zubora 77 S Ultra	31810	+	++	++	++	+	4 – 7° dH	30 %	5 – 10 %	5 % 9.6	1.0	

++ suitable + suitable to a limited extent – recommendation after consultation

* In case of particularly sensitive alloys, we recommend a compatibility test in advance.

Synthetic solutions

\+ Free of formaldehyde deposits

Product	Item no.	Cast iron	Steel	High tensile steels	Alu-mini-um*	Non-ferrous metals*	Recommended hardness range of preparation water	Mineral oil content	Application concentration	pH value	Refractometer correction factor	General application notes
Zubora TDG	32140	+	++	++	++	+	4 – 20° dH	0 %	4 – 7 %	3 % 9.3	1.7	Fully synthetic and water-soluble cooling lubricant for the production of clear coolant solutions especially for grinding. Also suitable for light machining tasks. The particularly low-foaming behaviour allows a good observation of the grinding process.
Zubora TKG	29830	++	++	++	+	+	4 – 20° dH	0 %	2,5 – 7 %	3 % 9.2	1.3	Fully synthetic, boron-free, water-soluble cooling lubricant especially for grinding. The product has a particularly high corrosion protection. The particularly low-foaming behaviour allows a good observation of the grinding process.
Zubora TLG	31720	++	++	++	+	+	4 – 20° dH	0 %	3,5 – 7 %	3 % 9.6	1.6	Fully-synthetic, boron-free, clear, water-soluble cooling lubricant for grinding processes as well as for up to medium-heavy machining operations. Ideal for profile and creep-feed grinding of alloyed stainless steels. The product has a particularly high corrosion protection. The product is characterised by a high level of machine cleanliness and by an excellent flow behaviour.
Zubora TEP	30550	++	++	+	++	+	> 12° dH	0 %	4 – 10 %	5 % 9.5	1.6	Boron-free, long-term stable and fully synthetic cooling lubricant. Due to the selection of highly effective EP/AW additives, Zubora TEP is also suitable for difficult machining processes. The product is characterised by a high level of machine cleanliness and by an excellent flow behaviour.
Zubora THG	26920	–	–	–	+	++	4 – 20° dH	0 %	2,5 – 5 %	3 % 9.0	1.6	Boron- and amine-free, fully synthetic and water-soluble cooling lubricant for the grinding of hard metals with special inhibition against cobalt release. The particularly low-foaming behaviour allows a good observation of the grinding process.

Zubora set-up agents

Zubora RF	31730	Cleaning and care	–	0 %	2 %	1 % 9.5	–	For the cleaning and rinsing of circulation systems in which water-mixed cooling lubricants are used. Zubora RF 2% is added to the emulsion and left there for 48 hours. Before changing and reapplying the emulsion, we recommend to rinse the circulation system with a 0.5% to 1.5% emulsion.

++ suitable + suitable to a limited extent – recommendation after consultation

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Further Zubora set-up agents such as defoamers, preservatives, corrosion inhibitors, etc. are available upon recommendation by the laboratory or upon request.

Awards

Anyone who receives the Bosch Global Supplier Award should be considered as one of the best industrial suppliers in his sector:
Zeller+Gmelin received the award for the sixth time already in the category »Indirect Purchasing«.

The criteria of quality, cost awareness, innovation and logistics were decisive for the awarding of the Bosch Global Supplier Award.
The motto of the 2017 award ceremony was »Partners in Success«.

Awards:
2017 / 2015 / 2013 / 2010 / 2005 / 2003
Supplier Award for the best lubricant supplier of the Bosch Group.

Lubrication of machine tools

In order to fully ensure the precision of modern machine tools, it is necessary to guarantee a perfect compatibility between water-miscible cooling lubricants and slideway oil. With the high-performance cooling lubricants of our Zubora series combined with the use of our Divinol T-EP range of slideway oils, we offer you the perfect combination. The excellent demulsifying properties of our guide and slideway oils and their high film strength and adhesion offer protection against stick-slip effects and the resulting machining problems. In addition, black staining is largely excluded due to the coordinated addition of guideway oil and cooling lubricant. We recommend the use of our EP fluid greases for the use in grease-lubricated linear systems mounted on roller, ball or needle bearings (linear guides).

