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CAP. SOC. EURO 2.000.000 I.V.
R.I.PC 032-1483
R.D.PC 44507
MECC EXPORT PC002237

azienda chimica e farmaceutica

SPECIFICA TECNICA
TECHNICAL SPECIFICATION

Prodotto: **DRY FLO P C**
Product *ALUMINIUM STARCH OCTENYLSUCCINATE*

NOME INCI *INCI NAME*	Aluminium Starch Octenylsuccinate
NOME INCI USA *INCI NAME USA*	Aluminium Starch Octenylsuccinate

SPECIFICA ***SPECIFICATION***	**METODO** **METHOD**	**Lim. Inf. - Lim. Sup.** ***Lower Lim. - Upper Lim.***	**u.m.**
* Aspetto *Appearance*		Polvere scorrevole,senza corpi estr. *Sliding, free from for.materials powder*	
* Colore *Colour*		Bianco o biancastro *White or whitish*	
Identificazione IR *Identification IR*		Positiva *Positive*	
pH (in H2O/Amido 4/1) *pH (in H2O/Starch 4/1)*		4,50 - 7,00	
Ceneri totali *Total ash*		<=0,70	%
Umidità *Moisture*		<=14,00	%
Granulometria (attraverso 100 mesh) *Particle size (through 100 mesh)*		>=99,50	%
Specifiche microbiologiche *Microbiological specification*			
- Conta batterica totale *Total aerobic count*		<=500	CFU/g
- Lieviti *Yeasts*		<=100	CFU/g
- Muffe *Mould*		<=100	CFU/g
- Coliformi *Coliforms*		<=10	CFU/g
- E.coli *E.coli*		Negativo *Negative*	

I metodi di analisi non indicati sono metodi interni del produttore ottenibili su specifica richiesta

The analytical methods not listed are internal methods of the manufacturer obtainable upon specific request

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- Salmonella *Salmonella*		Negativo *Negative*	
Revisione Capitolato *Specification Revision*		2	
Data Approvazione *Approval Date*		11/12/2018	

* saggi non obbligatori
test not required

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Le informazioni sopra riportate non Vi sollevano dall'obbligo di identificare il prodotto prima dell'impiego. La nostra società non si assume alcuna responsabilità per danni a persone o cose derivanti dall'impiego dei prodotti da noi commercializzati

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The above information will not relieve you to identify the product before use. Our company does not assume any responsibility for damage to persons or property arising by the use of the products we sell

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The pH is measured by preparing a slurry of 20 parts of the product in 10 parts 200 proof (anhydrous) ethanol to which is added 70 parts deionized water. Denatured ethanol should not be used.

DRY-FLO® PC is a unique, hydrophobically modified natural polymer. Supplied as a free flowing white powder, DRY-FLO PC displays a unique combination of properties that makes it well suited for use in a wide variety of personal care products.
Because of its smooth, velvety feel properties, DRY-FLO PC can be used in various powder applications. The starch based product can be utilized as a talc replacement in body powders, adsorbing moisture without caking. In antiperspirants, DRY-FLO PC enhances the visual whiteness of a stick, for example, without contributing to whitening upon application to the skin. In color cosmetics, DRY-FLO PC can be incorporated into liquid or powdered make-up products to improve the aesthetics of the formulation and to adsorb excess oil from skin. Perhaps the most distinctive property of this remarkable product is its unique ability to mitigate the greasiness produced by occlusive agents used in lotions, creams and ointments. In both aqueous and anhydrous products for skin care, DRY-FLO PC reduces the perceived oiliness of formulations, leaving a soft, dry and matte finish on the skin. Because the starch has a broad incorporation range, the amount of DRY-FLO PC can be adjusted for very specific formulation aesthetics. Sunscreens can also benefit from the addition of DRY-FLO PC to the formula. The starch can improve tactile properties, reduce rub-off and enhance SPF - all without whitening on the skin.

