Technical cleanliness

Study features

Reference :	For Lab Italia S.r.l.
Type of test :	Technical Cleanliness
Operator :	
Notes :	
Sampled on :	17/09/2019
Study file :	For Lab Italia.ftx
Date of study :	17/09/2019
Number of parts :	1 part

Additional information

Identification part :	Sample
Membrane :	5 µm
Gravimetry :	0,2 mg ≤ 1 mg
Technique :	Spraying
Fluid amount :	3 l (0,5 l for rinsing)
Vol. stream :	1 l/min
Extraction device :	Gläser ACM 17
Exraction fluid :	solvent cleaning agent Kluthe HAKU 1025-921
Instrument type :	Microscope
Laboratory balance :	Mettler-Toledo AM100
Drying :	Exsiccator 80°C
Largest non-metallic particle :	363 µm ≤ 500 µm
Largest metallic particle :	342 µm ≤ 500 µm
Largest fibre :	852 µm ≤ 3000 µm

Non-metallic particles

VDA 19 - ISO 16232 (Non-metallic particles)

Class	Particle count	Specification limit (1)	Conformity
50 - 100 µm (E)	392		C
100 - 150 µm (F)	60	260	C
150 - 200 µm (G)	23	160	C
200 - 400 µm (H)	23	125	C
400 - 600 µm (I)	0	20	C
600 - 1000 µm (J)	0	0	C
>= 1000 µm (K)	0	0	C
Total count	498		

CCC : N(E392/F60/G23/H23/I0/J0/K0)

Sample : conform

(1) Related to standardized count (2).

(2) 1 part related to 1 part.

Metallic particles

VDA 19 - ISO 16232 (Metallic particles)			
Class	**Particle count**	**Specification limit (1)**	**Conformity**
50 - 100 µm (E)	7		C
100 - 150 µm (F)	7	90	C
150 - 200 µm (G)	2	60	C
200 - 400 µm (H)	4	45	C
400 - 600 µm (I)	0	10	C
600 - 1000 µm (J)	0	0	C
>= 1000 µm (K)	0	0	C

Total count	20	
incl. Metallic (3)	20	

CCC : N(E7/F7/G2/H4/I0/J0/K0)

Sample : conform

(1) Related to standardized count (2).
(2) 1 part related to 1 part.
(3) Metallic : median > 50,0 µm and intensity > 28,0 % and luster > 9,50 %.

Total particle without fibres

VDA 19 - ISO 16232	
Class	**Particle count**
50 - 100 µm (E)	399
100 - 150 µm (F)	67
150 - 200 µm (G)	25
200 - 400 µm (H)	27
400 - 600 µm (I)	0
600 - 1000 µm (J)	0
>= 1000 µm (K)	0

Total count	518
incl. Metallic (1)	20

CCC : N(E399/F67/G25/H27/I0/J0/K0)

(1) Metallic : median > 50,0 µm and intensity > 28,0 % and luster > 9,50 %.

Fibers

VDA 19 - ISO 16232 (Fibres)			
Class	**Particle count**	**Specification limit (1)**	**Conformity**
50 - 100 µm (E)	7		C
100 - 150 µm (F)	3		C
150 - 200 µm (G)	4		C
200 - 400 µm (H)	15		C
400 - 600 µm (I)	7		C
600 - 1000 µm (J)	1		C
1000 - 1500 µm (K)	0		C
1500 - 2000 µm (L)	0		C
2000 - 3000 µm (M)	0		C
>= 3000 µm (N)	0	0	C

Total count	37	
incl. Fibers (3)	37	

CCC : N(E7/F3/G4/H15/I7/J1/K0/L0/M0/N0)

Sample : conform

(1) Related to standardized count (2).
(2) 1 part related to 1 part.
(3) Fibers : median > 50,0 µm and elongation (M/t) > 20,0.

Total particles with fibres

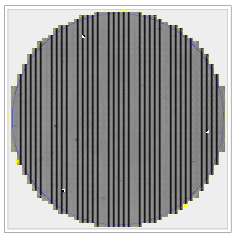
VDA 19 - ISO 16232	
Class	**Particle count**
50 - 100 µm (E)	406
100 - 150 µm (F)	70
150 - 200 µm (G)	29
200 - 400 µm (H)	42
400 - 600 µm (I)	7
600 - 1000 µm (J)	1
>= 1000 µm (K)	0

Total count	555
incl. Fibers (1)	37
incl. Metallic (2)	20

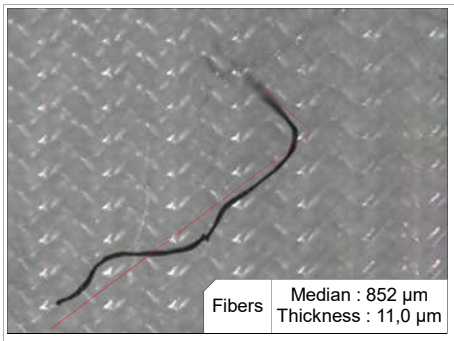
CCC : N(E406/F70/G29/H42/I7/J1/K0)

(1) Fibers : median > 50,0 µm and elongation (M/t) > 20,0.
(2) Metallic : median > 50,0 µm and intensity > 28,0 % and luster > 9,50 %.

