

TECHNICAL SERVICE REPORT NO. 25519

PHARMAID (COSMOCHEM CHEMICALS)

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May 2018

**Client:**

PHARMAID  
(COSMOCHEM CHEMICALS)

**Test Laboratory:**

Technical Service Laboratory  
Thor Specialties  
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## **SAMPLES**

- 1) Hair Mask For Dry 150ml (Aloe Treasures) MICROCARE® CB 0,15%
- 2) Hair Mask For Dry 150ml (Aloe Treasures)- BK
- 3) Face Spray Sunscreen UV 125ml (Aloe Treasures) MICROCARE® PEHG 1,00%
- 4) Face Spray Sunscreen UV 125ml (Aloe Treasures)- BK
- 5) Hydration Face Spray Cucumber 150ml (Aloe Treasures) MICROCARE® PEHG 1,00%
- 6) Hydration Face Spray Cucumber 150ml (Aloe Treasures)- BK
- 7) Conditioner Spray Extra UV 150ml (Athena´s Treasures) MICROCARE® PEHG 1,00%
- 8) Conditioner Spray Extra UV 150ml (Athena´s Treasures)- BK
- 9) Tea Tree After Sun Cooling Gel 200ml (Dream Tan) MICROCARE® PEHG 1,00%
- 10) Tea Tree After Sun Cooling Gel 200ml (Dream Tan)- BK
- 11) Hand Cream Calendula 200ml (Athena´s Treasures) MICROCARE® PEHG 1,10%
- 12) Hand Cream Calendula 200ml (Athena´s Treasures)- BK
- 13) Body Lotion After Sun 250ml (Athena´s Treasures) MICROCARE® PEHG 1,10%
- 14) Body Lotion After Sun 250ml (Athena´s Treasures)- BK
- 15) Hand Cream Silk Sunscreen UV 100ml (Athena´s Treasures) MICROCARE® PEHG 1,10%
- 16) Hand Cream Silk Sunscreen UV 100ml (Athena´s Treasures)- BK
- 17) Hand Cream Donkey Milk 75ml (Athena´s Treasures) MICROCARE® PEHG 1,10%
- 18) Hand Cream Donkey Milk 75ml (Athena´s Treasures)- BK
- 19) Lotion Coconut Spf 25 Sunscreen UV 200ml (Dream Tan) MICROCARE® DB 1,10%
- 20) Lotion Coconut Spf 25 Sunscreen UV 200ml (Dream Tan)- BK
- 21) For Burns Cream 100ml (Aloe Treasures) MICROCARE® PEHG 1,10%
- 22) For Burns Cream 100ml (Aloe Treasures)- BK
- 23) Panthenol Extra 60ml (Pharmaid) MICROCARE® PEHG 1,10%
- 24) Panthenol Extra 60ml (Pharmaid)- BK
- 25) Body Butter Avocado 200ml (Aloe Treasures) MICROCARE® PEHG 1,10%
- 26) Body Butter Avocado 200ml (Aloe Treasures)- BK

## **EXAMINATIONS**

Measurement of pH: **Thor Test Method No 725**

Screening for Microbial Contamination: **Thor test Method Thor No 201**

Personal Care Preservative Efficacy Test (Streak plate method) - **Thor Test Method No 206**

## PROCEDURE

### Procedure TM 725 - Measurement of pH

A pH electrode is calibrated with three standard buffer solutions. After the calibration, the pH value of the sample can be determined.

### Procedure TM 201 - Screening of Microbial Contamination

After homogenization, a sterilized loop is used to pick up a small portion of the sample and spread it in petri dishes containing the appropriate cultural media (Nutrient Agar, OGYE Agar, Saboraud Dextrose Agar, SIM medium) to allow the growth of, respectively, bacteria, yeasts, moulds and sulphate reducing bacteria. In this way, the microorganism growth can be separately assessed. The petri dishes and SIM tubes are incubated under the appropriate conditions. For bacteria detection, Nutrient Agar plate, 24-48h at 30 +/- 2°C. For yeasts and moulds detection, OGYE Agar and SDA plates, 48-72h at 26 +/- 2°C. For sulphate reducing bacteria detection, SIM tubes, 48-72h at 30 +/- 2°C. After incubation, the microbial growth is visually evaluated. Appropriate scales are used to determine the extent of the growth in the sample.

