Dry friction and wear rates as under liquid lubrication of Ceramic/ Carbon couples up to 450°C

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Rolls-m

i The characteristics to form a tribological layer vni determins the friction and wear behah our of y- mers and solid lubricants. The surface roughness of the disk determines the thickness of the transfer film. For each combination so

-well-defined and constant envrronment conditions, like vnacum, hydrogen or nitrogen

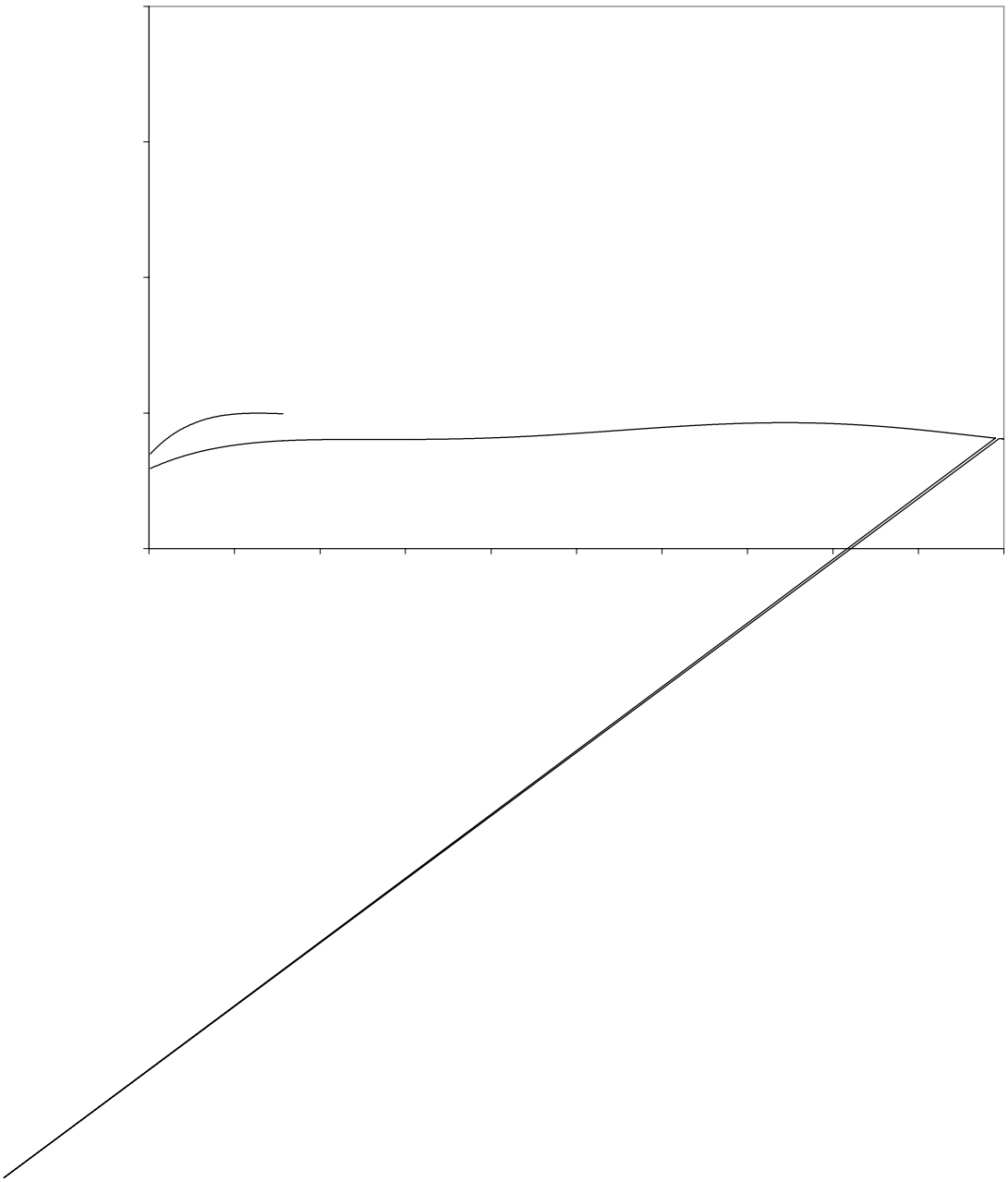
consisted from graphite. Characteristic is the self-lubricated property of graphite as known from different intrinsic or extrinsic solid lubricants.
Various combinations of materials have been tested in a large u

Spectrum. Scans has been made into the pores and on the wear track (Diagram 8-4). The spectrum of

Gardos [41] investigates the characteristic of oxidation of MoS_2 under friction and wear contact. In this connection he characterised also the influence of Hydroxides of friction

