



CUTTING TOOLS

CLEANING & DECOATING



ECOLOGICAL CLEANING SOLUTIONS

 SWISS QUALITY



CLEANING AND SURFACE PREPARATION

Quality, reliability and expertise applied to surface preparation prior to PVD/CVD deposition and removal of PVD/CVD coatings

COMPATIBILITY

- HSS
- PM HSS (high and low alloyed)
- HSS, HSS-E, HSS-E-PM
- Tool steel (high and low alloyed)
- Stainless steel
- Cold-work steel
- Nitriding steel
- Tungsten carbide
- Cermet
- Ceramic

PARTS

- Drill
- Reamers
- Inserts
- Taps
- Dies
- Bevels
- Grinders
- Hobs
- Saws

POLLUTIONS

- Grinding oils
- Oxidations
- Abrasives
- Cutting oil
- Anti-corrosion protection oil
- Emulsion
- Polishing compounds, lapping, grinding, dry and wet sanding

DETERGENTS, SOLVENT, FINISHING AND SPECIFIC APPLICATIONS

PRODUCT	pH	TYPE	FUNCTION	APPLICATION/CONTAMINATION
DECOCLEAN 540 ²	13.7	Detergent	Spray or ultrasonic cleaning	Grinding oil, polishing compounds
DECOCLEAN 520 ^{1,2}	13.5			
DECOSPRAY 9 ^{1,2}	9.3			
RODACLEAN 2018	14	Finishing detergent	Ultrasonic cleaning	Excellent cleaning/degreasing properties, easily rinses off and spot free drying
GALVEX 18.01	9.5			Oxidation, effective on sandblasting residues (especially wet)
CERACLEAN SP 2022	0.5			Corrosion inhibitor with hydrophobic effect to prevent corrosion of sensitive metals and avoid rinsing stains on cutting inserts
GALVEX 18.08	9.5			Corrosion protection
KORROSTOP 5000	12.3	Rinse additive	Spray or ultrasonic cleaning	Corrosion protection

¹ Best used in combination: Decoclean 520 with Decospray 9

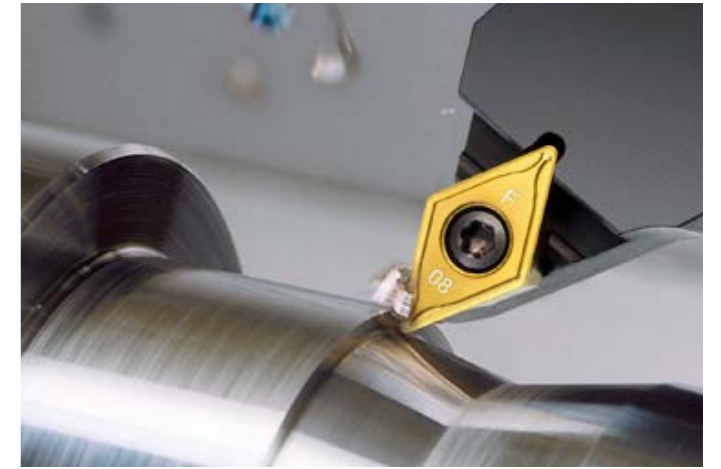
² Requires an oil separator in US

ULTRASONIC CLEANING OF CARBIDE INSERTS

DECOCLEAN 540, RODACLEAN 2018 et GALVEX 18.01

- **Process:** Removal of lapping compounds (neat oil, emulsion or dry), polishing and spot-free finishing. The processes are carried out on request depending on the parts, the treatments applied before cleaning, the cleaning equipment and the baskets

Decoclean 540 can be used in spray or immersion cleaning with an oil separator



CLEANING AND DEOXIDATION OF INSERTS AFTER SANDBLASTING

CERACLEAN SP 2022, GALVEX 18.08 and KORROSTOP 5000

- **Process:** Removal of wet blasting residues from carbide inserts, brightening and spot-free finishing



CLEANING SAW BLADES ON SINGLE-CHAMBER MACHINES

DECOCLEAN 540, RODACLEAN 2018 et KORROSTOP 5000

- **Process:** Degreasing HSS saw blades and preventing corrosion



CLEANING MOULDS AFTER MACHINING

DECOCLEAN 540, RODACLEAN 2018 and KORROSTOP 5000

- **Process:** Removal of residues, oils and metal particles to ensure the cleanliness of the mould after CNC machining and final adjustments (milling, polishing, electrical discharge machining, wire cutting)



CLEANING DRILLS IN SINGLE-CHAMBER MACHINES

DECOCLEAN 520, DECOSPRAY 9 and RODACLEAN 2018

- **Process:** Deoiling of carbide drills or high-speed steels before PVD coating



SUPPORT

- **NGL Academy:** training on precision cleaning, passivation, water treatment, and HSE regulation
- **Application Center:** various cleaning systems and wide range of analytical tools for all types of tests
- **Worldwide and local implementation**

ISO CERTIFICATION*

- ISO 9001 - Quality
- ISO 14001 - Environment
- ISO 45001 - Health and safety at work

*Applicable to the production site at NGL Cleaning Technology SA



Find all our products and application notes specific to cutting tools on our website.