### Procedure TM 206 – Personal Care Preservative Efficacy Test (Streak plate method)

The test method comprises the inoculation of a product with blended microbial cultures of known strains (pools) and enumerate the remaining microorganisms at set time points, over a period of 28 days incubation at constant temperature, by streaking onto selective agar plates (TSA or Nutrient agar, for bacteria, and Malt agar for yeasts and moulds). Density growth on the streak is determined by using a subjective numerical rating scale.

It is considered a hard test, created to evaluate the efficacy and the resistance of the preservation system. Depending on the needs in satisfying local Norms (Pharmacopeia or any microbiological test), it is possible, for certain formulation, to pass a challenge test only focused on the speed of a preservation system to reduce the microbial content.

A set of acceptance criteria based on reduction in viability are used to interpret the results.

It is recommended to test three groups of microorganisms:

#### Pool 1 – Bacteria

*Pseudomonas aeruginosa* ATCC 9027  
*Pseudomonas putida* ATCC 31483  
*Burkholderia cepacia* ATCC 25416  
*Klebsiella pneumoniae* ATCC 10031  
*Enterobacter gergoviae* ATCC 33028  
*Escherichia coli* ATCC 8739  
*Staphylococcus aureus* ATCC 6538  
*Staphylococcus epidermidis* ATCC 12228

#### Pool 2 – Yeast

*Candida albicans* ATCC 10231  
*Candida parapsilosis* ATCC 22019

#### Pool 3 - Mould

*Aspergillus brasiliensis* (niger) ATCC 16404  
*Talaromyces pinophilus* (*P. pinophilum*)  
ATCC 36839

The microorganism suspensions are prepared in Tryptone and Physiological solution, for bacteria and yeast, and in Tryptone with Polysorbate 80 for moulds.

**RESULTS**

**Measurement of pH (TM 725)**

<b>SAMPLE</b>	<b>pH</b>
1) Hair Mask For Dry 150ml (Aloe Treasures) MICROCARE® CB 0,15%	4.12
2) Hair Mask For Dry 150ml (Aloe Treasures)- BK	4.22
3) Face Spray Sunscreen UV 125ml (Aloe Treasures) MICROCARE® PEHG 1,00%	5.47
4) Face Spray Sunscreen UV 125ml (Aloe Treasures)- BK	5.42
5) Hydration Face Spray Cucumber 150ml (Aloe Treasures) MICROCARE® PEHG 1.00%	5.59
6) Hydration Face Spray Cucumber 150ml (Aloe Treasures)- BK	5.61
7) Conditioner Spray Extra UV 150ml (Athena´s Treasures) MICROCARE® PEHG 1.00%	5.62
8) Conditioner Spray Extra UV 150ml (Athena´s Treasures)- BK	5.91
9) Tea Tree After Sun Cooling Gel 200ml (Dream Tan) MICROCARE® PEHG 1,00%	5.88
10) Tea Tree After Sun Cooling Gel 200ml (Dream Tan)- BK	6.21
11) Hand Cream Calendula 200ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	6.14
12) Hand Cream Calendula 200ml (Athena´s Treasures)- BK	6.03
13) Body Lotion After Sun 250ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	6.01
14) Body Lotion After Sun 250ml (Athena´s Treasures)- BK	5.69
15) Hand Cream Silk Sunscreen UV 100ml (Athena´s Treasures) MICROCARE® PEHG 1.10%	5.67
16) Hand Cream Silk Sunscreen UV 100ml (Athena´s Treasures)- BK	6.32
17) Hand Cream Donkey Milk 75ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	6.30
18) Hand Cream Donkey Milk 75ml (Athena´s Treasures)- BK	5.70
19) Lotion Coconut Spf 25 Sunscreen UV 200ml (Dream Tan) MICROCARE® DB 1.10%	5.62
20) Lotion Coconut Spf 25 Sunscreen UV 200ml (Dream Tan)- BK	6.32
21) For Burns Cream 100ml (Aloe Treasures) MICROCARE® PEHG 1,10%	6.37
22) For Burns Cream 100ml (Aloe Treasures)- BK	5.80
23) Panthenol Extra 60ml (Pharmaid) MICROCARE® PEHG 1,10%	5.78
24) Panthenol Extra 60ml (Pharmaid)- BK	5.88
25) Body Butter Avocado 200ml (Aloe Treasures) MICROCARE® PEHG 1,10%	5.98
26) Body Butter Avocado 200ml (Aloe Treasures)- BK	5.92

