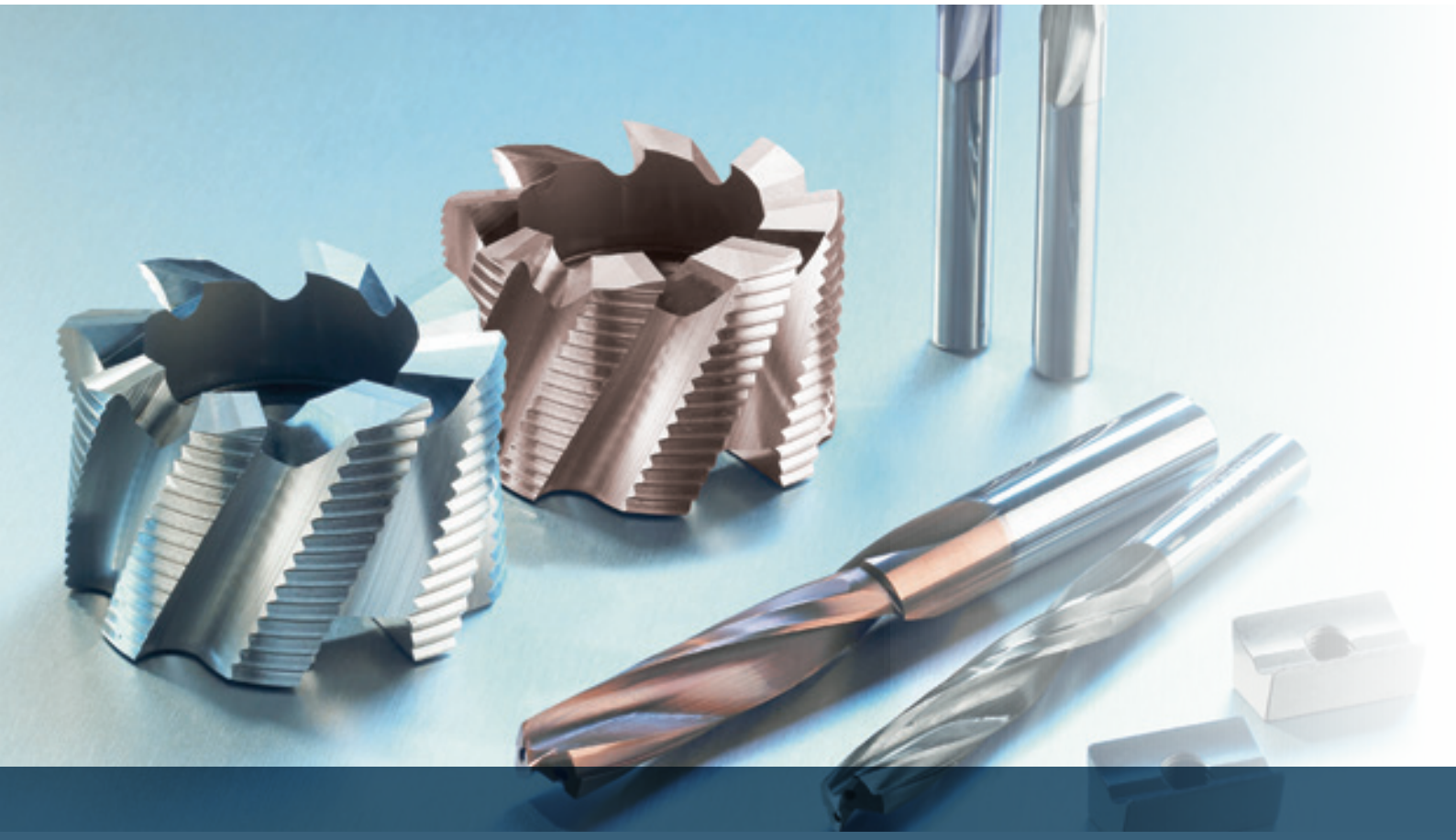
borer
advanced cleaning solutions

deconex® de-coat for steel and carbide

Residue-free decoating, maximum value retention



borer industry

Decoating PVD and CVD coatings

Our expertise - your advantage

The decoating of PVD and CVD-coated tools and components made from steel and carbide is an important prerequisite for high-quality recoating. With products from the deconex® de-coat line, you achieve efficient, precise and gentle decoating that allows you to prolong the lifespan of tools and components through recoating.

