

GRIPFOLD



Mitten cloth for precision cleaning in special applications

Made in Germany

The GRIPFOLD is a precision cleaning cloth which has been optimised by means of a special design to meet two specific requirements. First, the aim was to create a cleaning cloth that would be better at cleaning hard-to-reach places on cleanroom equipment than normal wiping cloths. The second goal was to make gripping and holding the cloth easier, thus increasing the cleaning effectiveness of the cloth. The GRIPFOLD cloth fulfils both requirements. The successful use in cleaning plasma etching chambers in semiconductor production and the proven reduction of cleaning time for surface contaminants make this clear. The increased cleaning effectiveness of this wiper results from the enlargement of the effective cleaning surface of the outstretched hand in comparison to a "clutched ball shape" of the cloth (see the reference literature: Labuda, Siegmann "HiTech Wipers: Handling Modes and Active Surfaces in Cleaning by Wiping Procedures").



GRIPFOLD is basically made up of SONIT®-HDM. The image on the right taken with our scanning electron microscope clearly shows the fineness of the yarn used to make this knitted wiper. The cloth is close-meshed, which makes it especially suitable for picking up small-dimensioned particles. Polyester yarns have a high tensile strength even in these small diameters, so that fibre breakage during cleaning work is rare in comparison to wiping cloths consisting partly of cellulose. This knitted wiper adapts closely to the topography of the machine or technical surfaces, enabling efficient precision cleaning in relatively little time.

Characteristics

knitware from microfilament yarn, flat packs

Features

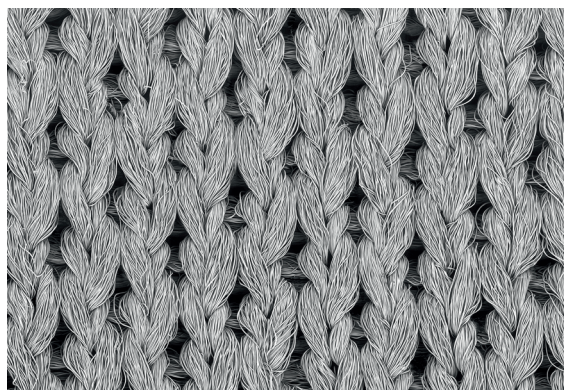
adapted form for better handling, reduced cleaning time through extended contact areas

Application

for cleaning difficult to access areas inside machinery like isolators or angular chambers

General technical specification

Textile construction	knitware	
Mesh / cm ²	540	
Cutting	ultrasonic	
Possible decontamination	nonionic surfactant	
Decontaminated	yes	
Washable	possible	
Sterilisable	possible	
Stat. Quality control	yes	



SEM photo Yuko Labuda, image height 3 mm

General technical data

Mechanical parameters	Value	Unit	After method
Thickness	0.60	mm	ISO 9073-2
Surface weight	185	g/m ²	ISO 9073-1
Break load dry, longitudinal direction	424	N	ISO 9073-3
Break load dry, lateral direction	460	N	ISO 9073-3
Elongation at break, longitudinal direction	86	mm	ISO 9073-3
Elongation at break, lateral direction	117	mm	ISO 9073-3

Particle release data	Value	Unit	After method
Labuda-Cleaning efficacy based on oil film MULTIDRAW KTL N 16	83.2	%	C&C-W-RE
Particle residue (Particle > 0.5 µm) after wiping on surface Rz 5 µm	3.0	k-Part/cm ²	C&C-W-PF-S
Particle residue (Particle > 0.5 µm) after wiping on surface Rz 39 µm	6.8	k-Part/cm ²	C&C-W-PF-S
Air particle release (at 40% relH) by Labuda Fulling Simulator Mk1	275	Part 0.5 µm/ min	
Cleanroom class according to ISO 14644-1	Cleanroom consumables cannot be specified for air purity classes (see VDI 2083 - sheet 9.2).		

