

Gotalene[®] RS

Natural exfoliating micropowders



The ideal alliance between nature and science

100% bio-based, derived from plant sugars, Gotalene® RS is a renewably sourced and proven alternative to PE based exfoliating beads. These efficient yet well tolerated powders are ideal to create innovative, sustainable exfoliating products for skincare and bodycare.



Natural exfoliating micropowders for personal care

Based on high quality GMO-free biodegradable Polylactic Acid (PLA), Gotalene® RS contributes to reducing greenhouse gas emissions and waste.

Results of a recent sensory test prove that Gotalene® RS delivers a high level of satisfaction, performance and tangible benefits:

- Efficient and well tolerated exfoliating action
- Dead cell removal and smoother skin surface
- Epidermis cell turnover improved for a healthier skin
- Pores more easily unclogged for a deep cleaning action

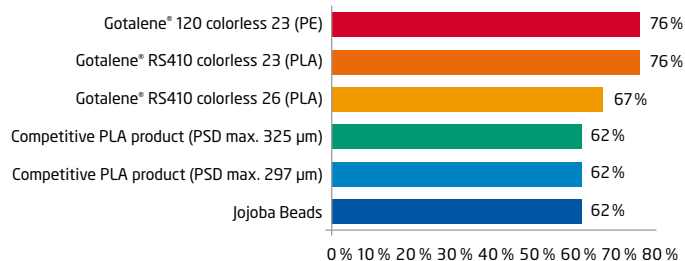
Gotalene® RS exfoliating micropowders can be used in various applications:

- Exfoliating face gels and creams (recommended use: 2-5%)
- Body scrub, shower gels, creams and butters (Recommended use: 5-10%)
- Hand soap cleansers
- Exfoliating foot care
- Bath & shower products (gel, oil, cream, powder...)
- Toothpaste
- Lip scrubs
- Hair care (shampoo, mask, conditioner...)
- Massage candles

Proven efficacy and high level of satisfaction

Sensory test

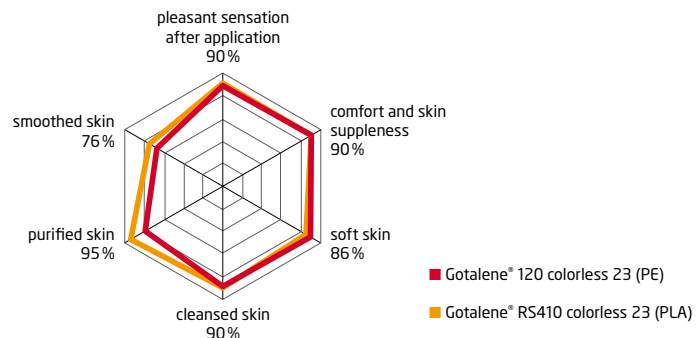
Results of a recent sensory test* prove that Gotalene® RS delivers a high level of satisfaction and performance



* Panelists: 20 volunteers, all women, from 18 to 70 years old, with a balanced to greasy skin

In-use test

Cosmetic Acceptance (after application)
Cumulative % of "agree" and "almost agree"

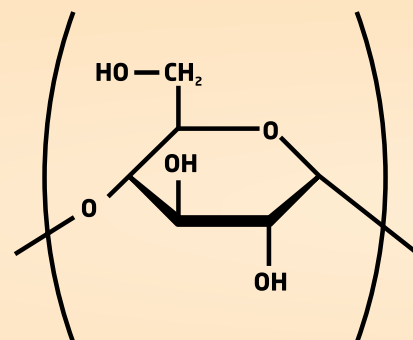


Overall satisfaction
Gotalene® RS410 colorless 23 and Gotalene® 120 colorless 23 satisfy consumer expectations best

How it works - production steps



Extraction









Starch

Key facts



Product range

Our Gotalene® RS product range allows to select the most appropriate grade for your application.

