

# ADE TO SUBSTITUTE

BANISH THE MICROPLASTICS



## BANISH THE MICROPLASTICS LIKE-FOR-LIKE REPLACEMENT WITH RONAFLAIR® FUNCTIONAL FILLERS

Potentially solid polymers used in cosmetics (microplastics such as Nylon-12 and PMMA) need to be eradicated from our wastewater, the natural environment, and the food chain. Consumers today want cosmetics brands to take responsibility and start using more sustainable ingredients. And society is increasingly pointing its collective finger at industry to take the lead. In response, companies need alternatives – plus data and research that show brands can deliver on their promises.

### LITTLE INGREDIENTS, BIG IMPACT

In March 2019, the European Chemical Agency proposed controls on any kinds of microplastics that are added to leave-on and rinse-off cosmetics products. The term microplastics refers to small, solid, polymercontaining particles measuring less than 5mm or fibers of less than 15mm. They are highly resistant to environmental biodegradation, fragmentate into "nanoplastics" and, unlike some ingredients used in rinse-off cosmetics, they do not dissolve in water. When we wash off leave-on skin care products, they go straight down the drain with our wastewater. Although wastewater treatment plants are able to filter out 90% of microplastics, once in the environment they join the dangerous plastic soup swirling around in our oceans. They have even been found in sea ice and polar sediments. Microplastics also accumulate inside animals, including fish and shellfish, and are thus entering the human foodchain.

### HOW TO MIRROR MICROPLASTICS?

EMD offers an effective and scientifically proven alternative to microplastics – like-for-like solutions that allow you to replace Nylon-12 and PPMA.

RonaFlair<sup>®</sup> Functional Fillers are sustainable mineral ingredients that – mixed in the right proportions – deliver a variety of cosmetic ingredients properties, from soft focus effects to wrinkle reduction, superior skin feel, and transparency. Curious to know more?

Microplastics, plastic soup – whatever term we use for them, microplastics re-enter the food chain when humans harvest products from farms and nature. As a result, they are infiltrating the human body.

### WHY EMD COSMETICS?

The ingredients provided by EMD not only allow you to formulate outstanding products, they also grant you access to a treasure trove of resources offered by the world's oldest chemical and pharmaceutical company. EMD empowers its clients to benefit from unparalleled global expertise and resources, from international regulatory and legal support to a wide-reaching distribution network and consulting services – in every corner of the globe.

### THE # FACTOR

Pressure on the global environment is intensifying. All around us, we are witnessing the tangible and sometimes tragic impact of human civilization on nature. In reaction, consumers everywhere are hashtagging and demonstrating about their environmental concerns, openly demanding that brands take more responsibility for every product, ingredient, service, and process. Consumers want the eradication of harmful ingredients along the entire value chain. Fail to react now to the calls for zero plastics, and the backlash in social media and news channels could be devastating for your business. And time is running out.

### ZOOMING IN ON ZERO-TOLERANCE

Millions of consumers are now looking for environmentally friendly alternatives to microplastics. So the challenge to cosmetic companies and other firms involved in the supply chain is to quickly develop alternatives and start using ingredients that contain zero microplastics. But the way forward does not have to be a single-ingredient solution. When the environment is at stake, there's rarely a silver bullet that will allow us to directly substitute problematic ingredients likefor-like.

EMD is already in a position to provide you with a range of alternative raw materials to replace ingredients currently comprising microplastics. The microplastics that can be challenging to replace in cosmetic products are essentially fine particles. Our mixtures of RonaFlair® Functional Fillers come extremely close to the benefits of these fine particles, thus allowing producers to adjust the viscosity, appearance, texture, and stability of products while at the same time offering consumers the performance they already enjoy today. And of course we also have the data, research, and scientific evidence to substantiate your important product claims.

### WHAT ARE FUNCTIONAL FILLERS?

Functional fillers play a crucial role in the feel, look, and quality of cosmetics. For example, beauty products containing effective functional fillers are easier to apply, wear well, and help mask imperfections or skin discolorations.