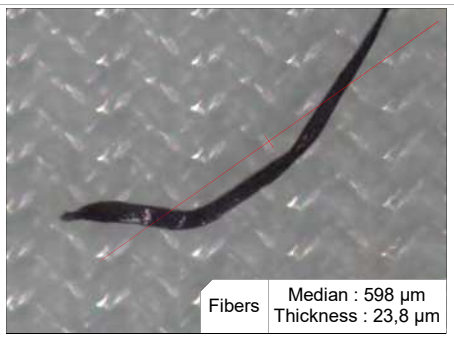
Overview



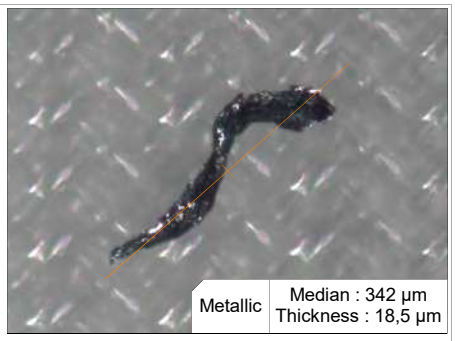
Portfolio



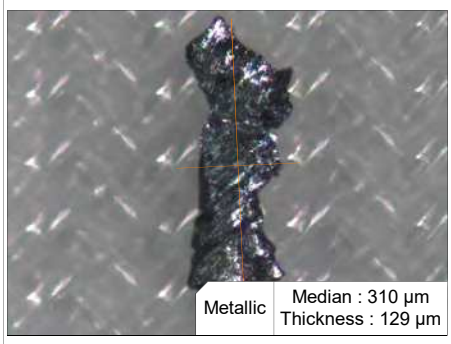
Fibers	Median : 852 µm Thickness : 11,0 µm



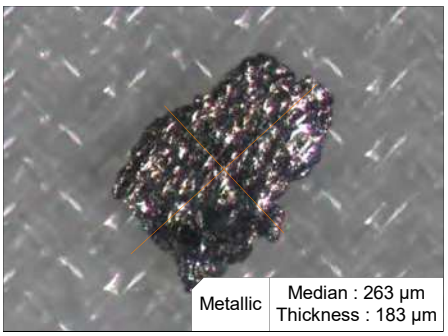
Fibers	Median : 598 µm Thickness : 23,8 µm



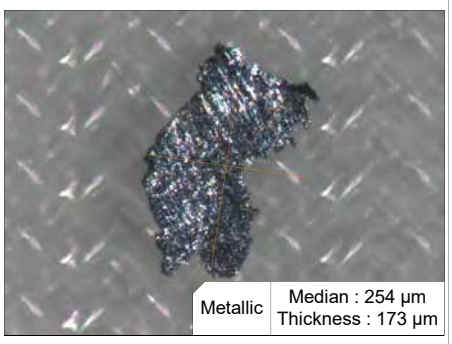
Metallic	Median : 342 µm Thickness : 18,5 µm



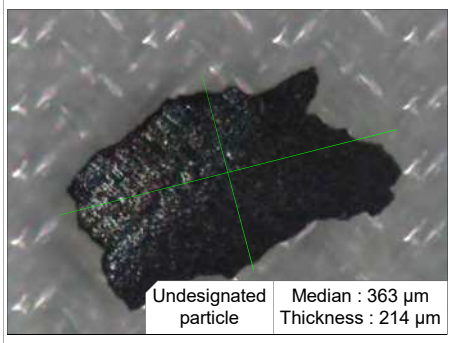
Metallic	Median : 310 µm Thickness : 129 µm



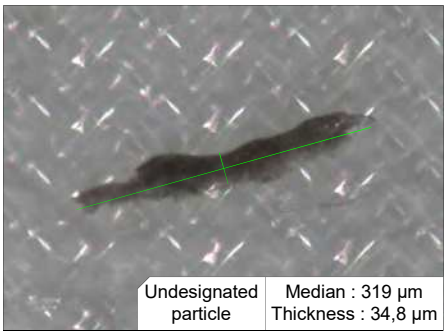
Metallic	Median : 263 µm Thickness : 183 µm



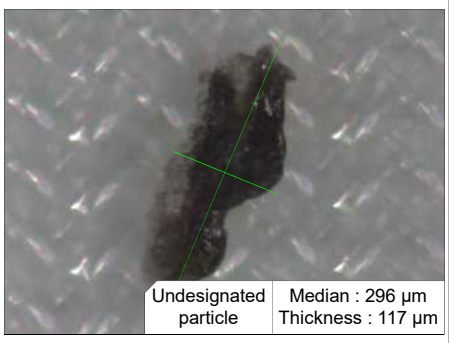
Metallic	Median : 254 µm Thickness : 173 µm



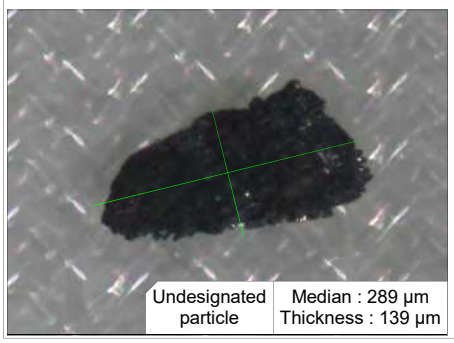
Undesignated particle	Median : 363 µm Thickness : 214 µm



Undesignated particle	Median : 319 µm Thickness : 34,8 µm



Undesignated particle	Median : 296 µm Thickness : 117 µm



Undesignated particle	Median : 289 µm Thickness : 139 µm