

LITHOLIFE

Marine Algae Calcium in Cosmetics

Global applications, formulation value and responsible positioning for Litholife Lithothamnion

A naturally structured marine powder can do more than support a “sea mineral” story. With the right particle size and formulation, Lithothamnion calcareum can function as a physical exfoliant, mineral base, bulking and opacity aid, sensory modifier, and signature component in professional thalassotherapy rituals.

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Executive perspective

Litholife supplies a fine beige powder obtained from calcified red coralline algae. Its matrix is predominantly calcium carbonate, with magnesium carbonate and naturally occurring minor minerals. This creates a differentiated bridge between mineral functionality and botanical/marine provenance. The strongest near-term opportunities are rinse-off exfoliation, cleansing powders, masks, soaps, bath and spa products, and selected loose or pressed powders. Claims should remain cosmetic and evidence-led: cleansing, polishing, mattifying appearance, texture, opacity, sensory experience and marine-origin storytelling are defensible after finished-product testing; treatment, detoxification, transdermal “mineral replacement,” slimming or anti-inflammatory claims are not supported by the current Litholife dossier.

Best near-term fit: rinse-off exfoliation • masks • soaps • powder systems • thalassotherapy

U.S. COMMERCIAL QUICK REFERENCE

Cosmetics | Prepared for Unichem's U.S. market development team

This section consolidates the six information categories requested by Unichem. It should be read together with the full technical article, current specification, lot Certificate of Analysis and current certificates.

Unichem request	Litholife response
1. Key technical differentiators and benefits	100% Lithothamnion calcareum; whole marine mineral matrix; multiple particle-size grades; fine beige powder with neutral odor; lot-level microbiological and heavy-metal controls; USDA Organic-certified ingredient platform. Strongest immediate functions are physical exfoliation, bulking, opacity/texture and marine-origin storytelling.
2. Clinical, scientific or application data	CosIng lists LITHOTHAMNION CALCAREUM POWDER with an abrasive function. Commercial precedents exist in exfoliants, spa/thalassotherapy powders, soaps and masks. Performance claims such as mattifying, oil absorption, smoother feel or improved payoff require finished-formula instrumental or consumer testing.
3. Competitive positioning	Differentiates from mined calcium carbonate through whole-algae provenance and naturally accompanying magnesium. Compared with plastic microbeads, it supports a mineral-particle, plastic-microbead-free concept when the entire formula qualifies. It should not be positioned as a transdermal calcium-delivery active.
4. U.S. regulatory status	U.S. cosmetics are not pre-approved by FDA. The finished-product responsible person must address MoCRA obligations, safety substantiation, facility registration/product listing where applicable, labeling and adverse-event requirements. Verify INCI and intended cosmetic function. Color-additive status must be separately reviewed if the ingredient is used to impart color.
5. Applications and suggested use	Development screening ranges (not universal recommendations): body scrubs 2–10%; facial cleansing powders 0.5–3%; masks/soap bars 1–10%; loose or pressed powders 5–20%; creams/lotions 0.5–3%; professional wraps/bath powders 5–20%. Select grade by sensory target and validate particle morphology, irritation, inhalation exposure, stability, preservation and package compatibility.
6. Supported marketing claims	Lower-risk after formula verification: “with marine algae mineral powder,” “physical exfoliating particles,” “helps polish and cleanse skin,” “adds a soft mineral texture,” and “plastic-microbead-free exfoliant” when true. Substantiate mattifying, oil absorption, visible-shine reduction, facial mildness and wear claims. Avoid detoxification, transdermal mineral delivery, healing, anti-inflammatory, acne/eczema, cellulite and SPF claims without the required evidence/pathway.

Claim-use discipline

Claims should match the evidence level of the exact ingredient and finished product. Category-level Lithothamnion research supports technical plausibility but is not automatically Litholife-specific clinical proof. Disease-treatment claims are outside the recommended territory.

Documents to accompany customer discussions

Current technical specification for the proposed grade

Representative and shipment-specific Certificate of Analysis

Current USDA Organic, Kosher, Vegan, Halal and GMP documentation, as applicable

Safety, allergen, non-GMO, contaminant and microbiological documentation

Full segment technical article and cited scientific references

1. Ingredient identity and commercial names

Recommended ingredient declaration should be confirmed by the finished-product regulatory assessor and the supplier's cosmetic documentation. The market-recognized INCI for the whole milled material is LITHOTHAMNION CALCAREUM POWDER. This is not automatically interchangeable with LITHOTHAMNION CALCAREUM EXTRACT, CALCIUM CARBONATE, CORALLINA OFFICINALIS EXTRACT or other algae species. Commercial language may include algae calcium, red marine calcium, marine calcium, calcified red algae or calcareous algae—while the ingredient list must use the applicable INCI.

