



BRÄNDLE

**Brändle GmbH, Sulgauerstr. 34-36; D-78713
Schrumberg**



DAkkS

Deutsche
Akkreditierungsstelle
D-PL-11129-01-00

Analysennummer: 11062015

Cleanliness Analysis according ISO 16232

Schrumberg, the 20.06.2011

Technical director:

Ralf Brändle

Inspector:

H. Kilos

The test result refers exclusively to this test item. A publication of the report in parts or excerpts is not allowed. The audit report should be used only as a whole.

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Prüfgegenstand			
Component:	article	Customer:	Company
Component-Nr:	2012	Date of Extraction:	20.06.2011
Sample-Nr.:	Blank tets after analysis	Input Date:	19.06.2011

Extraction			
Method:	Spraying	Parts per Analysis:	
Liquid:	Haku 1025-921	Component Surface [cm ²]	
Amount [Liter]:	1	Membrane Type:	Pall NCG047100 5 µm
Weight [mg]:	0,18	Prüfdruck:	2 bar
System:	B02	Nozzle Diameter:	4 mm
Drying:	Drying oven 100°C	Filter diameter:	47mm
Balance:	Kern ALT 220	Balance resolution:	0,01 mg
		Test enviroment	Cleanroom
Examiner:	Kloos	Date of Analysis:	20.06.2011

Microscopic Analysis			
Scale:	X:6,2 µm/Pxl Y:6,2 µm/Pxl	Evaluation Diameter [mm]:	44,0

Largest metallic particle	Length[µm]	28	Width [µm]	12
Largest nonmetallic particle ¹	Length[µm]	44	Width [µm]	31
Fiber parts ²	Length of largest fiber [µm]:		Total length fibers [mm]:	

Particle size [µm]	Code	Particle count ¹ on membrane		Particle count ¹ per sample		Particle count ¹ per 1000 cm ²	
		Total ¹	Metallic	Total ¹	Metallic	Total ¹	Metallic

Summarized results:

> 400	I-K	0	0				
100 - 400	F-H	0	0				
5 - 100	B-E	41	1				

Detailed results:

> 1000	K	0	0				
600 - 1000	J	0	0				
400 - 600	I	0	0				
200 - 400	H	0	0				
150 - 200	G	0	0				
100 - 150	F	0	0				
50 -100	E	0	0				
25- 50	D	7	1				
15 - 25	C	10	0				
5 - 15	B	24	0				

CCC (Component Cleanliness Code):

Compendium (B-E/F-H/I-K)	Total ¹	Metallic
Per 1000 cm ²		
(B/C/D/E/F/G/H/I/J/K)		
Per 1000cm ²		

¹: Particles without fibers

Remarks



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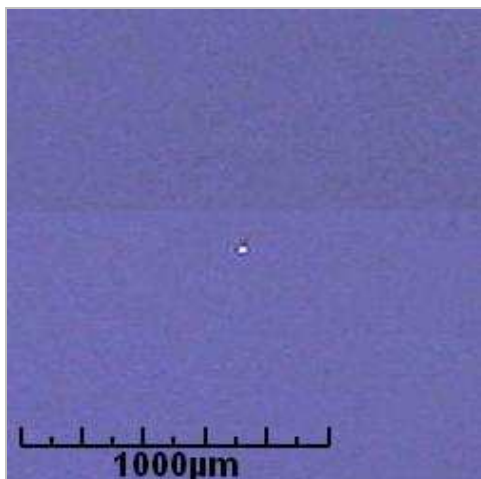