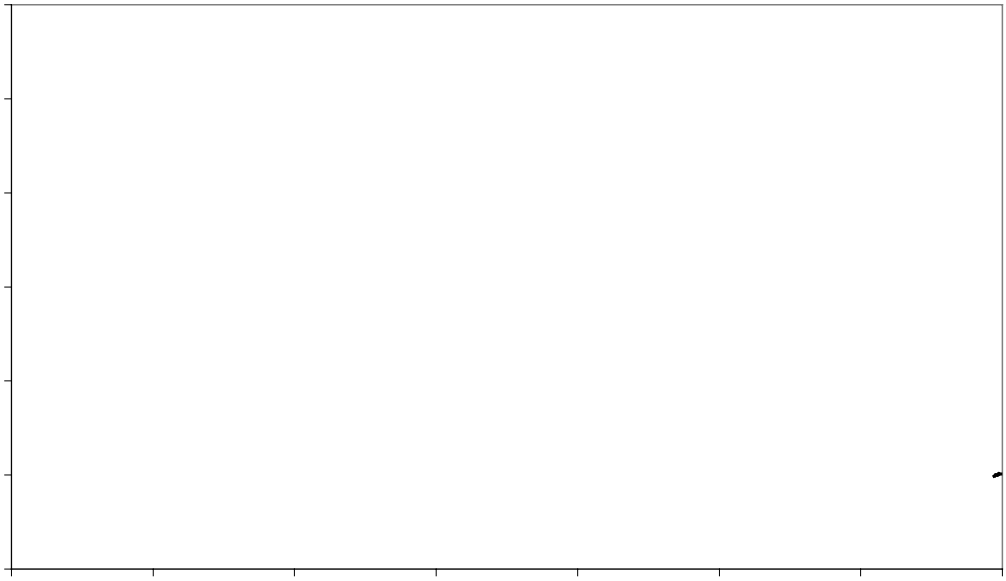
Parameter	Couples and Test Conditions						
Disk	Al_2O_3 [A19999.7]	$MgO-ZrO_2$ [ZN 40]	SSi_3N_4 [ND 200]	SSiC [EkaSiC D]	WC-6Ni [C7P]	(Ti,Mo)(C,N) [TM 10]]	Stahl 1.4876
3245 o **Pin** pregEFEateEd	EKE [1] antimEny imE	EKE 3205[1] antimEny imEprEeEgEnateEd	R 7710[1] KEunsEtharEzE imEprEeEgEnateEd	FEHE 82A[2] antimEny imEprEeEgEnateEd	FEUE42451[2] MEehaseE	ISEOE 8E8[3] MEehaseE	ZXEF-E5EQ[4] MEehaseE
	0E,E0E1E						-E

Picture 8-3 Morphology of the wear track ISO 88 /SSiC, 400°C, H_2O steam, v=3m/s, F_n= 10 N and s= 20.000 m