Guide and slideway oils

Product	Viscosity 40 °C mm²/s DIN 51562	Flash point °C DIN ISO 2592
Divinol T 3 EP ISO 32 95980	32	> 200
Divinol T 6 EP ISO 68 81911	68	> 200
Divinol T 12 EP ISO 220 81930	220	> 200

Description: Demulsifying special lubricants for guides and slideways in machine tools. Due to the high alloying degree, these lubricants can also be used for bearing and gear lubrication and as hydraulic oils.

EP semi-fluid greases

Product	NLGI class	Thickener/ base oil	Service temperature	Dropping point	Base oil viscosity
Divinol Lithogrease 000* 22320	000	Lithium complex soap/ mineral oil/ polyalphaolefin	–30 °C to +140 °C	170 °C	380 mm²/s/40 °C
Divinol Lithogrease 000/150* 23030	000		–30 °C to +140 °C	170 °C	150 mm²/s/40 °C
Divinol Fett L 800 26490	000	Lithium soap/ mineral oil	–20 °C to +120 °C	170 °C	750 mm²/s/40 °C

* Approval from machine manufacturer and central lubrication system manufacturer available.

Description: Water-resistant, semi-synthetic, EP-alloyed semi-fluid greases for roller lubrication of linear systems in machine tools. Marking according to DIN 51826: GP 00 N-30 or GP 000 N-30 according to ISO/DIS 6743-9: ISO-L-XCDHB 00 or ISO-L-XCDHB 000.

Cooling liquids for high-performance spindles

Due to the increasing lack of space inside the machine, the design of the spindles is becoming more and more compact. Therefore, the cooling of the motor spindle is getting increasingly important.

The optimum heat dissipation of the cooling liquid ensures a constant low temperature and thus guarantees maximum process reliability. The products provide long-term protection for the entire cooling circuit against corrosion and are generally compatible with cooling circuit components.

Product	Item no.	Ready for use	Glycol base	Colour	Advantage
Divinol Thermosure	62052	no	Ethylene glycol	colourless	+ Tested frost protection
Divinol Thermosure Blau	61050	no	Ethylene glycol	blue	+ Tested frost protection
Divinol Thermosure PG	30000	no	Propylene glycol	blue	+ Not classified as hazardous + Very good material compatibility + Good corrosion protection
Divinol Thermosure PG RM	29870	yes	Propylene glycol	blue	+ Not classified as hazardous + Very good material compatibility + Good corrosion protection
Divinol SCF 1 SE	28790	yes	Ethylene glycol	blue	+ Good casting test + Tried and tested zinc compatibility + Not classified as hazardous
Divinol Thermosure OS 25	23110	yes	Ethylene glycol	colourless	+ Tested frost protection

Gear and hydraulic oils

Under the Divinol brand, Zeller+Gmelin offers you high-quality gear and hydraulic oils which are specially designed to meet the requirements of modern machines and to maintain their performance, precision and availability.

Divinol gear and hydraulic oils are used wherever maximum performance and economical operation of machines are required in industrial production environments.

Hydraulic oils

Product	Item no.	Viscosity mm²/s/40 °C	Flash point °C	Pour point °C
Divinol HLP ISO 22	48850	22	> 190	≤ –21
Divinol HLP ISO 32	48861	32	> 200	≤ –18
Divinol HLP ISO 46	48870	46	> 210	≤ –24

Description: Zinc-containing high-pressure hydraulic oils HLP according to DIN 51524-2 or L-HM according to ISO 6743-4 with high ageing resistance as well as excellent corrosion and wear protection properties. For all hydraulic units.

Divinol DHG ISO 32	84330	32	> 190	≤ –30
Divinol DHG ISO 46	84350	46	> 210	≤ –24

Description: Zinc-containing deterging/dispersing hydraulic oils HLP-D according to DIN 51524-2 (with the exception of the demulsifying properties) or L-HM according to ISO 6743-4. Preferred use in hydraulic systems with the risk of condensation or penetration of aqueous cooling lubricants (e.g. in machine tools). Suitable for mobile and stationary hydraulic systems with hydrostatic drive.

