

**Basic requirements for lone work are:**

Fulfilment of the annual instruction obligation, completed work instructions, successfully completed equipment instructions  
 During the work the intended protective equipment must be worn or the existing protective devices must be used!  
 For minors and apprentices the provisions of the KJBG and KJBG-Vo are valid!

no	lab	activities	threats	evaluation	1	2	3	4	5	notes	area / activity	
					permitted	permitted	permitted	prohibited	prohibited			
1	MET	metallographic sample preparation with rotating grinding and polishing devices	low risk	minor injuries		X				long hair is to be protected	preparation area	
2	MET	etching with acids and corrosive solutions up to a concentration of 10%	low risk	small area chemical burns		X						
3	MET	etching with acids and corrosive solutions with a concentration higher then 10%	very high risk	acute poisoning, eye/skin burns, unconsciousness					X	appropriate PPE must be used, observe SDS		
4	MET	handling toxic chemicals	very high risk	acute poisoning, eye/skin burns, unconsciousness					X			
5	MET	electrolytic etching and polishing	very high risk	acute poisoning, eye/skin burns, unconsciousness					X			
6	MET	laboratory work without exposure to chemical substances, without live parts or without mechanical hazards such as weighing, density measurement etc.	no to low risk	slip	X					observe safety guidelines		
7	MET	laboratory work without exposure to chemical substances, without live parts or without mechanical hazards such as weighing, density measurement etc.	no to low risk	slip	X					observe safety guidelines	microscope area	
8	MECH	performing hardness tests	no to low risk	slip	X					observe safety guidelines	mechanical testing	
9	MECH	performing impact tests	low risk	minor injuries		X						
10	MECH	performing tensile, compression or bending tests	low risk	minor injuries		X						
11	MECH	working with the climate simulation chamber	medium risk	burns / frostbites of the skin			X			appropriate PPE must be used		
12	MECH	working with the drying oven up to 400°C	medium risk	burns of skin			X					
13	MECH	working with the Erichsen sheet metal testing device	low risk	minor injuries		X				observe safety guidelines		
14	ESU	welding	low risk	minor injuries		X				appropriate PPE must be used, observe safety guidelines	preparation work for heat treatment or remelting	
15	ESU	cutting with an angle grinder	low risk	minor injuries		X						
16	ESU	preparation work and performing test runs with the vaccum melt and casting device	low risk	minor injuries		X						
17	ESU	preparation work for heat treatment or remelting	low risk	minor injuries		X						
18	ESU	performing remelting try	very high risk	extensive burns, unconsciousness					X	remelting, heat treating		
19	ESU	carrying out heat treatment try above 400°C	very high risk	extensive burns, unconsciousness					X			
20	KST	working with extruder	medium risk	burns of skin			X			appropriate PPE must be used, observe safety guidelines	working with plastics melt	
21	KST	working with the drying oven up to 400°C	medium risk	burns of skin			X					
22	KST	working with thermoforming device	low risk	small area burns on finger or hand		X						
23	KST	working with rheometer	low risk	small area burns on finger or hand		X						
24	KST	working with hydraulic press	low risk	minor injuries		X						
25	WBH	metallographic sample preparation with rotating grinding and polishing devices	low risk	minor injuries		X						long hair is to be protected
26	WBH	performing hardness tests	no to low risk	slip	X					observe safety guidelines		
27	WBH	preparation work for heat treatment	low risk	minor injuries		X				appropriate PPE must be used, observe safety guidelines	preparation for heat treatment	
28	WBH	working with drying oven up to 400°C	low risk	minor injuries			X					
29	WBH	carrying out heat treatment try above 400°C	very high risk	extensive burns, unconsciousness					X			
30	REM	work with confocal microscope	no to low risk	slip	X					observe safety guidelines	microscope area	
31	REM	work with SEM	no to low risk	slip	X							
32	REM	work with FEM	no to low risk	slip	X							
33	REM	working with the sputtercoater	no to low risk	slip	X							
34	REM	sample preparation	no to low risk	slip	X							
35	WSA	work with GDOES	no to low risk	slip	X							observe safety guidelines
36	WSA	work with XRD	no to low risk	slip	X							
37	WSA	performing contact angle measurements	medium risk	burns of skin, toxic substances			X			appropriate PPE must be used		
38	WSA	work with DSC/DMA and LN2	medium risk	burns / frostbites of the skin			X					
39	TRIBO	work with inverse microscope or stereo microscope	no to low risk	slip	X					observe safety guidelines	tribological investigation area	
40	TRIBO	work with surface roughness tester	no to low risk	slip	X							
41	TRIBO	work with scratch tester	no to low risk	slip	X							
42	TRIBO	work with nano indenter	no to low risk	slip	X							
43	TRIBO	work with pin-on-disc tribometer	no to low risk	slip	X							

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44	OT	Etching with acids and caustic solutions up to a concentration of 10%	low risk	small area chemical burns		X				appropriate PPE must be used, observe safety guidelines	surface technology
45	OT	etching with acids and caustic solutions with a concentration higher than 10%	very high risk	acute poisoning, eye/skin burns, unconsciousness					X		
46	OT	handling toxic chemicals	very high risk	acute poisoning, eye/skin burns, unconsciousness					X		
47	OT	work with potentiostat	low risk	slip		X					
48	OT	working with drying oven up to 400°C	medium risk	burns of skin			X				
49	OT	work with plasma spray unit	medium risk	burns of skin			X				
50	DIL	work with dilatometer	no to low risk	slip	X					observe safety guidelines	dilatometry
51	DIL	working with thermocouple spot welder	no to low risk	slip	X						
52	PBB	work with PACVD plant	no to low risk	slip	X					observe safety guidelines	plasma treatment and coating area
53	PBB	maintenance and modification of the PACVD system	medium risk	risk of burns, chemical substances			X			appropriate PPE must be used, observe safety guidelines	
54	PBB	work with PVD system	no to low risk	slip	X					observe safety guidelines	
55	PBB	maintenance and modification of the PVD system	medium risk	risk of burns, chemical substances			X				
56	PBB	working with blast cleaning devices	low risk	minor injuries		X				appropriate PPE must be used, observe safety guidelines	
57	PBB	Maintenance of blast cleaning devices	low risk	minor injuries		X					
58	MFL	working with resins	low risk	small area chemical burns		X				appropriate PPE must be used, observe SDS	composites and plastics
59	MFL	working with tube welder	medium risk	burns of skin			X			appropriate PPE must be used, observe safety guidelines	
60	MFL	working with socket welder	medium risk	burns of skin			X				
61	MFL	working with hot gas welding equipment	medium risk	burns of skin			X				
62	MFL	working with composite cutting device	low risk	minor injuries		X					