DECOATING STEELS AND CARBIDES

The NGL range of decoating products provides accurate and safe removal of most coatings from carbide, high-speed steel and most types of tool steel.

STEEL MATERIALS

- HSS
- PM HSS (low and high alloyed)
- HSSE
- HSS-Co
- Tool steel (low and high alloyed)
- Stainless steel
- Cold-work steel
- Nitriding steel

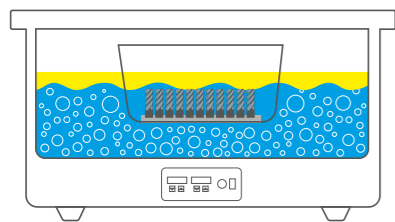
CARBIDE + CERAMIC MATERIALS

- Tungsten carbide
- Cermet
- Zirconium oxide ceramic
- Aluminium oxide ceramic
- Soldered carbides tips steel tools
- cBN
- PCD
- MCD
- Al₂O₃

DETERGENTS, SOLVENT, FINISHING AND SPECIFIC APPLICATIONS

PRODUCT	pH	TYPE	FUNCTION	SAFE DECOATING
FERRODEC 56	7.5	Powdered detergent	Decoating of layer, corrosion inhibitor	Protective film (avoid off-gassing) Non-hazardous
EXCARBONITE 222	11.5			Protective film (avoid off-gassing)
CERLATIN 211	14	Detergent	Decoating of layer, inhibition of cobalt leaching, corrosion inhibitor	Non-flammable Non-toxic under CLP compliant
UNICERAL 308	4			Non-flammable Non-toxic under CLP compliant Non-hazardous

UNICERAL 308 AND CERALTIN 211: EXTRA SAFETY



Oily top phase reduces hazardous fumes and strong evaporation.

SUPPORT

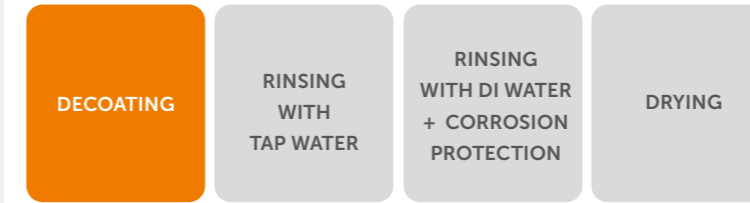
- **NGL Academy:** training on precision cleaning, passivation, water treatment, and HSE regulation
- **Decoating Center :** NGL develops and provides decoating solutions and services for a wide range of tools and parts with different vacuum coatings
- **Worldwide and local implementation**

ISO CERTIFICATION*

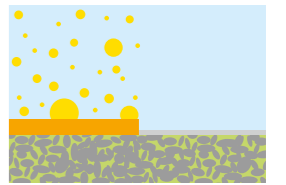
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DECOATING HSS TOOLS



Sandblasting:
Damaged surface
Dulled edges



Chemical decoating:
No damage
to edges and surface

FERRODEC 56

Powdered product for the decoating of aluminium or titanium based layers on steel tools.

Benefits:

- Ready to use
- Fast decoating
- Efficient decoating on Ti and Al based PVD/CVD coatings

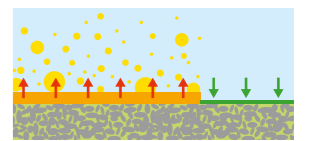
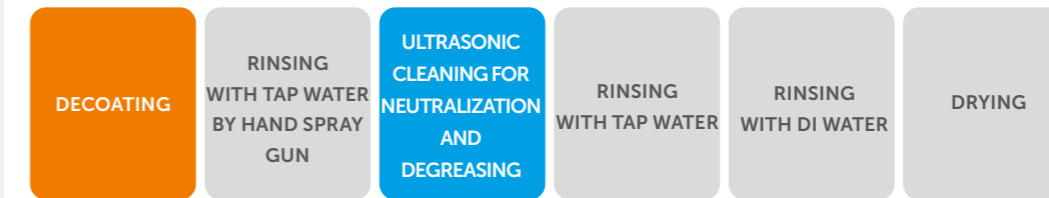
EXCARBONITE 222

Powdered alkaline liquid product for the decoating of chromium or silicon based layers on steel tools.

Benefits:

- Very efficient on Cr and Si layers
- Suitable for all types of steel
- Efficient decoating on DLC(Cr) or DLC(Si) layers

DECOATING CARBIDE TOOLS



Stripping of coating
Cobalt leaching inhibition

UNICERAL 308

Acidic liquid product for the decoating of titanium, aluminium or zirconium PVD layers on carbide tools.