Gear oils

Product	Item no.	Viscosity mm²/s/40 °C	Flash point °C	Pour point °C
Divinol ICL ISO 100	25040	100	> 210	≤ –15
Divinol ICL ISO 150	24630	150	> 210	≤ –15
Divinol ICL ISO 220	25060	220	> 210	≤ –12
Divinol ICL ISO 320	25070	320	> 210	≤ –12

Description: Industrial high-pressure gear oils CLP according to DIN 51517-3 or L-CKD according to ISO 6743-6 with friction- and wear-reducing additives and very high pressure absorption capacity. For the use in highly stressed industrial gear units with circulation lubrication as well as immersion gear units with spur and bevel gear and worm gear units. Silicone-and zinc-free. FZG test according to DIN 51354-2: Damage force level > 12.

Multi-purpose oils

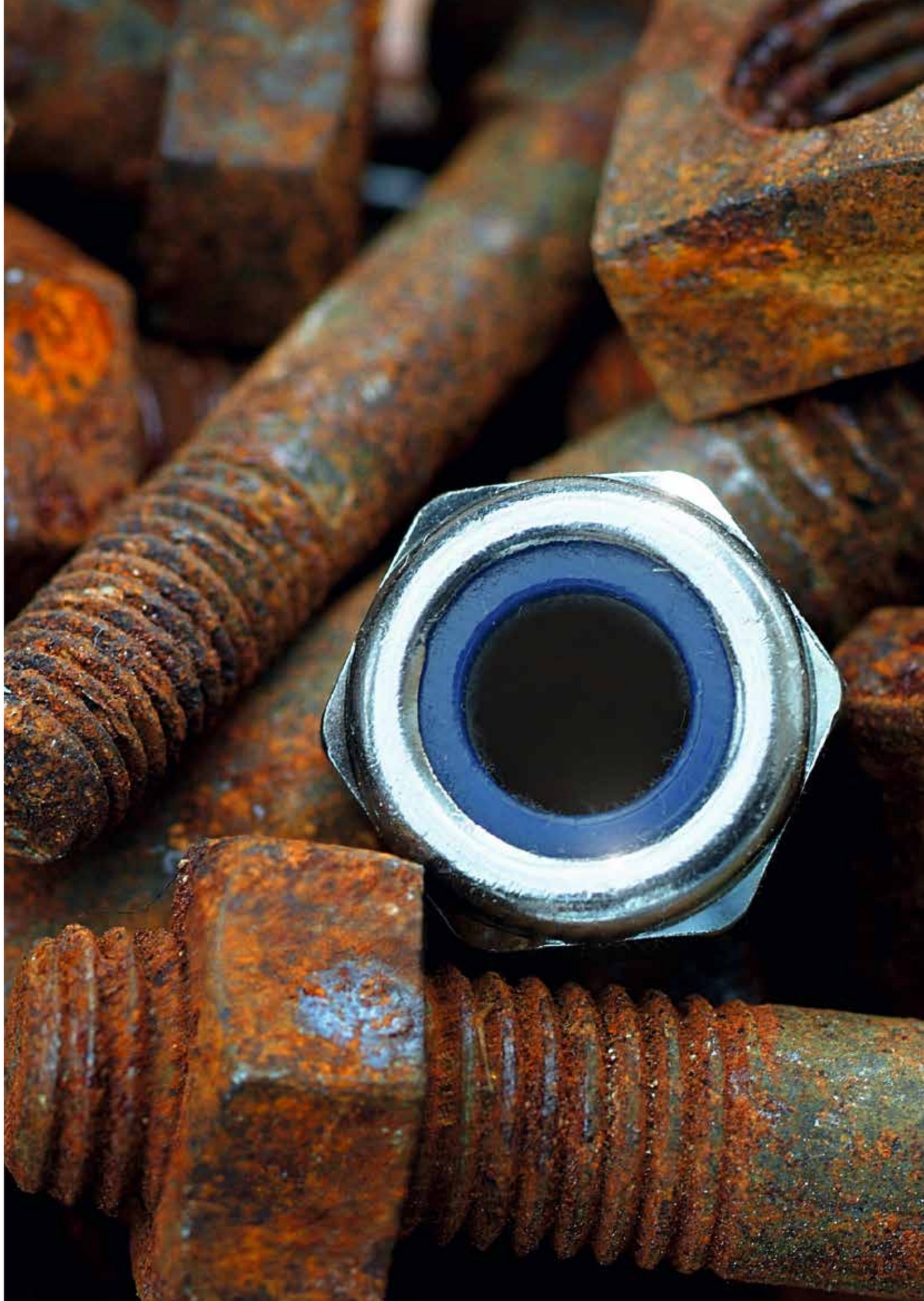
Product	Item no.	Viscosity mm²/s/40 °C	Flash point °C	Pour point °C
Divinol GWA ISO 68	48780	68	> 220	≤ –21
Divinol GWA ISO 100	48790	100	> 230	≤ –21
Divinol GWA ISO 150	20050	150	> 230	≤ –12