**Screening of Microbial Contamination (TM 201)**

SAMPLE	Growth Rating			
	BACTERIA	MOULDS	YEASTS	SULPHATE REDUCING BACTERIA
	30°C	25°C	25°C	30°C
1) Hair Mask For Dry 150ml (Aloe Treasures) MICROCARE® CB 0,15%	0	0	0	-
2) Hair Mask For Dry 150ml (Aloe Treasures)- BK	0	XXXX	0	-
3) Face Spray Sunscreen UV 125ml (Aloe Treasures) MICROCARE® PEHG 1,00%	0	0	0	-
4) Face Spray Sunscreen UV 125ml (Aloe Treasures)- BK	0	0	0	-
5) Hydration Face Spray Cucumber 150ml (Aloe Treasures) MICROCARE® PEHG 1,00%	0	0	0	-
6) Hydration Face Spray Cucumber 150ml (Aloe Treasures)- BK	0	0	0	-
7) Conditioner Spray Extra UV 150ml (Athena´s Treasures) MICROCARE® PEHG 1,00%	0	0	0	-
8) Conditioner Spray Extra UV 150ml (Athena´s Treasures)- BK	0	0	0	-
9) Tea Tree After Sun Cooling Gel 200ml (Dream Tan) MICROCARE® PEHG 1,00%	0	0	0	-
10) Tea Tree After Sun Cooling Gel 200ml (Dream Tan)- BK	0	0	0	-
11) Hand Cream Calendula 200ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	0	0	0	-
12) Hand Cream Calendula 200ml (Athena´s Treasures)- BK	0	0	0	-
13) Body Lotion After Sun 250ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	0	0	0	-
14) Body Lotion After Sun 250ml (Athena´s Treasures)- BK	0	0	0	-
15) Hand Cream Silk Sunscreen UV 100ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	0	0	0	-
16) Hand Cream Silk Sunscreen UV 100ml (Athena´s Treasures)- BK	0	0	0	-
17) Hand Cream Donkey Milk 75ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	0	0	0	-
18) Hand Cream Donkey Milk 75ml (Athena´s Treasures)- BK	0	0	0	-

SAMPLE	Growth Rating			
	BACTERIA	MOULDS	YEASTS	SULPHATE REDUCING BACTERIA
	30°C	25°C	25°C	30°C
19) Lotion Coconut Spf 25 Sunscreen UV 200ml (Dream Tan) MICROCARE® DB 1,10%	0	0	0	-
20) Lotion Coconut Spf 25 Sunscreen UV 200ml (Dream Tan)- BK	0	0	0	-
21) For Burns Cream 100ml (Aloe Treasures) MICROCARE® PEHG 1,10%	0	0	0	-
22) For Burns Cream 100ml (Aloe Treasures)- BK	0	XXXX	0	-
23) Panthenol Extra 60ml (Pharmaid) MICROCARE® PEHG 1,10%	0	0	0	-
24) Panthenol Extra 60ml (Pharmaid)- BK	0	0	0	-
25) Body Butter Avocado 200ml (Aloe Treasures) MICROCARE® PEHG 1,10%	0	0	0	-
26) Body Butter Avocado 200ml (Aloe Treasures)- BK	0	XXXX	0	-

Growth assessment scale :

**Surface of growth on agar (bacteria and yeast)**

- 0 No growth
- 1 Minimal growth, 1 to 10 visible colonies
- 2 Slight growth, up to 100 colonies
- 3 Significant growth, up to 300 to 400 colonies
- 4 Strong growth, separated colonies remain visible > 400 colonies
- 5 Very strong growth, too many colonies to count but not covering the entire surface
- 6 Total growth, the colonies are virtually inseparable and cover the entire surface

**Surface of growth on agar (moulds)**

- 0 No growth
- X Slight growth
- XX Significant growth
- XXX Strong growth
- XXXX Very strong growth



**Personal Care Preservative Efficacy Test (Streak plate method) (TM 206)**

Results for the bacteria

Bacterial Challenge				
Inoculum (CFU/ml)	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
Viabale Count	4.4 x 10 <sup>8</sup>	3.9 x 10 <sup>8</sup>	5.2 x 10 <sup>8</sup>	2.9 x 10 <sup>8</sup>

