

Date:	09.12.2022
Editor:	Füllmann, Robert
Material:	X5CrNi1810 1.4301 1.44XX and 1.4852 with colleagues
Mounting:	Cold, D=40 mm, EpoClear (epoxy resin)

TIP // For reference images, take a look at our wide-ranging microstructure database. There you will find many micrographs of various materials, including their state of heat treatment and the etching agent we used.

[Link to our Microstructure Database \(Gefügedatenbank\)](#)

	Grinding					Polishing			
	1	2	3	4	5	1	2	3	4
Base	SiC paper	SiC paper	SiC paper	SiC paper	SiC paper	PanTec	MolTec	MolTec	ChemTec
Grit size	P220/P500 + Wax	P800 + Wax	P1200 + Wax	P2500 + Wax	P4000 + Wax	6 µm mkd water-based	3 µm mkd water-based	1 µm mkd water-based	< 0,05 µm SiO ₂ OPS
Lubricant	H ₂ O	H ₂ O	H ₂ O	H ₂ O	H ₂ O	coolTec I	coolTec I	coolTec I	-
Drive	150 rpm	150 rpm	150 rpm	150 rpm	150 rpm	150 rpm	150 rpm	150 rpm	150 rpm
Rotation direction	><	><	><	><	><	><	><	><	><
Downforce central pressure!	15 N/sample	15 N/sample	15 N/sample	15 N/sample	15 N/sample	15 N/sample	15 N/sample	15 N/sample	15 N/sample
Time	until planar (2 min)	2,0 min	2,0 min	0,5 min	optional	2,5 min	2,5 min	2,5 min	2+0,5 Spüli
Etching	V2A etching solution @ 70 °C 15-60 seconds, L-PBF parts up to 10 minutes								
Remarks	Grinding with wax, as austenites smear strongly and form a deformation layer; polish to a fine gradation								

Legend [EN]	Legende [DE]
DPS = Diamond Plane Grinding Disc DSS = Diamond Grinding Disc ADAMANT = ADAMANT Diamond Grinding Disc IDAMANT = IDAMANT Diamond Grinding and Polishing Disc	DPS = Diamant-Planschleifscheibe DSS = Diamant-(Fein)schleifscheibe ADAMANT = ADAMANT Diamantschleifscheibe IDAMANT = IDAMANT-Schleifpolierscheibe
>< Countercurrent >> Concurrent	>< Gegenlauf >> Gleichlauf
mkd = monocrystalline Diamond, concentration 50 carat/litre pkd = polycrystalline Diamond, concentration 50 carat/litre	mkd = monokristalliner Diamant, Konzentration 50 Karat/Liter pkd = polykristalliner Diamant, Konzentration 50 Karat/Liter
Lubricant: coolTec I (Water-based) coolTec II (Alcohol-based) coolTec III (Oil-based) coolTec IV (Water-based) coolTec Orange (Anhydrous)	Schmiermittel: coolTec I (Wasserbasis) coolTec II (Alkoholbasis) coolTec III (Ölbasis) coolTec IV (Wasserbasis) coolTec Orange (Wasserfrei)
Spüli: Dishwasher detergent with H ₂ O for cleaning the samples	Spüli: Spüli mit Wasser zum Reinigen der Proben
You can find metallography supplies in our store (link)	Verbrauchsmaterialien finden Sie in unserem Shop (Link)