Description: Zinc-free multi-purpose oils for bearings, gears and hydraulic systems. They meet the requirements for gear oils CL according to DIN 51517-2 or L-CKC according to ISO 6743-6. Divinol GWA ISO 68 to Divinol GWA ISO 150 also meet the requirements for hydraulic oils HLP according to DIN 51524-2 or L-HM according to ISO 6743-4. Products of the Divinol GWA series are used, for example, in hydraulic and mechanical gears, in roller and slide bearings, in hydraulic systems and for spindle lubrication.

Multicor dewatering fluids

Solvent-based anti-corrosion agents with excellent dewatering properties, e.g. after machining with water-miscible cooling lubricants, treatment of components after galvanic surface finishing, aqueous cleaning or vibratory grinding. Multicor dewatering fluids form thin, highly effective films for protection against corrosion during internal interim storage or transport of the treated workpieces. Usually, degreasing is not necessary prior to further machining.
Multicor dewatering fluids can be applied both by brush or spray application. However, the full effectiveness of the dewatering properties can only be achieved by immersion.

Product	Application/properties	Flash point	Protec-tive film	Inside storage time	Outside storage time
Multicor DW 3 20960	Dewatering fluid covers the workpiece with a very thin film, high corrosion protection, easy to remove. Suitable for seawater climate. Suitable for casting preservation.	62 °C	slightly oily 2–3 µm	4–6 months	2–3 months
Multicor DW 3 Spezial Light 97000	Dewatering fluid for wet mass-produced and small parts. Suitable for internal interim storage and transport within Europe, very low odour. Suitable for casting preservation.	62 °C	slightly oily 1,5–2 µm	6 – 12 months	3–6 months
Multicor DW 3 Extra Light 90500	Dewatering fluid with intensive water displacement, high corrosion protection for mass-produced and small parts, very low odour.	62 °C	waxy 0,5–1 µm	6 – 12 months	3–6 months
Multicor DW 3 Ultra 94080	Dewatering fluid with high corrosion protection, for mass-produced and small parts.	62 °C	slightly oily 3 µm	8 – 16 months	5–8 months



Zeller+Gmelin Fluidmanagement

Upon request, our subsidiary company ZG Fluidmanagement offers a complete service around cooling lubricants. These services include expert advice on the following topics:

+ Use and application of the lubricants and logistics of the company
+ Process optimisation via operating cost reduction
+ Selection of the necessary devices for optimum lubricant application
+ Environmental protection/waste prevention
+ Training of the operating personnel on site

We provide further services in accordance with the legal guidelines for safety and health protection when handling cooling lubricants:

+ Monitoring and testing of the water-mixed cooling lubricants by our own qualified personnel
+ Analyses and documentation on site or at the Zeller+Gmelin laboratory by means of an EDP-supported fluid control system
+ Assistance with occupational safety
+ Cleaning and maintenance of the cooling lubricants used with the objective of service life extension
+ Advice on cooling lubricants and storage issues

This is only a small part of the wide range of fluid management services from Zeller+Gmelin. The technical consultants provide detailed information of the complete range of services, in order to achieve cost reductions via the correct measures.

Reference list (excerpt)
BMW, MAG, Bosch, Leiber Group, Continental, Schuler, Emag, Siemens

Our core competencies at a glance:

- **Storage & Lubricant Management**
- **Device Management**
- **Filter Management**
- **Concept & Assembly**
- **Fluid Management**
- **Cleaning & Chemicals**
- **Fluid Control System (FCS)**
- **Laboratory Examination**
- **Recycling & Disposal**

Contact

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Schlossstraße 20, 73054 Eislingen
Phone: +49 7161 802-401