The success formula of functional fillers revolves around platelets and spheres that influence the performance of the final products. For example, they allow cosmetics to

- > Glide onto the skin and feel silky
- > Deliver rolling, powdery, or velvety textures
- > Offer light shimmer and radiance
- Minimize imperfections like fine lines and wrinkles
- > Add soft focus effects
- > Enhance smoothness and extend wear

Interested in finding out more? Please visit emd4cosmetics.com.

### MIXTURES THAT MIMIC MICROPLASTICS

Because single ingredients may not always be able to replicate the proven performance of Nylon-12 and PPMA, EMD has investigated a variety of alternatives to be used as texturizers and enhancers of visual properties. These teams of ingredients were thoroughly tested in our lab.

**RonaFlair**® **Functional Fillers** are an important answer to growing consumer demands for zero microplastics in cosmetics formulations

Mixed in the right proportions, RonaFlair® Functional Fillers provide an immediate and effective alternative to microplastics, offering important cosmetic properties such as:

- Soft focus effect
- Wrinkle reduction
- Skin feel
- > Transparency or coverage

Nylon-12 versus	RonaFlair <sup>®</sup> 2   1 Satin + LDP White
	RonaFlair <sup>®</sup> 3   1 Soft Sphere + LDP White
PMMA versus	RonaFlair <sup>®</sup> 2   1 Flawless + Satin
	RonaFlair® 4   1 Satin + LDP White
	RonaFlair <sup>®</sup> 2   1 Soft Sphere + LDP White

### MEASURING PERFORMANCE VERSUS MICROPLASTICS

EMD conducted a variety of lab tests, partially with volunteers, to compare RonaFlair® Functional Fillers to Nylon-12 and PMMA. The important cosmetic properties that were examined included

both optical performance and sensory attributes. The results, with a 95% confidence level, were significant.

#### SOFT FOCUS EFFECT



#### WRINKLE REDUCTION



#### SENSORY COMPARISONS: RESULTS FOR RONAFLAIR<sup>®</sup> VS. NYLON 12

	Perceived as good	Perceived as less good	
MATTIFYING	RonaFlair <sup>®</sup> 2   1 Satin + LDP White	Nylon-12	
	RonaFlair® 2   1 Flawless + Satin		
	RonaFlair <sup>®</sup> 3   1 Soft Sphere + LDP White		
		RonaFlair® 3   1 Soft Sphere + LDP White	
COVERAGE	RonaFlair® 2   1 Flawless + Satin	Nylon-12	
		RonaFlair <sup>®</sup> 2   1 Satin + LDP White	
DRYNESS / POWDERY	No perceived difference		
SOFTNESS	RonaFlair® 3   1 Soft Sphere + LDP White	RonaFlair® 2 1 Flawless + Satin	
	Nylon-12	RonaFlair <sup>®</sup> 2   1 Satin + LDP White	
SPREADABILITY		RonaFlair <sup>®</sup> 2   1 Satin + LDP White	
	RonaFlair® 2   1 Flawless + Satin	Nylon-12	
		RonaFlair <sup>®</sup> 3   1 Soft Sphere + LDP White	

#### SENSORY COMPARISONS: RESULTS FOR RONAFLAIR® VS. PMMA

	Perceived as good		Perceived as less good
MATTIFYING		No perceived d	lifference
COVERAGE	No perceived difference		
DRYNESS / POWDERY	No perceived difference		
SOFTNESS R	RonaFlair <sup>®</sup> 2   1 Soft Sphere + LDP White		RonaFlair® 4 1 Satin + LDP White
			РММА
RonaFlair® 2 1 Soft Sphere + LDP White			DMMA
SPREADABILITY	RonaFlair <sup>®</sup> 4   1 Satin + LDP White		РММА



Similar or better softness than Nylon-12 and PMMA Similar to better coverage than Nylon-12 and PMMA



### MIXING & MATCHING

Mixed in the right proportions, RonaFlair® Functional Fillers allow you to completely remove Nylon-12 and PPMA from formulations without significant detrimental impact on the performance of your products.

