

	<h1>Technical Information</h1>	<b>730-161-EN</b>		<b>V03</b>
	<h2>Wash-off characteristics of GKE Cleaning Process Monitoring Indicators (CPI)</h2>	Created	20.08.2019	UK
		Changed	06.08.2021	KP
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		<b>File no.: 6.1</b>		

GKE offers 5 different CPI versions:



The wash-off characteristics of the GKE CPI heavily depend on the process used and its parameters: water quality, detergent, temperature and time. Since there is no standard test method available, it is not possible to describe which test soils the different GKE CPI versions represent. However, GKE has developed a test rig to be able to compare test soils under defined conditions. Below tables show different test results of the GKE CPI compared with different test soils described in ISO/TS 15883-5:2005.

Test soils according to ISO/TS 15883-5 + 4 gke CPI	% test soil left on the plate, with different spray time						
	10 sec	20 sec	30 sec	1 min	3 min	5 min	10 min
Germany, Annex H, Mucin, bovine albumin	3	1	0				
Germany, Annex G, Sheep blood	30	1	0				
Austria, Annex A, Sheep blood, protamine sulphate	5	2	1	0			
Austria, Annex B, Nigrosine, flour, egg	95	80	60	15	0		
Austria, Annex C, Nigrosine, flour, egg, potato starch	95	45	15	1	0		
United Kingdom, Annex P, Flour, water soluble wallpaper paste, egg, black ink	65	35	10	3	0		
<b>W-CPI-Y yellow</b>	<b>30</b>	<b>20</b>	<b>10</b>	<b>5</b>	<b>1</b>	<b>0</b>	
Germany, Annex G, Semolina pudding	65	40	25	5	1	0	
United Kingdom, Annex Q, Sheep blood, water soluble wallpaper paste, egg, black ink	3	1	1	1	1	1	1
<b>W-CPI-G green</b>	<b>100</b>	<b>100</b>	<b>95</b>	<b>75</b>	<b>30</b>	<b>5</b>	<b>1</b>
United Kingdom, Annex N, Egg yolk, sheep blood, mucin	98	95	90	75	50	35	10
Germany, Annex H, corn starch	30	30	30	30	25	25	20
Germany, Annex G, egg yolk	100	100	100	99	95	60	25
<b>W-CPI-B blue</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>97</b>
<b>W-CPI-R red</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

Table 1: Test results of the GKE spray test rig with demineralized water, flow rate 1.0 l/min at 55°C

Test soils according to ISO/TS 15883-5 + 4 gke CPI	Process time in seconds % test soil left on the plate						
	10 sec	20 sec	30 sec	1 min	3 min	5 min	10 min
Germany, Annex H, Mucin, bovine albumin	3	1	0				
Germany, Annex G, sheep blood	5	1	0				
<b>W-CPI-G green</b>	<b>5</b>	<b>2</b>	<b>0</b>				
Austria, Annex A, sheep blood, protamine sulphate	10	3	1	0			
Austria, Annex C, Nigrosine, flour, egg, potato starch	75	55	10	1	0		
<b>W-CPI-Y yellow</b>	<b>30</b>	<b>20</b>	<b>10</b>	<b>3</b>	<b>0</b>		
United Kingdom, Annex P, Flour, water soluble wallpaper paste, egg, black ink	35	15	5	5	0		
Germany, Annex G, egg yolk	90	50	20	5	0		
Austria, Annex B, Nigrosine, flour, egg	95	75	25	5	0		
Germany, Annex G, semolina pudding	30	20	10	3	1	0	
United Kingdom, Annex N, egg yolk, sheep blood, Mucin	97	85	70	20	10	0	
<b>W-CPI-B blue</b>	<b>40</b>	<b>25</b>	<b>15</b>	<b>5</b>	<b>3</b>	<b>1</b>	<b>0</b>
United Kingdom, Annex Q, Sheep blood, water soluble wallpaper paste, egg, black ink	2	1	1	1	1	1	1
Germany, Annex H, corn starch	20	20	20	15	15	15	10
<b>W-CPI-R red</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>80</b>

only 0.3 % detergent has been added

Table 2: Test results of the GKE spray test rig with demineralized water, using 0.3 % detergent, flow rate 1.0 l/min at 55°C

To find the suitable CPI for routine monitoring, all CPI versions have to be tested. For details please see our Technical Information TI 730-126.