Test Sample	Evaluation of Bacteria growth:								
	1 <sup>st</sup> inoculation		2 <sup>nd</sup> inoculation		3 <sup>rd</sup> inoculation		4 <sup>th</sup> inoculation		
	6°d	12°d	6°d	12°d	6°d	12°d	6°d	12°d	18°d
1) Hair Mask For Dry 150ml (Aloe Treasures) MICROCARE® CB 0,15%	0		0		0		0		
2) Hair Mask For Dry 150ml (Aloe Treasures)- BK	<i>Sample received contaminated (Not tested)</i>								
3) Face Spray Sunscreen UV 125ml (Aloe Treasures) MICROCARE® PEHG 1,00%	0		0		0		0		
4) Face Spray Sunscreen UV 125ml (Aloe Treasures)- BK	5	6	Contaminated						
5) Hydration Face Spray Cucumber 150ml (Aloe Treasures) MICROCAR® PEHG 1,00%	0		0		0		0		
6) Hydration Face Spray Cucumber 150ml (Aloe Treasures)- BK	5	6	Contaminated						
7) Conditioner Spray Extra UV 150ml (Athena´s Treasures) MICROCAR® PEHG 1,00%	0		0		0		0		
8) Conditioner Spray Extra UV 150ml (Athena´s Treasures)- BK	0		0		0		0		
9) Tea Tree After Sun Cooling Gel 200ml (Dream Tan) MICROCAR® PEHG 1,00%	0		0		0		0		
10) Tea Tree After Sun Cooling Gel 200ml (Dream Tan)- BK	0		0		0		0		
11) Hand Cream Calendula 200ml (Athena´s Treasures) MICROCAR® PEHG 1,10%	0		0		0		0		
12) Hand Cream Calendula 200ml (Athena´s Treasures)- BK	5	4	Contaminated						



Test Sample	Evaluation of Bacteria growth:								
	1 <sup>st</sup> inoculation		2 <sup>nd</sup> inoculation		3 <sup>rd</sup> inoculation		4 <sup>th</sup> inoculation		
	6°d	12°d	6°d	12°d	6°d	12°d	6°d	12°d	18°d
13) Body Lotion After Sun 250ml (Athena's Treasures) MICROCARE® PEHG 1,10%	0		0		0		0		
14) Body Lotion After Sun 250ml (Athena's Treasures)- BK	5	4	Contaminated						
15) Hand Cream Silk Sunscreen UV 100ml (Athena's Treasures) MICROCARE® PEHG 1,10%	0		2		2		5	5	
16) Hand Cream Silk Sunscreen UV 100ml (Athena's Treasures)- BK	0		4	6	Contaminated				
17) Hand Cream Donkey Milk 75ml (Athena's Treasures) MICROCARE® PEHG 1,10%	0		0		0		0		
18) Hand Cream Donkey Milk 75ml (Athena's Treasures)- BK	3		6	6	Contaminated				
19) Lotion Coconut Spf 25 Sunscreen UV 200ml (Dream Tan) MICROCARE® DB 1,10%	0		0		0		0		
20) Lotion Coconut Spf 25 Sunscreen UV 200ml (Dream Tan)- BK	5	5	Contaminated						
21) For Burns Cream 100ml (Aloe Treasures) MICROCARE® PEHG 1,10%	0		0		0		0		
22) For Burns Cream 100ml (Aloe Treasures)- BK	Sample received contaminated (Not tested)								
23) Panthenol Extra 60ml (Pharmaid) MICROCARE® PEHG 1,10%	0		0		0		0		
24) Panthenol Extra 60ml (Pharmaid)- BK	2		4	6	Contaminated				
25) Body Butter Avocado 200ml (Aloe Treasures) MICROCARE® PEHG 1,10%	0		0		0		0		
26) Body Butter Avocado 200ml (Aloe Treasures)- BK	Sample received contaminated (Not tested)								

 Not tested





Results for the yeasts

Yeasts Challenge				
Inoculum (CFU/ml)	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
Viable Count	2.9 x 10 <sup>7</sup>	2.6 x 10 <sup>7</sup>	2.9 x 10 <sup>7</sup>	1.7 x 10 <sup>7</sup>