	Maximum particle size	Ecocert*	Cosmos
Gotalene® RS410 colorless 23	 < 315		
Gotalene® RS410 colorless 26	 < 630		
Gotalene® RS410 Blue 23	 < 315		
Gotalene® RS410 Ultramarine 23	 < 315		
Gotalene® RS411 colorless 23 Ecocert	 < 315	Yes	Yes
Gotalene® RS411 colorless 26 Ecocert	 < 630	Yes	Yes

*) Certified GMO-free corn

Formulator's choice

Gotalene® RS brings benefits that really make a difference:

- Process and stabilization made easier
- Constant batch to batch quality
- Controlled consistent and narrow particle size distribution thanks to 50 years experience in powder micronization
- No support of microbiological growth
- No preservatives
- No gamma ray treatment required

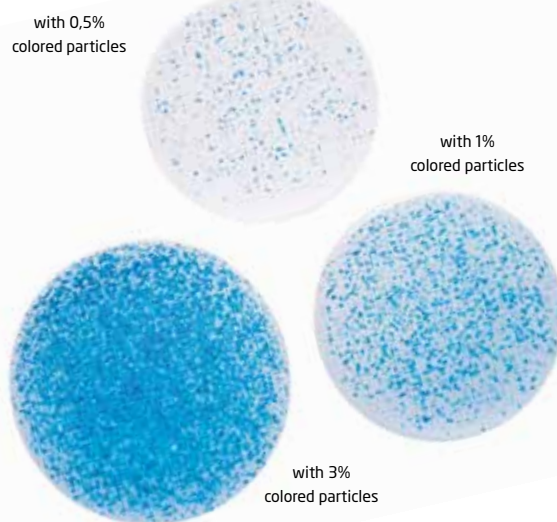
Great stability in formulation

Results of a stability test with Gotalene® RS 410 colorless 23 after 3 months:

- No decrease of pH of the formulation at 4°C, RT and 37°C
- At 50°C, after 3 months, slight decrease of pH (maximum 0.5 point)
- Presence of a buffer allows to avoid a decrease of the pH of 0.1 point on average
- Exfoliating efficiency and visual (aspect + quantity) of PLA particles stay identical

Color possibilities to express your creativity

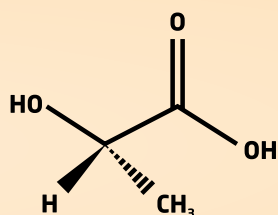
3% is the minimum percentage for an efficient scrubbing effect. So if you use less colored particles, we recommend to complete with colorless particles up to 3%.



Product Specifications

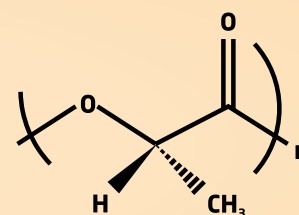
Melting point range:	160 - 185°C
Specific gravity:	1.25 mg/ml
Solubility in water:	insoluble, easily dispersible
Aspect:	dry white powder
Odor:	sweet
INCI Name:	Poly(lactic Acid)

Fermentation



Lactic Acid

Polymerisation (Solvent free)



Poly(lactic Acid (PLA))



100% bio-based

Gotalene® RS has been developed with the growing concern of reducing environmental footprint in mind:

- Reduction in greenhouse gas emissions:
From cradle to polymer factory gate: 1.3 Kg CO₂ eq./Kg polymer (vs Polyethylene: 2.1 Kg CO₂ eq./kg)
- Raw material compliance with EN13432 (09-2000) (requirements for recoverability through composting and biodegradation)
- Much faster biodegradation due to higher specific surface and lower molecular weight (references of publication upon request)
- PLA powders are not ecotoxic for micro-crustacea or algae (source: Soluval Santiago-Analyses Environmental (Couvét, CH), N/réf. 8738)
- According to European directive 91/271/EEC about waste water treatment in urban environment, more than 90% of the floating particles must be retained by the water treatment plants through 2 different processes:
 - 1) a first physical-chemical treatment (flocculation) dividing the floating particles by half
 - 2) a biological treatment reducing the remaining particles by 90%
- Through these mandatory treatments in Europe, 90% of the microbeads will be held within the waste water treatment plants.

In conclusion as the residence times of sedimentation basins in WWTP is usually higher than 20-40 minutes, we expect almost complete retention of Gotalene® RS in a WWTP

Simulation of sedimentation of PLA powder in river environment has demonstrated that after 250 m (20-40 min of flowtime) there are no more PLA particles in water nor in sediment.



**COSMOS
APPROVED**

Gotalene RS 411 Colorless 23 and 26 are now COSMOS approved Raw materials. This certification gives cosmetic companies and formulators the full confidence that Gotalene RS is a truly sustainable solution, which complies with all the stringent COSMOS requirements regarding toxicity, biodegradability and safe origin of the ingredients.



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