#### **RECOMMENDED NYLON-12** SUBSTITUTES FOR ACHIEVING:

More wrinkle reduction	RonaFlair® 2   1 Satin + LDP White
More mattifying	RonaFlair <sup>®</sup> 2   1 Satin + LDP White
	RonaFlair® 2   1 Flawless + Satin
	RonaFlair® 3   1 Soft Sphere + LDP White
Higher coverage	RonaFlair® 2   1 Flawless + Satin
Same transparency	RonaFlair <sup>®</sup> 2   1 Satin + LDP White
	RonaFlair® 3   1 Soft Sphere + LDP White
Equivalent softness	RonaFlair® 3   1 Soft Sphere + LDP White
Improved spreadability	RonaFlair® 2   1 Flawless + Satin

#### **RECOMMENDED PMMA** SUBSTITUTES FOR ACHIEVING:

More wrinkle reduction	RonaFlair® 4   1 Satin + LDP White
Come mottifying	RonaFlair <sup>®</sup> 2   1 Soft Sphere + LDP White
Same mattirying	RonaFlair <sup>®</sup> 4   1 Satin + LDP White
Same coverage	RonaFlair® 2   1 Soft Sphere + LDP White
	RonaFlair $^{\otimes}$ 4   1 Satin + LDP White
Improved softness	RonaFlair <sup>®</sup> 2   1 Soft Sphere + LDP White
Improved spreadability	RonaFlair <sup>®</sup> 2   1 Soft Sphere + LDP White
	RonaFlair® 4   1 Satin + LDP White

### HOW TO ORDER SAMPLES

If you'd like to test RonaFlair® Functional Fillers in your own lab, complete this order form on the "Banish the Microplastics" campaign page and email it to us. We'll send you the requested products right away.



#### **RonaFlair® Satin Product No. 1.17268**

INCI:	Illite
Particle size:	<25.0 µm (80 % in range)
Powder color:	off-white powder
Coverage:	low
Luster:	low
Oil absorption:	79 g / 100 g
Sensory	soft

#### **RonaFlair® Soft Sphere** Product No. 1.17756

INCI:	Synthetic Fluorphlogopite (and) Silica
Particle size:	5.0 – 35.0 µm (80 % in range)
Powder color:	pure white powder
Coverage:	low
Luster:	medium
Oil absorption:	70 g / 100 g
Sensory profile:	silky / velvety smooth / gliding

#### **RonaFlair® LDP White** Product No. 1.17755

INCI:	Sodium Potassium Aluminum Silicate (and) CI 77891 (Tita- nium Dioxide) (and) Silica
Particle size:	2.0 - 20.0 µm (80 % in range)
Powder color:	white powder
Coverage:	low
Luster:	low
Oil absorption:	95 g / 100 g
Sensory	powdery / dry

#### **RonaFlair® Flawless Product No. 1.17789**

INCI:	Silica (and) CI 77891 (Titanium Dioxide) (and) CI 77491 (Iron Oxides)
Particle size:	1.0 - 25.0 µm (80 % in range)
Powder color:	peach-colored powder
Coverage:	low
Luster:	low
Oil absorption:	50 g / 100 g
Sensory profile:	powdery / dry rolling

Influence in product category		Recomme
Powder pressed and loose	improved pay-off, softer texture, anti-caking	vis <b>start</b> (no
Emulsion	Improved application, rich and soft skin feel, easy dispersion	1
Anhydrous fat-based e.g. lipstick, foundation stick	less oily texture	3
Gel (water-based)	homogeneous application, quicker drying after applica- tion, improved application	1