Test Sample	Evaluation of Yeasts growth:								
	1 <sup>st</sup> inoculation		2 <sup>nd</sup> inoculation		3 <sup>rd</sup> inoculation		4 <sup>th</sup> inoculation		
	6°d	12°d	6°d	12°d	6°d	12°d	6°d	12°d	18°d
1) Hair Mask For Dry 150ml (Aloe Treasures) MICROCARE® CB 0,15%	0		0		0		0		
2) Hair Mask For Dry 150ml (Aloe Treasures)- BK	<i>Sample received contaminated (Not tested)</i>								
3) Face Spray Sunscreen UV 125ml (Aloe Treasures) MICROCARE® PEHG 1,00%	0		0		0		0		
4) Face Spray Sunscreen UV 125ml (Aloe Treasures)- BK	5	5	<b>Contaminated</b>						
5) Hydration Face Spray Cucumber 150ml (Aloe Treasures) MICROCARE® PEHG 1,00%	0		0		0		0		
6) Hydration Face Spray Cucumber 150ml (Aloe Treasures)- BK	5	5	<b>Contaminated</b>						
7) Conditioner Spray Extra UV 150ml (Athena´s Treasures) MICROCARE® PEHG 1,00%	0		0		0		0		
8) Conditioner Spray Extra UV 150ml (Athena´s Treasures)- BK	0		0		0		0		
9) Tea Tree After Sun Cooling Gel 200ml (Dream Tan) MICROCARE® PEHG 1,00%	0		0		0		0		
10) Tea Tree After Sun Cooling Gel 200ml (Dream Tan)- BK	4	4	<b>Contaminated</b>						
11) Hand Cream Calendula 200ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	0		0		0		0		
12) Hand Cream Calendula 200ml (Athena´s Treasures)- BK	2		6	6	<b>Contaminated</b>				



Test Sample	Evaluation of Yeasts growth:								
	1 <sup>st</sup> inoculation		2 <sup>nd</sup> inoculation		3 <sup>rd</sup> inoculation		4 <sup>th</sup> inoculation		
	6°d	12°d	6°d	12°d	6°d	12°d	6°d	12°d	18°d
13) Body Lotion After Sun 250ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	0		0		0		0		
14) Body Lotion After Sun 250ml (Athena´s Treasures)- BK	5	6	Contaminated						
15) Hand Cream Silk Sunscreen UV 100ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	0		0		0		0		
16) Hand Cream Silk Sunscreen UV 100ml (Athena´s Treasures)- BK	4	5	Contaminated						
17) Hand Cream Donkey Milk 75ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	0		0		0		0		
18) Hand Cream Donkey Milk 75ml (Athena´s Treasures)- BK	5	5	Contaminated						
19) Lotion Coconut Spf 25 Sunscreen UV 200ml (Dream Tan) MICROCARE® DB 1,10%	0		0		0		0		
20) Lotion Coconut Spf 25 Sunscreen UV 200ml (Dream Tan)- BK	5	6	Contaminated						
21) For Burns Cream 100ml (Aloe Treasures) MICROCARE® PEHG 1,10%	0		0		0		0		
22) For Burns Cream 100ml (Aloe Treasures)- BK	Sample received contaminated (Not tested)								
23) Panthenol Extra 60ml (Pharmaid) MICROCARE® PEHG 1,10%	0		0		0		0		
24) Panthenol Extra 60ml (Pharmaid)- BK	4	4	Contaminated						
25) Body Butter Avocado 200ml (Aloe Treasures) MICROCARE® PEHG 1,10%	0		0		3		2	2	
26) Body Butter Avocado 200ml (Aloe Treasures)- BK	Sample received contaminated (Not tested)								