APPLICATION AREAS
Powders, Color Cosmetics, Lotions, Ointments, Creams, Antiperspirants, Sunscreens, Deodorants, Dry Shampoo, Pomades

FEATURES/BENEFITS
- Soft, velvety feel
- Hydrophobic
- Oil adsorbent
- Natural polymer
- Free flowing/anti-caking
- Fine, uniform particle size
- Easy to use
- Environmentally friendly
- Improves aesthetics and mitigates greasiness of lotions, creams and ointments
- Enhances SPF of sunscreens
- Improves aesthetics and flow properties of powders
- Does not whiten on skin

FDA Status:
DRY-FLO PC is acceptable for use in food and is covered by regulation 121.1031 for food starchmodified. (Irradiated version)

FORMULATION GUIDELINES
DRY-FLO PC is commonly used as an aesthetics modifier in aqueous emulsions as well as in anhydrous

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ointment formulations. The method of incorporation, which is especially important when adding the starch to an aqueous emulsion, is detailed below:

Aqueous Emulsions

DRY-FLO PC is hydrophobic and thus is not wetted by water alone. The preferred method of incorporation into an emulsion is to wet out the starch in water soluble humectants or in oils. Post add the slurry to the emulsion below 45°C, on cool down. The DRYFLO PC can be added as a powder directly to the emulsion with proper mixing. Again, care must be taken to incorporate the starch at 45°C or below when used in aqueous systems. If temperatures above 50°C are encountered, the starch granule begins to partially solubilize, reducing its effectiveness as an aesthetics control agent.

Anhydrous Ointments

Combine all ingredients, except for DRY-FLO PC and heat to melting. Mix until homogeneous. Slowly sift in the DRY-FLO PC and mix until uniform. Maintain temperature above the melting point of the combined oleaginous materials; the starch will remain in the system as a particulate. Note that the temperature constraint outlined for aqueous emulsions does not apply in anhydrous systems. The DRY-FLO PC will be unaffected up to 80°C in non-aqueous formulations.

Once added to either an aqueous emulsion or an anhydrous product, the DRY-FLO PC can be homogenized or milled without affecting its properties.

Because DRY-FLO PC is an organic material, it is susceptible to bacteriological attack. Suitable preservation is recommended for systems containing DRY-FLO PC.

TESTS AND METHODS

1. Greasiness Mitigation: In a blind panel test involving 20 participants, the anhydrous ointment described below was overwhelmingly selected as being far less greasy than the same formula control without DRY-FLO PC.

Petrolatum 35.00
Cocoa Butter 5.00
DRY-FLO PC 60.00

2. Non-whitening: Using the same formula above, panelists found that it produced a clear, translucent coating on the skin. Whitening was not perceived in spite of the relatively high loading of the DRY-FLO PC in the ointment. In addition, actual reflectance measurements were performed on swatches of natural worsted wool which had been uniformly coated with lotions containing DRY-FLO PC or micronized titatium dioxide. Higher reflectance values relate to greater perceived whiteness on skin. Reflectance was measured directly using a model Micro S-5 Brightmeter manufactured by Technidyne Corp., New Albany, IN.

Formula	**Pigment**	**%Reflectance _**	**vs Control**
Control (fabric only)	0	45.7	-
Lotion only	0	54.6	+8.9
Lotion + DRYFLO PC	10%	51.7	+6.0
Lotion + micronized TiO2	5%	66.5	+20.8
Lotion + micronized TiO2	10%	73.2	+27.5

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Substantially less reflectance was measured with 10% DRY-FLO PC than with formulas tested which contained micronized titanium dioxide.

3. SPF Enhancement: DRY-FLO PC has shown the ability to enhance the SPF of sun care products, which are based on various types of sunscreens. DRY-FLO PC can be used in combinations with micronized titanium dioxide to produce non-greasy, more cost efficient, higher SPF lotions and creams, which will not whiten when applied to the skin.

To exemplify, standard sunscreen lotions were prepared with 1% and 2% micronized TiO2. A third lotion contained 5% DRY-FLO PC in the same base in combination with 1% TiO2. In vivo SPF testing was performed on each of the sunscreen formulations.Data is outlined below. Note the higher SPF with the formula containing DRY-FLO PC.

% Formulation	% Mean TiO2	DRY-FLO PC	SPF
Base Formula	1%	0	5.6
Base Formula	1%	5	8.1
Base Formula	2%	0	9.8

HANDLING AND STORAGE
DRY-FLO PC is a finely divided organic particulate. When handling, avoid generation of dust. Use in well ventilated area. Use of a dust mask is suggested. Exercise good housekeeping practices. Avoid contact of the DRY-FLO PC powder or dust with heat, sparks or open flame.