Influence in product category		Recomme
Powder pressed and loose	improved pay-off, improved skin adhesion	visi <b>start</b> (no
Emulsion	improvement of application and spreadability, good light stability	2
Anhydrous fat-based e.g. lipstick, foundation stick	smooth application	3
<b>Gel</b> (water-based)	may replace pearl pigments	3

Influence in product category		
Powder pressed and loose	light diffusion effect, mattifying	vis <b>stari</b> (no
Emulsion	light diffusion effect, mattifying, low luster	3
Anhydrous fat-based e.g. lipstick, foundation stick	light diffusion effect, mattify- ing, viscosity increase possible (due to high oil absorption)	5
Gel (water-based)	light diffusion effect, mattifying	4

	Influence in p	roduct category	Recomme
-	Powder pressed and loose	light diffusion effect, mattifying	visi <b>start</b> (no
	Emulsion	light diffusion effect, mattifying, even distribution	4
	Anhydrous fat-based e.g. lipstick, foundation stick	light diffusion effect, mattifying	5
	Gel (water-based)	light diffusion effect, mattifying	5

\* The statements made in "Banish the Microplastics" campaign materials comparing RonaFlair® Functional Fillers with cosmetics products Nylon 12 and polymethyl methacrylate (PMMA) are based on tests and analyses performed by EMD in compliance with industry standards.

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- 10 %

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ible effect ing at 5 % limitation)

- 10 %

- 20 %

- 10 %









#### ORDERING INFORMATION

NAME	INCI	PACKAGE SIZE	ITEM NO.
RonaFlair <sup>®</sup> Satin	Illite	15kg, 1kg, 30g (sample size)	117268
RonaFlair <sup>®</sup> Soft Sphere	Synthetic Flourphlogopite (and) Silica	15kg, 1kg, 30g (sample size)	117756
RonaFlair <sup>®</sup> LDP White	Sodium Potassium Aluminum Silicate (and) Titanium Dioxide (and) Silica	20kg, 1kg, 50g (sample size)	117755
RonaFlair <sup>®</sup> Flawless	Silica (and) Titanium Dioxide (and) Iron Oxides	20kg, 1kg, 50g (sample size)	117789

For more information, please contact: rona@emdgroup.com

### BANISH THE MICROPLASTICS LIKE-FOR-LIKE REPLACEMENT

WITH RONAFLAIR® FUNCTIONAL FILLERS

Products are warranted to meet the specifications set forth on their label/packaging and/or certificate of analysis at the time of shipment or for the expressly stated duration. EMD provides information and advice on application technologies and relevant regulations based upon its current knowledge and opinion. EMD MAKES NO REP-RESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FIT-NESS FOR A PARTICULAR USE REGARDING OUR PROD-UCTS, THEIR APPLICATION OR ANY INFORMATION PRO-VIDED IN CONNECTION THEREWITH. EMD shall not in any event be liable for incidental, consequential, indirect, exemplary or special damages of any kind resulting from any use or failure of the products. Customer is responsible for and must independently determine the suitability of EMD's products for its products, intended use and processes. The foregoing information and suggestions are also provided without warranty of non-infringement as to intellectual property rights of third parties and shall not be construed as any inducement to infringe the rights of third parties. Customer shall be responsible for obtaining any applicable third party intellectual property licenses. All sales are subject to EMD's complete Terms and Conditions of Sale. Prices are subject to change without notice. EMD reserves the right to discontinue products without prior notice.

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Surface Solutions

**EMD Performance Materials Corp.** 

1200 Intrepid Avenue, Suite 300

Philadelphia, PA 19112, USA

A business of Merck KGaA

Darmstadt, Germany

**Performance Materials** 

Surface Solutions

Frankfurter Str. 250

64293 Darmstadt,

Merck KGaA

#### Merck Ltd.

Performance Materials Surface Solutions Cosmetics Arco Tower 5F 1-8-1 Shimomeguro, Meguro-ku Tokyo 153-8605, Japan A business of w KGaA Darmstadt, Germany eptember, 2019, W30-