Litholife profile relevant to cosmetic developers

Attribute	Litholife profile
Source	100% Lithothamnion calcareum; calcified red coralline algae
Appearance	Fine beige powder; neutral odor and taste
Indicative mineral matrix	~85% CaCO ₃ ; ~11.5% MgCO ₃ ; ~3.5% other constituents
Indicative elemental range	Calcium 30–36%; magnesium 2–4%
Grades available	100, 325, 400, 550 and 1250 mesh
Behavior	Insoluble in water; soluble/reactive in weak acids; pH specification 8.5–10.5
Quality controls	Lot microbiology and arsenic, cadmium, lead and mercury testing
Declarations	Non-GMO, pesticide-free, non-irradiated and allergen-free declarations
Shelf life	48 months under specified storage conditions
Certifications	USDA Organic (IBD), Kosher and Vegan; additional company programs include GMP/BPF, Halal and carbon-footprint management

2. What the global market already demonstrates

The following examples are evidence of category use—not proof that every benefit claimed by a brand is attributable to Lithothamnion alone. Formulas change, so current labels must always be checked.

Region / channel	Example	Observed use	Meaning
EU / global ingredient trade	European Commission CosIng	LITHOTHAMNION CALCAREUM POWDER appears under the abrasive function.	Regulatory vocabulary supports polishing/exfoliation positioning.
Europe / global	Lessonia / Safic-Alcan, Lithothamnium Exfoliator 500	Natural red calcareous seaweed exfoliant for body scrubs; listed across US, Europe, Japan, China and Australia.	Direct B2B precedent for a standardized exfoliating grade.
Italy / EU	Irene Forte, Red Algae Resurfacing Body Exfoliator	Finished premium body exfoliator lists LITHOTHAMNION CALCAREUM POWDER.	Direct consumer-market precedent in a rinse-off scrub.
France / international spa	THALGO, Micronised Marine Algae	Professional thalassotherapy powder combines Fucus, Laminaria and Lithothamnion powders.	Direct precedent for wraps, baths and spa rituals.
Central Europe	Ekokoza cosmetic raw material	Markets the INCI for soaps and face masks.	Evidence of artisan/formulator channels beyond prestige spa.
Global mineral cosmetics	Calcium carbonate ingredient market	CosIng recognizes abrasive, buffering, bulking and opacifying functions for calcium carbonate.	Supports screening of powder-base and opacity uses; whole-algae performance still requires testing.

3. Application platform: where Litholife can create value

Format	Role / proposition	Grade starting point	Critical validation
Body scrubs / polishers	Physical exfoliation; visible marine particles; rinse-off ritual	100–400 mesh screening	Particle morphology, scratch panel, irritation, rinse profile
Facial cleansing powders	Polishing plus powder-to-paste transformation	400–1250 mesh screening	Facial mildness, eye-area exclusion, dispersion, inhalation control
Masks and spa pastes	Mineral body, opacity, absorbent feel, marine story	325–1250 mesh	pH, drying curve, cracking, removal, preservative strategy
Bar soap / syndet	Scrub, filler, visual identity	100–550 mesh	Bar wear, settling, color drift, skin feel
Bath powders / wraps	Thalassotherapy ritual and mineral suspension	325–1250 mesh	Sedimentation, tub residue, consumer instructions
Loose/pressed powder	Bulking, soft opacity, beige tone, texture potential	550–1250 mesh	Oil absorption, slip, payoff, pressability, drop test, inhalation exposure
Foundation / concealer	Mineral storytelling, opacity/texture contribution	1250 mesh first	Shade impact, agglomeration, sensory and wear
Dry shampoo / body powder	Powder base and potential oil/moisture management	550–1250 mesh	Oil uptake versus benchmarks, whitening, dust control
Creams / lotions	Suspended mineral, opacity and signature story	1250 mesh first	Sedimentation, grit, viscosity, package compatibility
Oral care (adjacent)	Abrasive/mineral platform	Dedicated cosmetic/oral grade	RDA, enamel/dentin safety, flavor, separate regulation

4. Formulation guidance by format

Exfoliants and cleansers

Particle size is the design lever—not merely a specification. Coarser grades can create a more perceptible body polish; finer grades may suit facial or daily-use concepts, but mesh alone does not describe particle shape or aggressiveness. Benchmark under wet and dry rub, microscope/image analysis, sensory panels and repeat-use tolerance. Start low, increase only after mildness testing, and avoid positioning any grade as “microdermabrasion” without dedicated evidence.

Powders and color cosmetics

The beige natural tone can be an advantage in mineral or tinted concepts, but it is not a drop-in replacement for talc, mica, starch or conventional calcium carbonate. Measure bulk density, oil absorption, flow, slip, adhesion, compressibility, payoff and color contribution. For loose powders, minimize airborne dust through granulation, binders, packaging and exposure assessment. Do not imply SPF: opacity is not UV protection, and Litholife is not an approved sunscreen active.

Masks, soaps and emulsions

The material is water-insoluble and alkaline in specification. Acidic systems may release carbon dioxide or change the mineral structure; prototype pH must be monitored over stability. In liquids and emulsions, sedimentation and gritty feel are predictable risks. Use appropriate suspension systems, controlled addition, high-shear dispersion where suitable, and package-compatibility testing.