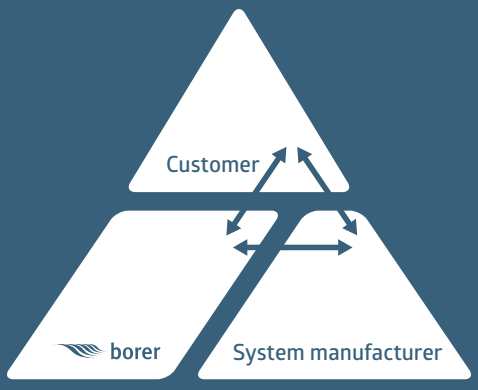
For decades we have been involved with the development and production of decoating chemicals for the PVD and CVD coating industry. In addition to efficient decoating products, our complete range of services also includes comprehensive advice tailored to your specific processes and parts - from decoating tests in our in-house R&D laboratory to training of your employees.

Decoating chemistry and expertise as a complete package

We not only supply you with first-class products, but also support you with our many years of experience and expertise in the development and implementation of decoating processes. We attach great importance to detailed documentation: in addition to our products, you will receive precise decoating instructions for optimum decoating as well as recommendations for professional disposal processes.

The full Borer range at a glance

+ Efficient, substrate gentle decoating products
+ Detailed instructions and documentation
+ Professional advice
+ Process development support based on sample decoatings
+ Staff training
+ Transfer of expertise to customers



Contact us for comprehensive advice. Our coating specialists are happy to help you!

industry@borer.ch

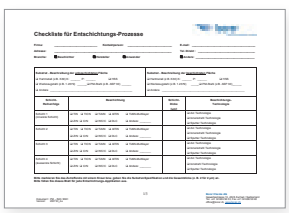
Safe and stable processes

Seven steps to successful decoating

In order to achieve high quality and verifiability of decoated tools and components, precisely defined decoating parameters and key decoating process details need to be coordinated with each other.
We have developed a „seven-step procedure“ for this in which we work closely with you to develop a tailor-made process with the aim of carrying out an implementation at your premises. Taking a systematic approach, we record your requirements and prerequisites and develop solutions based on sample decoatings. We place particular emphasis on a safe and stable decoating process and on preserving the value of your tools.

Step 1
Send us your requirements and conditions.

Step 2
Your key parts are determined.



Step 3
Indicate your acceptance criteria and analysis methods.

Step 4
The decision-making process is developed with you and our products.

Step 5
The decoating process is set up at your facility.

Step 6
You will receive documentation and practical training.

Step 7
The decoating process is regularly monitored.

Quality specifi-cations → Worst-case-scenario → Analysis → Development → Installation → Qualification → Monitoring

Demanding decoating tasks

No problem for deconex® de-coat

Decoating of Ti-, AlTi- and Cr-containing PVD and vacuum coatings

With our deconex® de-coat product range, the following families of coatings can be removed from tools or components:

Coating family	Base material*	Decoating chemicals
TiN TiCN TiSiN	Steel/HSS	deconex® de-coat 200 or deconex® AlZiRo plus
	Carbide	deconex® de-coat 101 plus or deconex® de-coat 100 (electrochemical)
AlTiN AlTiSiN TiAlN TiAlSiN	Steel/HSS	deconex® de-coat 200 or deconex® AlZiRo plus
	Carbide	deconex® de-coat 101 plus or deconex® de-coat 100 (electrochemical)
CrN AlCrN AlCrSiN	Steel/HSS	deconex® de-coat 231 or deconex® de-coat 231 + deconex® de-coat 110
	Carbide	See special processes
CrTiN AlTiCrN	Steel/HSS	See special processes
	Carbide	See special processes
(Ti)/DLC	Steel/HSS	deconex® de-coat 220
	Carbide	See special processes
(Cr)/DLC	Steel/HSS	deconex® de-coat 231 or deconex® de-coat 231 + deconex® de-coat 110
	Carbide	See special processes