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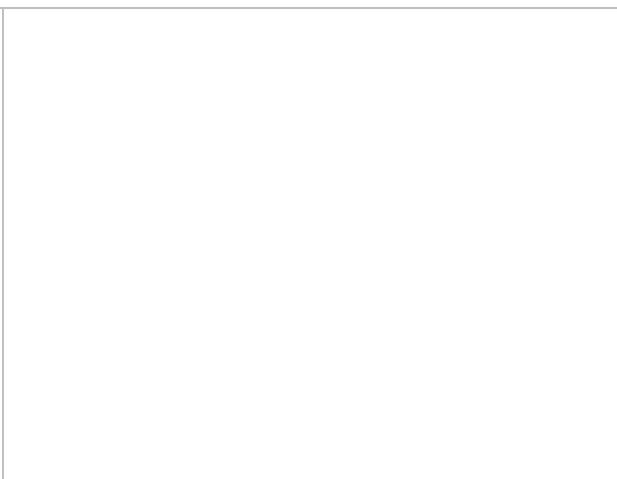
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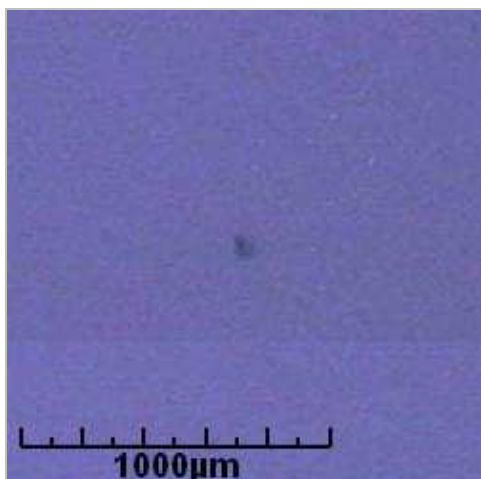
Images:



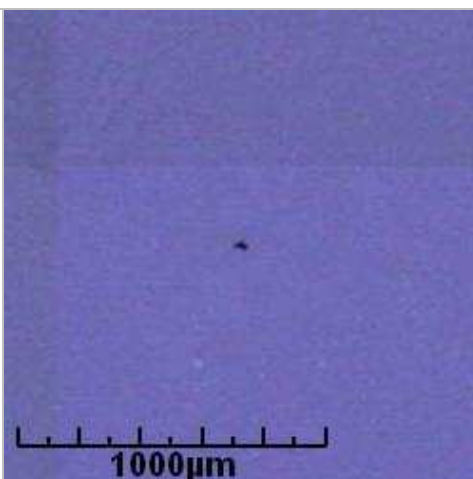
Largest metallic particle



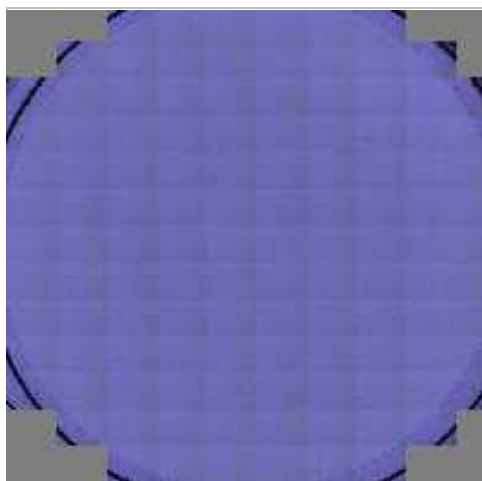
Second largest metallic particle



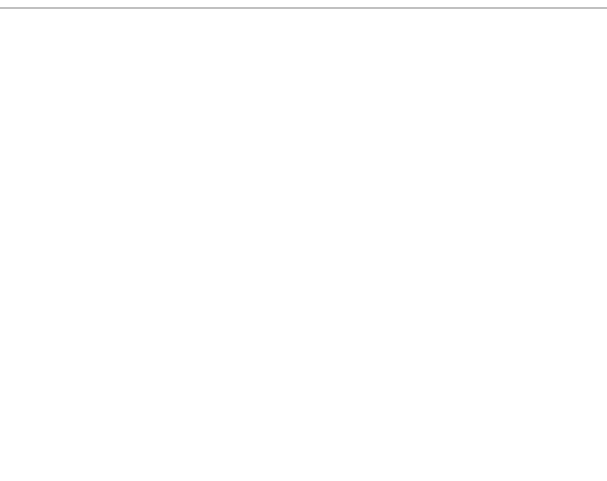
Largest nonmetallic (nonfiber) particle



Second largest nonmetallic (nonfiber) particle



Membrane overview



Largest fiber