



Technical Data Sheet	Grade	Code (SEL)	Cold work tool steel
	OBK8	-	

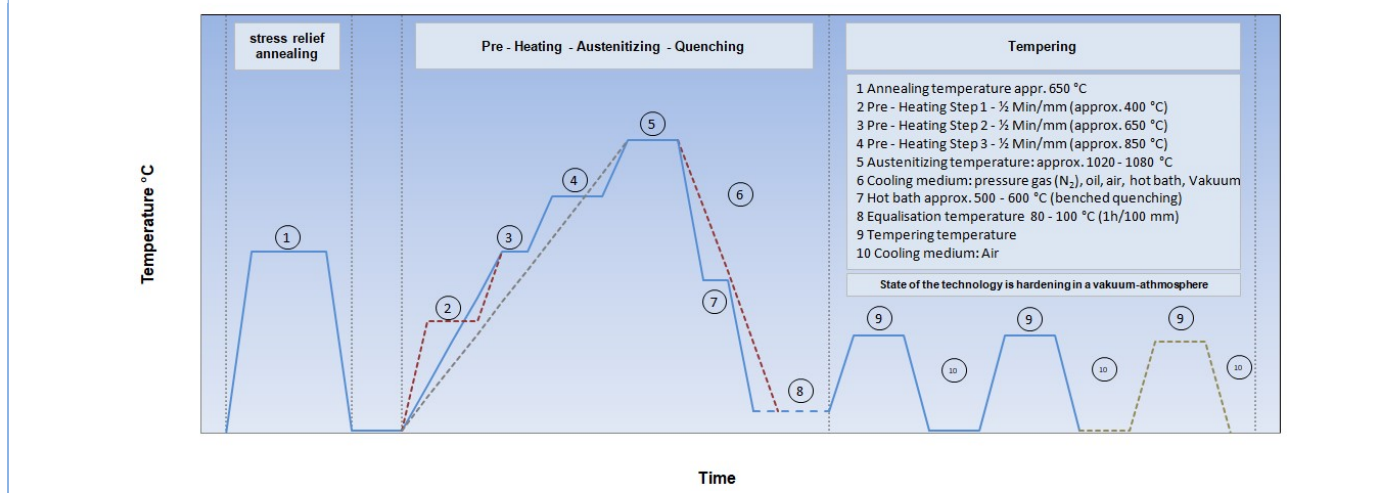
Standards	Steel properties
<b>EN ISO 4957</b> - <b>AFNOR</b> - <b>BS</b> - <b>UNE</b> - <b>UNI</b> - <b>AISI</b> - <b>GOST</b> -	Secondary hardenable steel with very high ductility, high compression strength and high wear resistance. In comparison with 12% - ledeburitic chrome steel or conventional 8% - chrome steel OBK8 has a finer carbide distribution for bigger sizes and a homogeneous microstructure throughout the entire cross section and full length of the bar, with the result of a better machinability and dimensional stability.
	<b>Suitable for:</b> Same applications as 1.2379 (D2) but with higher requirements for ductility. Threading rolls and dies, cold extrusion tools, trimming, cutting and stamping tools, precision cutting tools, cold pilger mandrels, circular-shear blades, deep-drawing tools, pressure pads and highly wear-resistant plastic moulds

C	Si	Mn	Cr	Mo	Ni	V	W	Co	Sonst.
1,10	0,95	0,40	8,30	2,10	-	0,45	-	-	-

<b>Melting</b>	ESU	<b>Remarks</b> -
<b>Density (g/cm³)</b>	7,68	
<b>Supply condition</b>	spheroidized annealed	
<b>Hardness (HB)</b>	max. 255	
<b>Tensile strength (N/mm²)</b>	-	
<b>Work hardness (HRC)</b>	-	
<b>Structure</b>	-	
<b>Cleanness (DIN 50602)</b>	K1 < 15	

Physical properties		20 °C	100 °C	200 °C	300 °C	350 °C	400 °C	500 °C	600 °C	700 °C
<b>Thermal expansion coefficient</b>	10 <sup>-6</sup> * K (20 °C bis ...)	-	-	-	-	-	-	-	-	-
<b>Thermal conductivity (W / m * K)</b>	annealed	-	-	-	-	-	-	-	-	-
	quenched + tempered	-	-	-	-	-	-	-	-	-

**Thermal Cycle Diagram (Heat treatment)**



Hinweis: Die in diesem Datenblatt enthaltenen Angaben dienen der Beschreibung, eine Haftung ist ausgeschlossen.



Heat treatment	Temperature (°C)	Cooling	Remarks heat treatment
<b>Soft annealing</b>	800 - 850	Furnace	Controlled slow cooling in furnace
<b>Stress-relief annealing</b>	650 - 700	Furnace	Slow cooling in furnace. After extensive machining process or complex shapes
<b>Hardening</b>	1020 - 1080		After through-heating hold for 15-30 minutes
Pre – heating Step 1	appr. 400		Upper temperature range for parts of simple shape and highest requirements concerning wear resistance, lower temperature range for parts of complex shape and high ductility requirements
Pre – heating Step 2	appr. 650		
Pre – heating Step 3	appr. 850		
<b>Quenching</b>	500 - 550	hot bath	To reduce as possible thermal stress, size alteration and distorsion it is recommended to use the softest quenching medium.
	appr. 80	Oil	Oftentimes a hot bath hardening with the advantage of less thermal stress. To avoid stress corrosion cracks the steel has to be carried out immediately after hardening and when the steel is at appr. 80 °C.  Cooling down to RT has to be disabled.
	220 - 250	Air	
	appr. 80	pressure gas	

Tempering Chart		Tempering – Hardness after tempering									
	Temperature °C	100	200	300	400	500	550	600	650	700	
	HRC		60	58	59	62	61	58	-	-	
<b>Remarks for tempering</b> Slow heating to tempering temperature immediately after hardening. Time in furnace 1 hour for each 20 mm of workpiece thickness but at least 2 hours.  We recommend tempering in three cycles within the secondary hardness maximum.											

