DAkkS Deutsche Akkreditierungsstelle D-PL-18556-01-00

CasoCleanCheck Quality Improvement GbR

Am Gewerbepark 43
64823 Groß-Umstadt

Test Report

Cleanliness test according to VDA 19.1 2015

Description of Sample (information provided by the customer)			
Component:		Incoming date:	
Component No.:		Sampling place:	
Supplier:		Date of Analysis:	
Report number:		Examiner:	
Contract:		No. of parts received:	
Tested Area:		Surface [cm²]:	
Customer:		Volume [cm³]:	
Address:		Part Description:	

Test requirements (information provided by the customer)
Target values: no particles > 500 µm and 0,5mg/cm³ from Hella 10000622501

Extraction			
Extraction Method:	Spray	Equipment:	Analysis system
Liquid:	Desolvit	Filter Type:	PET 5 µm
Amount [L]:	5,1	Volume flow[l/min]:	1,5
Rewash quantity[L]:	0,5	Parts on Filter:	10
Nozzle diameter:	2,5 mm	Test environment:	Filtered & climate-controlled
Nozzle geometry:	Round	Spraying distance:	<15cm

Microscopic Analysis					
Scale:	X:5,0 µm/Pxl Y:5,0 µm/Pxl	Evaluated Ø [mm]:	44		
Filter occupancy [%]:	0,27817	allowed Occupancy:	1,5 % (Cellulose), 3 % (Nylon)		
Largest metallic particle		Length [µm]:	141	Width [µm]:	47
Largest nonmetallic particle		Length [µm]:	739	Width [µm]:	321
Stretched length of longest fiber		L_{str} [µm]:	740	Total [mm]:	2,9

		Number of particles on filter				Number of particles per 1000 cm²			
Particle size [µm] Detailed Stats:	Code	Altogether	Metallic sheen	Not shiny	Fibers	Altogether	Metallic sheen	Not shiny	Fibers
> 3000	N	0	0	0	0	0,0	0,0	0,0	0,0
2000 - 3000	M	0	0	0	0	0,0	0,0	0,0	0,0
1500 - 2000	L	0	0	0	0	0,0	0,0	0,0	0,0
1000 - 1500	K	0	0	0	0	0,0	0,0	0,0	0,0
600 - 1000	J	1	0	1	1	1,0	0,0	1,0	1,0
400 - 600	I	0	0	0	0	0,0	0,0	0,0	0,0
200 - 400	H	19	0	19	7	18,8	0,0	18,8	6,9
150 - 200	G	39	0	39	0	38,7	0,0	38,7	0,0
100 - 150	F	130	1	129	0	128,9	1,0	127,9	0,0
50 - 100	E	701	6	695	0	695,0	5,9	689,1	0,0

CCC (Component Cleanliness Code):
Total = A(E10/F7/G6/H5/I00/J0/K-N00)

Gravimetric analysis

	Target	Is
Particle in mg/100cm³	0,50	0,36
Weight of the Particles on all the parts (10 part.) mg	0,32	0,23
Weight of the Particles on each part in mg	0,032	0,023

Remarks: A manual follow-up control of the complete filter was performed for all the particles > 200µm.

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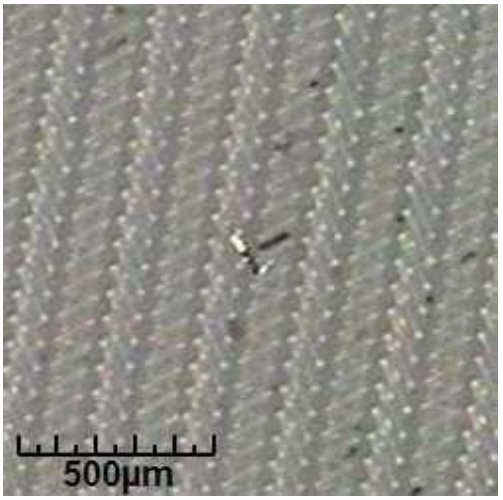
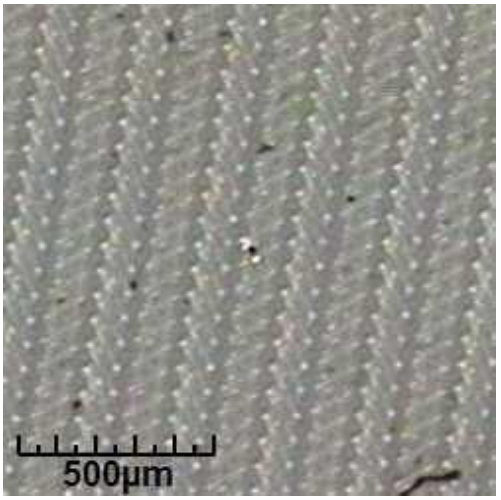
Images:



Largest metallic particle
141 µm x 47 µm

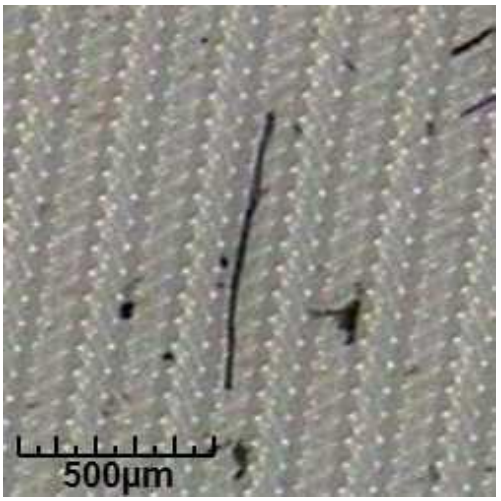


Second largest metallic particle
80 µm x 22 µm

Largest nonmetallic particle
739 µm x 321 µm

Second largest nonmetallic particle
390 µm x 363 µm

Membrane Overview
0,28 % Occupancy at Ø = 44 mm



Longest Fibers
$Feret_{max}$ = 720 µm / L_{str} = 740 µm

Note: Results relate only to the parts audited by us. Incorrect customer information can affect the validity of the test results. The measurement uncertainty is not considered for the declaration of conformity regarding the specification or standard. The target and is values are compared directly. Key: = pass, = fail

Signature

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-End of the report-