* Base material: mainly carbide, check for suitability in preliminary tests

Special processes for particularly demanding decoating tasks

The decoating of chrome-containing coatings on carbides is one of the greatest challenges in the decoating sector. We offer several process variants which minimise the attack of the decoating chemistry on the base material:

Coating family	Base material	Process variant I
CrN AlCrN AlCrSiN	Carbide*	1st step: Decoating with specific potassium permanganate formula 2nd step: Reaction stop, so that the decoating chemicals cannot react any further on the tool surface. The use of this reaction stop solution also prevents the carry-over of Cr6+ into the waste water and discolouration on the tool is removed.
	This process variant is ideally suited for hobbing cutters. Comment: The potassium permanganate formula is not offered as a commercial deconex® de-coat product, but as a formulation. deconex® de-coat 301L and deconex® de-coat 301P are used as reaction stoppers.	

Coating family	Base material	Process variant II
CrN AlCrN AlCrSiN	Carbide*	Decoating with deconex® de-coat 231 and deconex® de-coat 110 under specially defined process conditions.
	This process variant is suitable for hobbing cutters and can be used if the availability of potassium permanganate is limited.	

* Carbide must be tested for suitability in preliminary tests.

Special systems for the decoating of CrTiN and AlTiCrN-containing coatings

Thanks to a new process method using special system technology and highly effective Borer decoating chemistry, these layers can be removed within minutes - without attacking the carbide.**

Use of technology requires exact clarification of the preconditions in advance to ensure successful decoating.