At home + Abroad

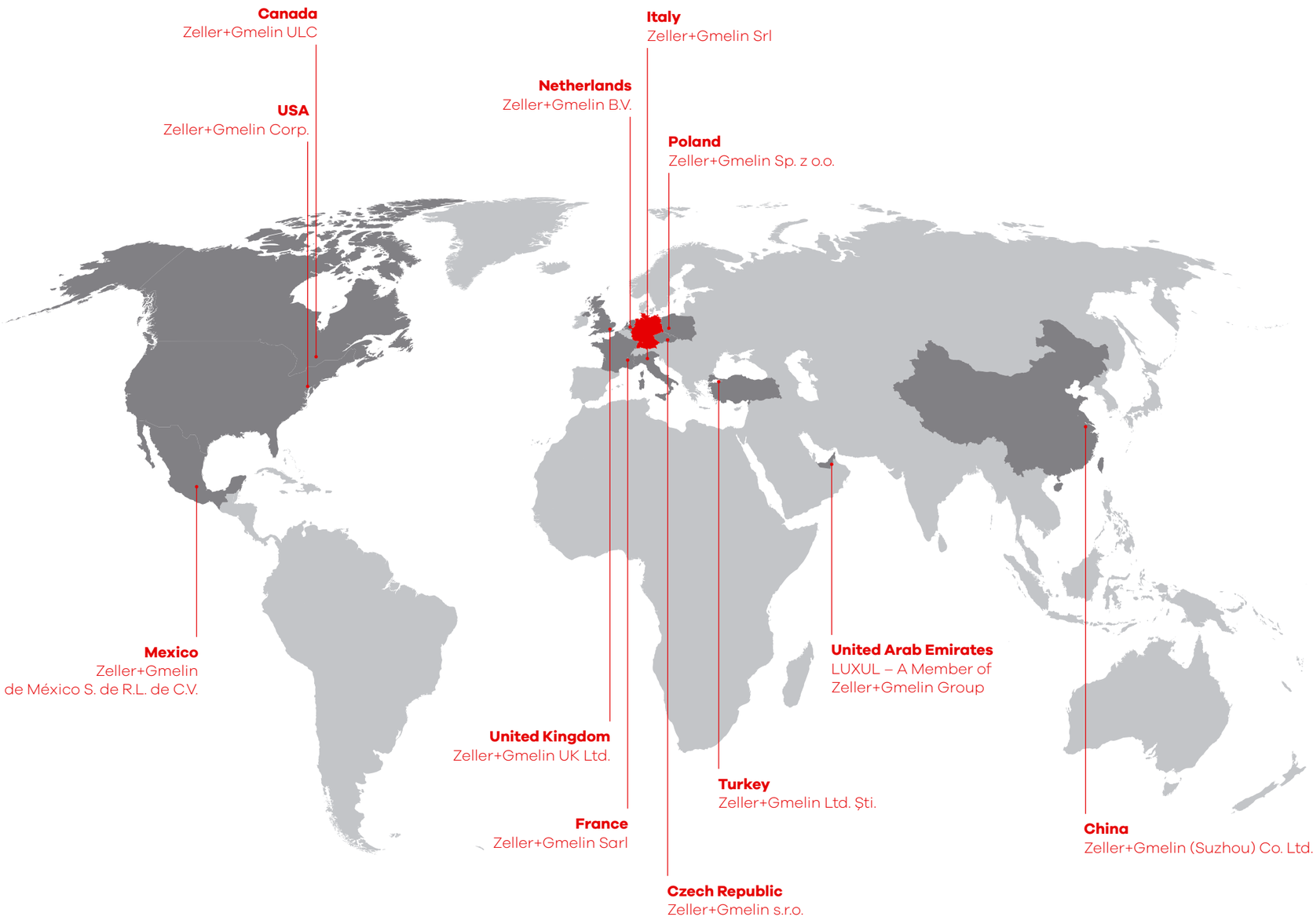
We are your plus.

Zeller+Gmelin has got offices worldwide, plus its head office in Eislingen in Baden-Württemberg. Our name stands for reliability and quality, at all times. Our subsidiaries and partners with all their employees ensure this on a worldwide basis.

The distinct expertise of our sites and our smooth cooperation are beneficial not just to us, the company as a whole – but also to you, the customer.

The concentrated competence and understanding of processes, application and development, coupled with problem-solving skills and personal advice, are what make Zeller+Gmelin a global figure when it comes to understanding and solving your problems.

Germany
Zeller+Gmelin GmbH & Co. KG
ZG Fluidmanagement
SÜDÖL Mineralöl-Raffinerie GmbH
SÜDÖL GmbH
SÜDÖL Recycling GmbH



EXPERTLY DONE.

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