

Date:	06.12.2022
Editor:	Noll, Theresa
Material:	Ti (Grade 1)   Ti6AlV4 (Grade 5 or Grade 23)   Ti 6242 (Ti-6Al-2Sn-4Zr-2Mo)
Mounting:	Hot (Black bakelite resin, fiber-glass reinforced) or cold (epoxy resin), D=40 mm

**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		ChemTec			
Grit size	P600 + Wax	P800 + Wax	P1200 +Wax	P2500 + Wax		< 0,05 µm SiO <sub>2</sub> OPS + H <sub>2</sub> O <sub>2</sub>			
Lubricant	H <sub>2</sub> O	H <sub>2</sub> O	H <sub>2</sub> O	H <sub>2</sub> O		-			
Drive	150 rpm	150 rpm	150 rpm	150 rpm		150 rpm			
Rotation direction	>>	>>	>>	>>		<<			
Downforce  centralpressure!	15 N/sample	15 N/sample	15 N/sample	15 N/sample		25 N/sample			
Time	1,0 min (then new SiC)	2x 1,0 min	2x 1,0 min	2x 1,0 min		10 - 15 min			
Etching	Kroll: 100 ml H <sub>2</sub> O, 6 ml HNO <sub>3</sub> , 3 ml HF Ti etchant: 60 ml HF, 50 ml H <sub>2</sub> O <sub>2</sub> , 10 ml HNO <sub>3</sub> Colour etchant: 100 ml H <sub>2</sub> O, 25 ml ethanol, 2 g ammonium hydrogen difluoride (Attention: HF is released)!!! Etching time approx. 60 sec								
Remarks	Etching polish with OPS: 250 ml OPS + 2,5 ml H <sub>2</sub> O <sub>2</sub> (30%) Use wax generously!								

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 <sub>2</sub> O for cleaning the samples	Spüli: Spüli mit Wasser zum Reinigen der Proben
<a href="#">You can find metallography supplies in our store (link)</a>	<a href="#">Verbrauchsmaterialien finden Sie in unserem Shop (Link)</a>