PLATIT
Advanced Coating Systems
SWISS QUALITY

** Our partner in decoating system technology and analysis

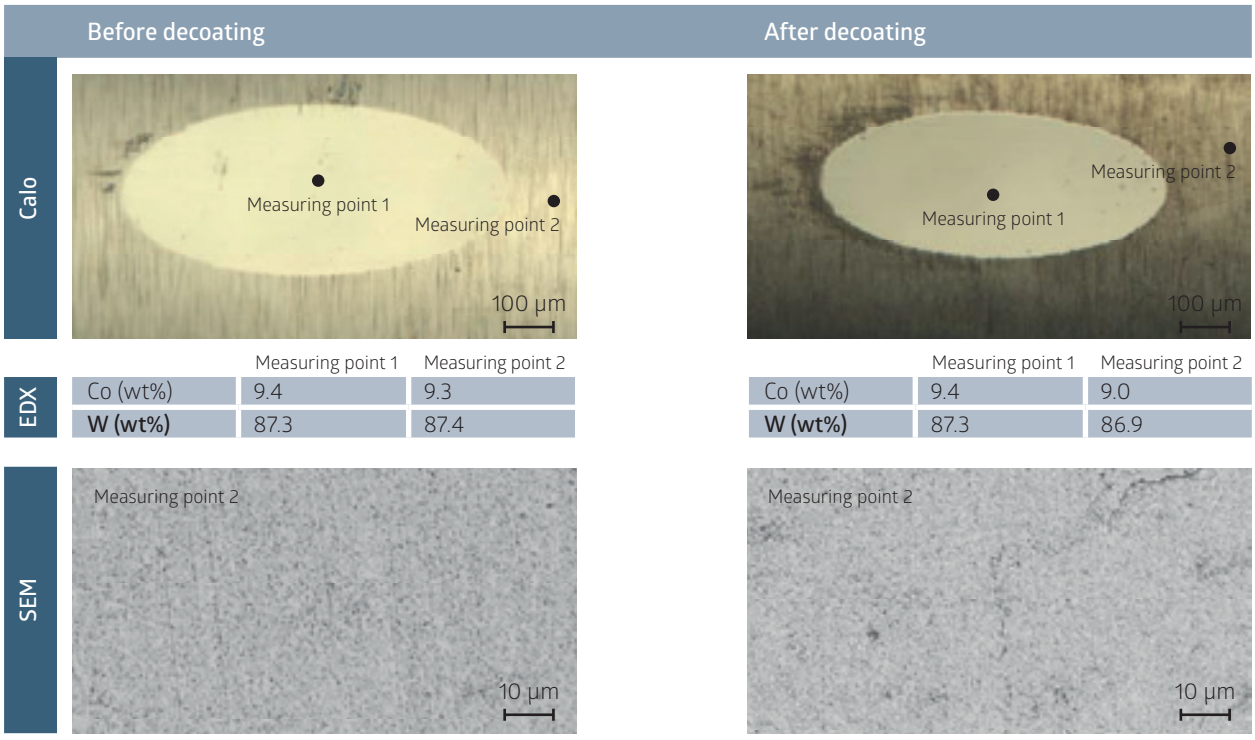
Systematic analysis of decoating

With our deconex® products, you not only achieve precise decoating, but also lay the foundation for successful and stable recoating. This has a positive effect on the service life of your tools and components and is also cost-effective.

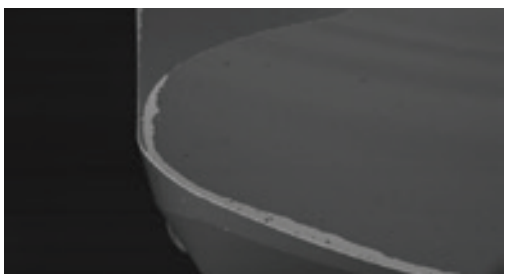
In order to be able to accurately assess the result of a decoating, systematic tests are carried out on the surfaces of the tools or components. These are determined and carried out in relation to the application within the respective decoating process. The following methods are used:

+ Scanning electron microscopy (SEM)
+ Energy dispersive X-ray spectroscopy (EDX)
+ X-ray fluorescence analysis (X-Ray)
+ Calotte grindings

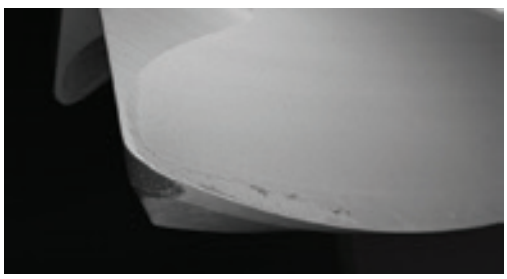
Example 1: Examination of a carbide drill on the shank with regard to Co loss before and after decoating



Example 2: SEM images of a worn carbide cutter with AlTiN coating before and after decoating