Benefits:

- Ready to use
- Optimized protection of carbide substrates
- Shiny effect after stripping process
- No damage to tools edges

CERALTIN 211

Alkaline Liquid product for the decoating of chromium or silicon based layers on carbides.

Benefits:

- Optimized protection of Carbide substrates
- No crystallization of the bath and no vapor condensate
- Shiny Effect



Find all our products and application notes specific to cutting tools on our website.





COATING / SUBSTRATE / COATING THICKNESS / TIME:

SUBSTRATES	COATINGS							
	TiCN	TiN, TiAlN, AlTiN	TiSiN, TiSiAlN	ZrN, ZrCN	AlCrN, AlCrSiN	DLC: Cr, CrN adhesion layer	DLC ta-C/DLC a-C/ DLC a-C:H	CrN
CARBIDE	U308	U308	U308	U308	C211	x	x	x
Time	1-2μ 18-24h / 2-3μ 48-72h / 3-5μ 3-6j	1-2μ 8-24h / 2-3μ 24-48h / 3-5μ 24-72h	1-2μ 8-24h / 2-3μ 24-48h / 3-5μ 24-72h	1-10h	1-2μ 24-72h / 2-3μ 48h-5d / 3-5μ 3-10j	-	-	-
HSS (with cobalt in the alloy)	U308	U308	U308	U308	E222, possible cobalt leaching	E222, possible cobalt leaching	y	E222, possible cobalt leaching
Time	1-2μ 18-24h / 2-3μ 48-72h / 3-5μ 3-6j	1-2μ 8-24h / 2-3μ 24-48h / 3-5μ 24-72h	1-2μ 8-24h / 2-3μ 24-48h / 3-5μ 24-72h	1-10h	45-180 min	45 min-48h	-	20-120 min
HSS	F56	F56	F56	U308	E222	E222	y	E222
Time	3-6h	1-3h	1-3h	1-10h	20-120 min	45 min-48h	-	20-120 min
HSS (without cobalt in the alloy)	F56	F56	F56	U308	E222	E222	y	E222
Time	3-6h	1-3h	1-3h	1-10h	20-120 min	45 min-48h	-	20-120 min
TOOL STEEL	F56	F56	F56	U308	E222	E222	y	E222
Time	3-6h	1-3h	1-3h	1-10h	20-120 min	45 min-48h	-	20-120 min
STAINLESS STEEL	F56	F56	F56	U308	E222	E222	y	E222
Time	3-6h	1-3h	1-3h	1-10h	20-120 min	45 min-48h	-	20-120 min
NICKEL-CHROMIUM-BASED SUBSTRATES	F56	F56	F56	U308	E222	E222	y	E222
Time	3-6h	1-3h	1-3h	1-10h	20-120 min	45 min-48h	-	20-120 min

x - no solution

y - no solution if no Cr/CrN adhesion layer available

The decoating matrix is a schematic abstract. Due to the high substrate/coating diversity the classification for compatibilities can't be generalized and must be confirmed by test before use.

Decoating bath temperatures:

- U308: Uniceral 308 (80-90°C) / bath circulation required
- F56: Ferrodec 56 (60-80°C) / usually 70°C (158°F)
- E222: Excarbonite 222 (40-70°C) / usually 55°C (131°F) / bath circulation required
- C211: Ceraltin 211 (130-140°C)

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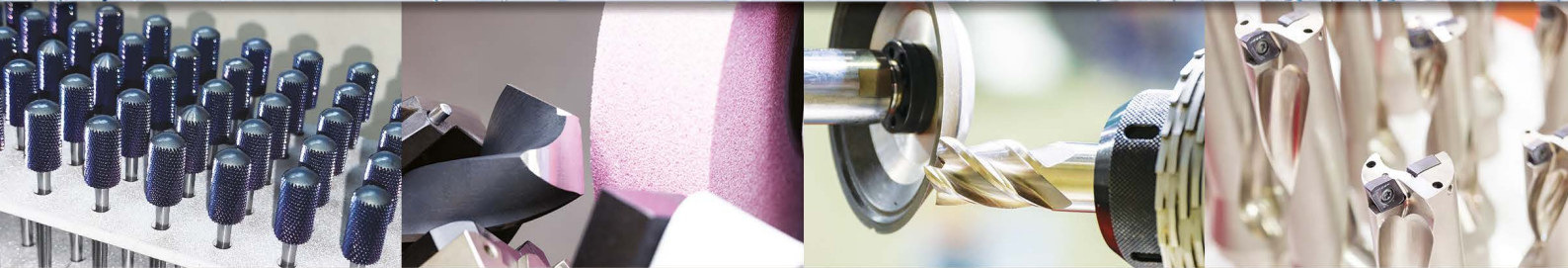
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