Water absorption (DI water)	Value	Unit	After method
Total	431.2	g/m ²	
Average absorption rate in 5 s	0.44	g	C&C-W-AK-R
Average absorption rate in 60 s	0.7	g	C&C-W-AK-R
Drop absorption time	151	ms	C&C-W-EZ
DI-Water after wet wiping	6	%	C&C-W-RF

Chemical resistance	Value	Unit	After method
Charge of break-load (long) after 2.5 min immersion into various solvents			
Dry	424	N	C&C-W-CF
Water	-4	%	C&C-W-CF
Isopropyl	+11	%	C&C-W-CF
Acetone	+5	%	C&C-W-CF

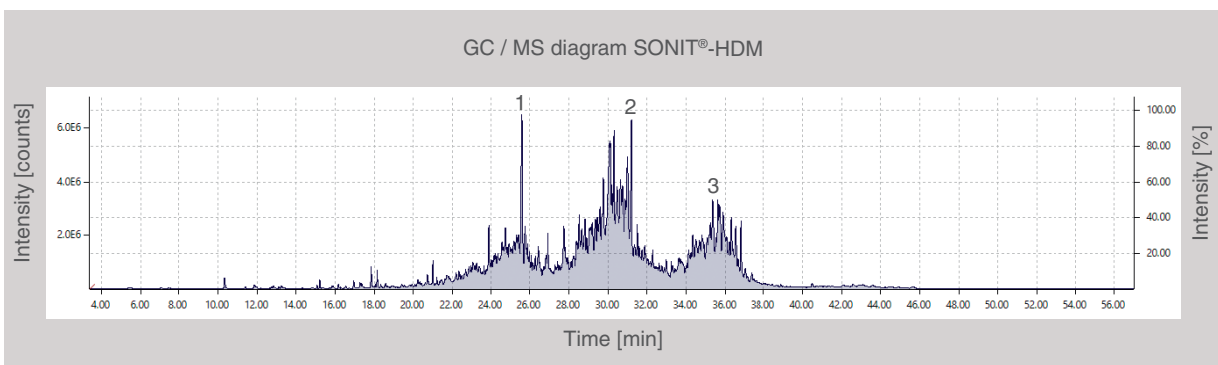
Triboelectricity at 40% relH and room temperature	Value	Unit	After method
Discharge after 60 s	50.0	%	CC-W-TE

Anion and cation inventory in ppm measurement with capillary electrophoresis

Chloride	Fluoride	Nitrate	Nitrite	Phosphate	Sulphate		
0.091	0.066	0.526	-	-	-		
Ammonium	Barium	Calcium	Potassium	Lithium	Magnesium	Sodium	Strontium
0.05	-	0.101	0.156	-	-	0.231	-

All data in this sheet are based on measurements taken at the time of their issuance. The publication of this document does not constitute a guarantee for the continued compliance with these data. On request, you will receive current data and tolerance limits from our laboratory. Subject to change without prior notice. Errors and omissions excepted. Clear & Clean is a company certified according to the EN ISO 9001 : 2015 standard. The quality assurance measures are described in our quality manual. When the data contained in this data sheet are changed, no automatic alteration is made. Clean room consumable products cannot be classified according to a clean room class for air purity according to ISO-14644-1.

SONIT[®] is a registered European Union trademark (No. 018305462) of Clear & Clean Werk für Reintechnik GmbH in Lübeck.



Outgassing at 90 ° C. 1: dodecanol 2: lauryl ethoxylate 3: hexadecanol

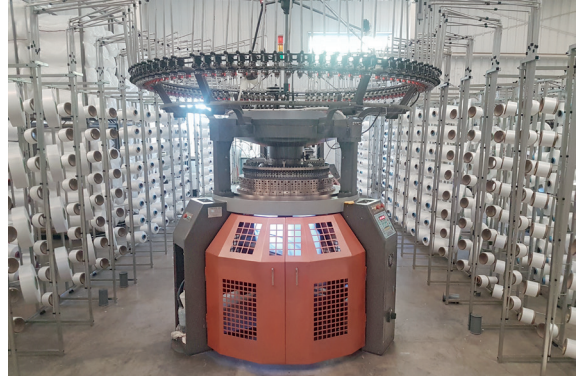
Order and packing information / single packs GRIPFOLD

Type	Roll width in cm	Running length in m	Core diameter in mm		Rolls per carton	Weight per roll in kg	Dimensions p. carton in cm
CC144	13 x 22	flat pack	10	50	500	6.5	50 x 30 x 30

From yarn to hi-tech cleaning wipers



knitted multifilament yarn as roll goods



an industrial knitting machine



our laser formatting for knit wipers



Example: our aquatic decontamination



our visual inspection and packaging in the ISO 5 clean room



Example: cleaning optical components