Before decoating



After decoating

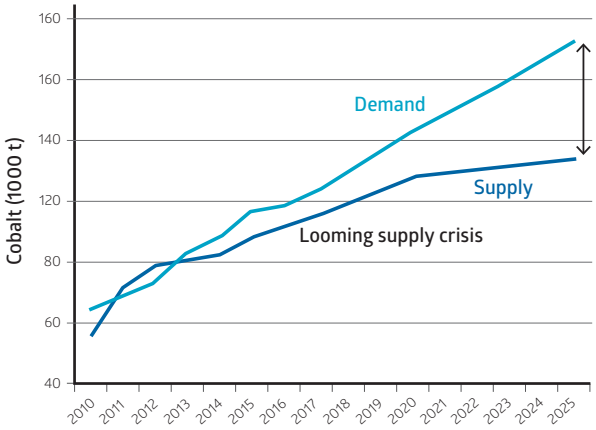
Proven technology, safe chemistry

Good reasons for decoating with deconex® de-coat

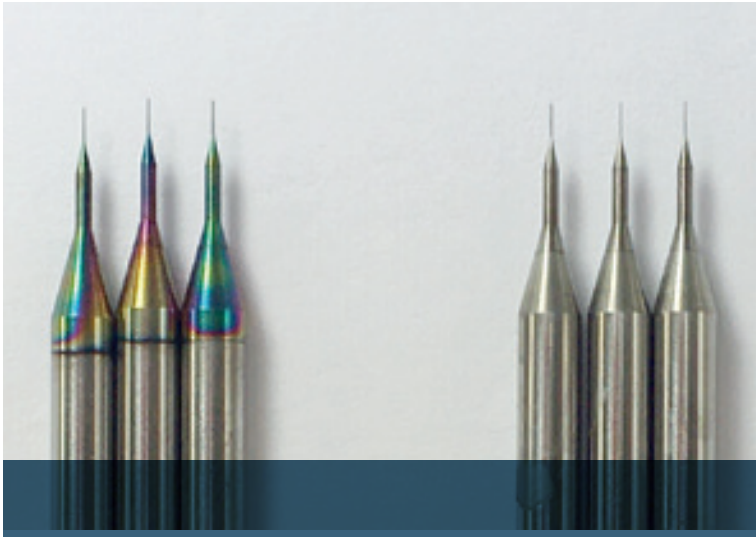
Professional decoating is particularly useful for expensive carbide tools, hobbing cutters or other components that are complex to manufacture - and not just to eliminate quality problems caused by incorrect coating. With our proven chemistry you will achieve sustainable and cost-effective results.

Treatment with our decoating chemicals forms the basis for high-quality recoating, an important element of your value-added chain given the scarcity of resources and rising raw material prices. Equally, precise decoating and recoating can significantly extend the lifespan of your tools.

Raw material cobalt:
Growing demand and limited availability are leading to rising prices.



Source: palisadeglobal.com / palisade-research.com



What can be achieved with deconex® de-coat

More cost-effectiveness
+ Fast decoating times
+ Customer-specific processes
+ Can be used for a wide range of coatings

More sustainability
+ In view of scarce raw materials and rising raw material prices
+ Product and material recycling
+ Prolongation of the service life and value retention of tools

Increased safety
+ Stable processes
+ Great attention to occupational safety
+ Detailed step-by-step instructions

Better tool performance
+ Gentle substrate decoating
+ Stable base for recoating
+ Consistent decoating quality

Borer Chemie AG

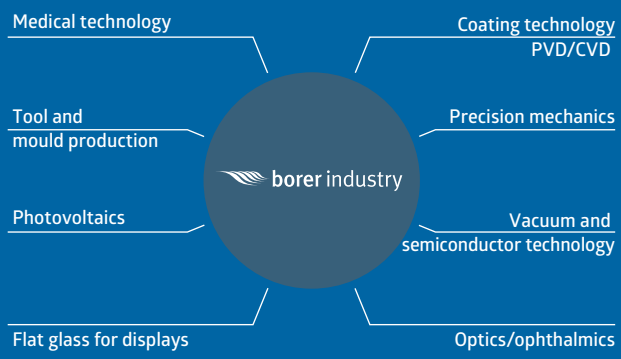
The specialists in cleaning and disinfection

Competence and innovation – worldwide

We have been researching, developing and manufacturing products in Switzerland for demanding applications in the field of cleaning and disinfection since 1965. Our deconex® and decosept® branded products are used in the industrial sector, in hospital hygiene, in laboratories, in the pharmaceutical sector and in hand and surface disinfection. We distribute our products worldwide through a network of subsidiaries and distribution partners.

Clean solutions for all sectors of industry

Industrial manufacturing processes require customised cleaning processes adapted to their individual requirements. A goal-focused cleaning concept safeguards the quality of the final products. Borer Industry's process specialists work with customers to develop specific cleaning concepts for stable, regulations-compliant process management. Support with fine-tuning the implementation and monitoring processes round off our service.



A unique service: the deconex® Test & Training Centre

In our in-house technical centre, our customers have the opportunity to test tailor-made potential system technology and chemistry for their cleaning, passivation or decoating processes. For this purpose, we have state-of-the-art machinery at our disposal as well as the expertise of our specialists.

borer
advanced cleaning solutions

Borer Chemie AG
Gewerbestrasse 13, 4528 Zuchwil / Switzerland
Tel. +41 32 686 56 00, Fax +41 32 686 56 90
office@borer.ch, www.borer.swiss

PB-IND deconex®-de-coat-Linie BC-CH 20 230504 EN