 Not tested

**TECHNICAL SERVICE REPORT N° 25519**  
**PHARMAID (COSMOCHEM CHEMICALS)**  
 Results for the mould



<b>Fungi Challenge</b>	
<i>Viable Count</i>	$4.6 \times 10^7$

<b>Sample tested</b>	<b>After 14 days:</b>		<b>After 28 days:</b>	
	<b>Fungal surface development</b>	<b>Control of viable spores (malt development)</b>	<b>Fungal surface development</b>	<b>Control of viable spores (malt development)</b>
1) Hair Mask For Dry 150ml (Aloe Treasures) MICROCARE® CB 0,15%	0	0	0	0
2) Hair Mask For Dry 150ml (Aloe Treasures)- BK	<i>Sample received contaminated (Not tested)</i>			
3) Face Spray Sunscreen UV 125ml (Aloe Treasures) MICROCARE® PEHG 1,00%	0	0	0	0
4) Face Spray Sunscreen UV 125ml (Aloe Treasures)- BK	0	XXX	0	XXX
5) Hydration Face Spray Cucumber 150ml (Aloe Treasures) MICROCARE® PEHG 1,00%	0	0	0	0
6) Hydration Face Spray Cucumber 150ml (Aloe Treasures)- BK	0	X	0	X
7) Conditioner Spray Extra UV 150ml (Athena´s Treasures) MICROCARE® PEHG 1,00%	0	0	0	0
8) Conditioner Spray Extra UV 150ml (Athena´s Treasures)- BK	0	0	0	X
9) Tea Tree After Sun Cooling Gel 200ml (Dream Tan) MICROCARE® PEHG 1,00%	0	0	0	0
10) Tea Tree After Sun Cooling Gel 200ml (Dream Tan)- BK	0	XXX	0	XXX
11) Hand Cream Calendula 200ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	0	0	0	0
12) Hand Cream Calendula 200ml (Athena´s Treasures)- BK	0	XXX	0	XXX



Sample tested	After 14 days:		After 28 days:	
	Fungal surface development	Control of viable spores (malt development)	Fungal surface development	Control of viable spores (malt development)
13) Body Lotion After Sun 250ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	0	0	0	0
14) Body Lotion After Sun 250ml (Athena´s Treasures)- BK	0	XXX	0	XXX
15) Hand Cream Silk Sunscreen UV 100ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	0	X	0	X
16) Hand Cream Silk Sunscreen UV 100ml (Athena´s Treasures)- BK	0	XXX	0	XXX
17) Hand Cream Donkey Milk 75ml (Athena´s Treasures) MICROCARE® PEHG 1,10%	0	0	0	0
18) Hand Cream Donkey Milk 75ml (Athena´s Treasures)- BK	0	X XXX	0	X XXX
19) Lotion Coconut Spf 25 Sunscreen UV 200ml (Dream Tan) MICROCARE® DB 1,10%	0	0	0	0
20) Lotion Coconut Spf 25 Sunscreen UV 200ml (Dream Tan)- BK	0	XXXX	0	XXXX
21) For Burns Cream 100ml (Aloe Treasures) MICROCARE® PEHG 1,10%	0	0	0	0
22) For Burns Cream 100ml (Aloe Treasures)- BK	<i>Sample received contaminated (Not tested)</i>			
23) Panthenol Extra 60ml (Pharmaid) MICROCARE® PEHG 1,10%	0	0	0	0
24) Panthenol Extra 60ml (Pharmaid)- BK	0	X	0	X
25) Body Butter Avocado 200ml (Aloe Treasures) MICROCARE® PEHG 1,10%	0	0	0	0
26) Body Butter Avocado 200ml (Aloe Treasures)- BK	<i>Sample received contaminated (Not tested)</i>			



Growth assessment scale :

**BACTERIA / YEASTS**

**Surface of growth on agar**

0	No growth
1	Minimal growth, 1 to 10 visible colonies
2	Slight growth, up to 100 colonies
3	Significant growth, up to 300 to 400 colonies
4	Strong growth, separated colonies remain visible > 400 colonies
5	Very strong growth, too many colonies to count but not covering the entire surface
6	Total growth, the colonies are virtually inseparable and cover the entire surface


**MOULDS**

<b>Development on the Surface</b>	<b>Fungal Development</b>
0 no growth	0 No growth
+ growth	X Slight growth
	XX Significant growth
	XXX Strong growth
	XXXX Very strong growth

## INTERPRETATION OF RESULTS

To validate a preservative system, it must be capable of withstanding a minimum of 1 successive inoculations and reduce levels of microorganisms to a maximum value of 3 on the rating scale of bacteria and yeasts and must not show signs of fungal development on the surface nor remaining surviving spores on the streaked plates superior to 2X on the rating scale after 28 days of incubation. A sample is considered contaminated if the content of microorganisms is  $\geq 4$  on the rating scale after 14 days incubation for bacteria and yeasts.

In any case, the acceptance criteria are to be discussed with the customer depending on the security level they required.



Technical Director  
*Katia Padoan*



Laboratory Manager  
*Gerardo Radogna*

22.05.2019

Please note that unless otherwise stated, the conclusions and any recommendations, either made or implied, are based on information drawn from examination of the samples identified in this report only. Since these may be influenced by, for example, infection level variations in raw materials, stored component solutions and manufacturing equipment, it is recommended that some appropriate monitoring of microbiological properties be carried out. Use biocides safely. Always read the label and product information before use.