



# LemonMedical®

LemonMedical GmbH | Dr.-Georg-Schaefer-Straße 14 | D-97762 Hammelburg

LemonMedical GmbH

Dr.-Georg-Schaefer-Str.14  
D-97762 Hammelburg

Fon +49 9732 78815-10  
Fax +49 9732 78815-11  
info@lemonmedical.com

[www.lemonmedical.com](http://www.lemonmedical.com)

## Viren- und Bakterienfilter Pulmosafe® / Conformation of virus and bacterial filters Pulmosafe®

Sehr geehrte Damen und Herren,

Das von uns ausschließlich für die Produktion der hocheffizienten Viren- & Bakterienfilter Pulmosafe® verarbeitete Filtervlies wurde von Public Health England und von Palas GmbH Partikel- und Lasermesstechnik, Karlsruhe, auf Durchlässigkeit getestet. Die Testergebnisse haben ergeben, dass das verarbeitete Filtervlies, auch bei hohen Strömungsgeschwindigkeiten, vor COVID-19 Virus schützt. Testprotokolle sind dem Schreiben angehängt.

Dear Ladies and Gentlemen,

Hereby we confirm, that our product named Pulmosafe® and all correlating product variations like 2-Safety-Pack, 3-Safety-Pack, 2-Safety-Pack-S and 3-Safety-Pack-S are using exclusively filter material has been tested for penetration by Public Health England Palas GmbH, Karlsruhe. The test results have shown that the processed filter fleece protects against the COVID-19 virus, even at high flow rates.

Test protocols are attached to the letter.

Hammelburg, 11. Mai 2020

  
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Alfred Albert  
CEO

### Bank accounts

Commerzbank AG  
IBAN: DE75 7934 0054 0659 3362 00  
SWIFT/BIC: COBADEFF793

Bank Schilling Hammelburg  
IBAN: DE94 7903 2038 0029 1730 02  
SWIFT/BIC: BSHADE71

### Managing Directors Geschäftsführer

Alfred Albert, Michaela Albert  
Commercial court Amtsgericht Schweinfurt, HRB 5531  
Steuer Nr. 205/131/20045 . VAT ID No: DE263530798

## Results

### Test Conditions

Date	9 <sup>th</sup> January 2017	Challenge Micro-organisms	<i>Bacillus atrophaeus</i> NCTC 10073	
Operators	Anna Moy	Suspension Fluid	Sterile Distilled Water	
Apparatus	Small Rig	Concentration	6.45 x 10 <sup>5</sup> cfu/ml	
Spray	3 Jet Collision			
Relative Humidity (RH):		Ambient	Temperature: 22 ± 3°C	
Samplers	All glass Impingers	Sampling Time	5 min at 750 Litres/min	
Collecting Fluid	PBMA		Volume	Various

F1 = Typ I PS – Pulmosafe® II Ref: 1031, Lot: 347/16, Exp.: 12-2019

Filters Tested:

### Results

Filter Number	Total Challenge (cfu)	Total Collected (cfu)	% Efficiency
Background	-	1.48 x 10 <sup>3</sup>	-
F1	1.72 x 10 <sup>5</sup>	4.03 x 10 <sup>3</sup>	97.6570
Background	-	87	-

\*cfu - colony forming units

### Test Conditions

Date	10 <sup>th</sup> January 2017	Challenge Micro-organisms	MS-2 Coliphage NCIMB 10108	
Operators	Anna Moy	Suspension Fluid	Sterile Distilled Water	
Apparatus	Small Rig	Concentration	1.16 x 10 <sup>5</sup> pfu/ml	
Spray	3 Jet Collision			
Relative Humidity (RH):		Ambient	Temperature: 22 ± 3°C	
Samplers	All glass Impingers	Sampling Time	1 min at 750 Litres/min	
Collecting Fluid	PBMA		Volume	Various

F1 = Typ I PS – Pulmosafe® II Ref: 1031, Lot: 355/16, Exp: 12/2019

Filters Tested:

### Results

Filter Number	Total Challenge (pfu)	Total Collected (pfu)	% Efficiency
Background	-	0	-
F1	3.35 x 10 <sup>3</sup>	1.01 x 10 <sup>2</sup>	96.9851
Background	-	0	-

\*pfu - plaque forming units

**Basic Information**

<b>Operator:</b> M.Pfeffinger	<b>Start date:</b> 21.04.2020	<b>End date:</b> 06.05.2020	<b>Order No.:</b> K-10366
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Customer information		Test conditions	
Company	Lemon Medical GmbH	Humidity:	10 %
Address	Dr.-Georg-Schäfer-Str. 14	Air pressure	1010 mbar
	97762 Hammelburg	Air temperature	25 °C
	Deutschland		
Contact	Michaela Albert		
	m.albert@lemonmedical.com		

**Used measurement devices**

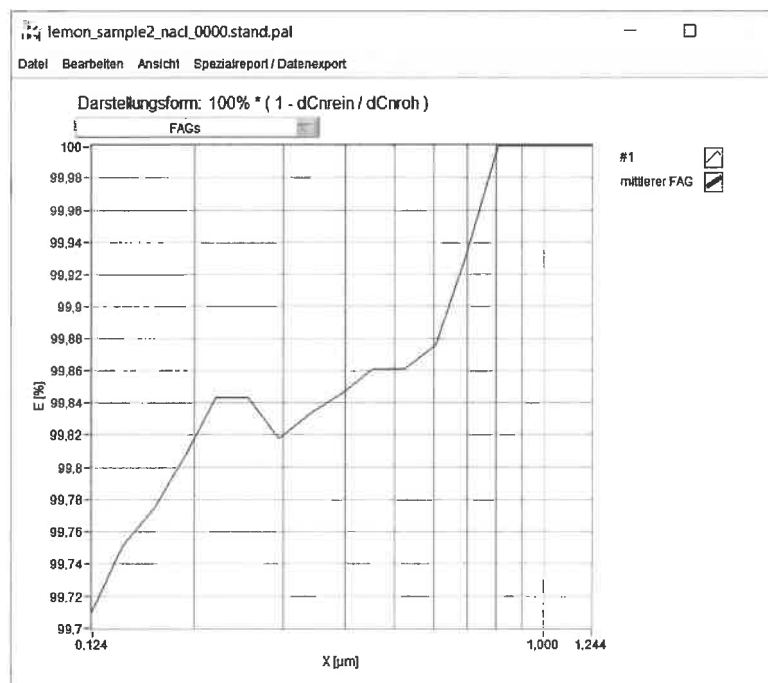
Type	Model	Serial number	Additional information
Filter Media Test Rig	PMFT	0145	
Aerosol Spectrometer	Welas 1000	8769	
Aerosol Sensor	Welas 1200	-	range 0.12-3 µm
Aerosol Generator	PLG 1000	5872	NaCl

Type	Model	Serial number	Additional information
Mask Check System	Mas-Q-Check	12097	
Norm Head	European Size M	12097	

**Results PMFT measurement**

ID number:	Lemon_sample2_NaCl_0000	Customer designation:	Sample 2 (NaCl)
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Parameter			Notes
Efficiency by mass	Cm [%]	<b>99.89</b>	
Efficiency by number	Cn [%]	<b>99.78</b>	
Efficiency by number at 0.12 µm Corona protection class	Cn [%]	<b>99.89</b>	
Efficiency by number at 1 µm	Cn [%]	<b>100.00</b>	
Differential pressure	dp [Pa]	<b>156.81</b>	


**Results Mas-Q-Check measurement**

ID number:		Customer designation:	
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Parameter			Notes
Retention	Cn [%]		



Karlsruhe 06.05.2020,