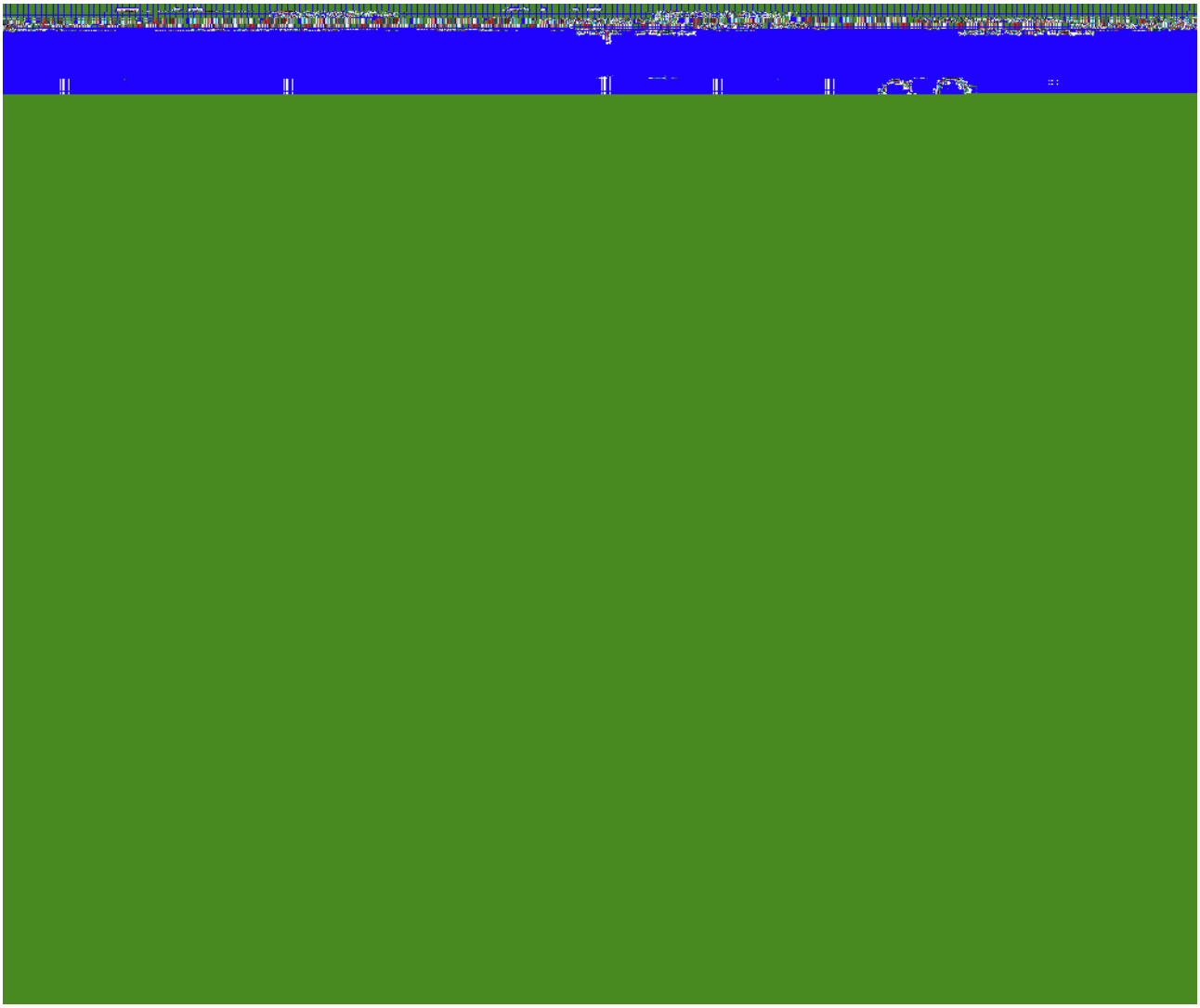


Picture 8-5 Morphology of the wear track on $MgO-ZrO_2$ ceramic with the graphite: left , a) ISO 88 right, b) EK 3245

Number.	1	2	3	4	5	6	7	8	9
manufacturing / grain size	polished 1µm	polished 3µm	polished 6µm	polished 9µm	polished 15µm	polished 15µm	lapped 20 µm	lapped 50 µm	lapped 80 µm
Roughness R_{pk} [µm]	0,007	0,010	0,011	0,021	0,033	0,035	0,029	0,046	0,183

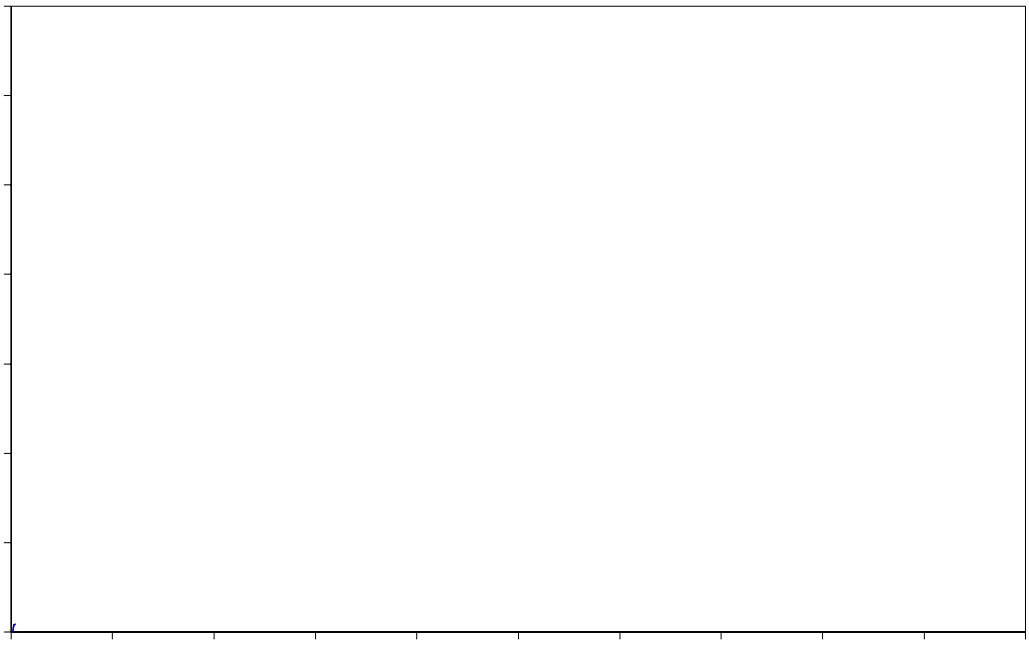


Diagrami



cture 8-8 Structure of Bayerit and Gibbsit as Hydroxide or Hydrate of AlAuminum oxide

Picture 8-90 typical piston/ cylinder arrangement of steam engines



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