Thalassotherapy and professional spa

Lithothamnion fits naturally into algal wraps, bath powders, body masks and cabin rituals, either alone or alongside Laminaria and Fucus. The strongest claim territory is sensorial: marine ritual, mineral-rich powder, skin cleansing/polishing, and a smooth or refreshed appearance. “Remineralizing” is common spa language, but it should not be translated into systemic mineral absorption unless a robust human study proves it.

Natural exfoliant and microplastics narrative

A milled algae-derived mineral is not a synthetic polymer microbead. This can support a plastic-free exfoliating-particle narrative when the full formula and supply chain substantiate it. Avoid saying “microplastic-free” solely because one ingredient qualifies; audit every intentionally added polymer particle and the applicable market rules.

5. Litholife differentiation

- Whole marine-algae mineral matrix: predominantly calcium carbonate plus magnesium carbonate and naturally occurring minor minerals—not a single isolated synthetic salt.
- Multiple particle-size grades allow a development platform from perceptible body exfoliation to fine powder applications.
- Beige color, neutral odor and fine powder form support a recognizable marine/mineral identity without added fragrance.
- Lot-level microbiological and elemental-impurity controls are commercially important for globally marketed cosmetics.
- USDA Organic certification can strengthen ingredient traceability and sourcing narratives where used precisely and with a current certificate.
- Vegan, Kosher, non-GMO, pesticide-free, non-irradiated and allergen declarations can simplify customer qualification—subject to market-specific review.

6. How to use the USDA Organic credential correctly

Litholife may state that the ingredient or certified operation is USDA Organic only to the extent shown by its current certificate and approved scope. That does not automatically make a finished cream, scrub or mask “USDA Organic.” Under USDA guidance, a finished cosmetic must meet the applicable National Organic Program composition, handling, certification and labeling requirements; label use must be approved by an accredited certifier. Marketing should therefore say “made with Litholife USDA-certified organic algae ingredient” only after regulatory and certifier review, and should never place the USDA seal on a finished cosmetic by implication.

Ingredient certification ≠ finished-product certification

7. Safety, quality and regulatory guardrails

Control point	Recommendation
Finished-product safety	Maintain adequate safety substantiation; run irritation/sensitization and use tests appropriate to exposure and claims.
Particles	Define particle-size distribution, morphology and sharpness. Assess eye contact and avoid loose dust where inhalation is foreseeable.
Contaminants	Set cosmetic specifications for heavy metals, microbiology and foreign matter; retain lot COAs and traceability.
Claims	Keep claims cosmetic: appearance, cleansing, polishing, texture, feel and fragrance-free/mineral story when true. Disease, healing, anti-inflammatory, circulation, cellulite or systemic detox claims may trigger drug or misleading-claim risk.
Stability	Test pH drift, acid reactivity, CO ₂ evolution, sedimentation, viscosity, color, odor and package compatibility.
Global compliance	Confirm INCI, permitted use, notifications/listings, responsible-person obligations, GMP and language in each destination market.
Color cosmetics	If used for color/opacity in the US, separately verify color-additive status and restrictions; do not rely on an INCI function alone.
Organic claims	Ingredient certification and finished-product certification are different; validate exact wording and seal use before artwork approval.

8. Claims ladder: from ready to research-required

Evidence level	Examples
Lower risk after formula verification	"With marine algae mineral powder"; "physical exfoliating particles"; "helps polish and cleanse skin"; "adds a soft mineral texture"; "plastic-microbead-free exfoliant" when the full formula supports it.
Requires instrumental or consumer substantiation	"Mattifying"; "absorbs excess oil"; "improves softness/smoothness"; "reduces visible shine"; "gentle enough for facial use"; "long-wear" or "improved payoff."
Avoid without dedicated evidence / regulatory pathway	"Delivers calcium through the skin"; "remineralizes the body"; "detoxifies"; "treats acne/eczema"; "anti-inflammatory"; "stimulates circulation"; "reduces cellulite"; "heals"; "SPF/UV protection."

9. Recommended development program

- Regulatory identity package: confirm cosmetic-grade specification, INCI, botanical origin, manufacturing flow, current certificates and global status.
- Physical characterization: laser diffraction/sieving, microscopy, morphology, bulk/tapped density, flow, oil absorption and moisture.
- Bench screening: compare 3–5 grades in representative scrub, mask, bar, loose powder and emulsion bases.
- Performance: exfoliation/polishing panel, rinse and residue, sebum/oil uptake, opacity, compressibility, payoff and sedimentation.
- Safety: impurities, microbiology, skin compatibility, ocular/inhalation risk assessment and finished-product safety substantiation.
- Stability: accelerated, freeze–thaw, light, packaging and acid-compatibility studies.
- Claims: select precise cosmetic wording, define endpoints, then conduct instrumental, expert-grade or consumer studies.

- Launch documentation: master specification, COA template, SDS, allergen/non-GMO statements, traceability, claims dossier and market-specific label review.

10. Commercial concept portfolio

Concept	Format	Commercial story
Marine Mineral Body Polish	Rinse-off body scrub with a selected perceptible grade	Natural marine particle; polished skin feel; premium spa ritual
Powder-to-Paste Facial Cleanser	Fine grade dispersed on activation with water	Water-light format; soft mineral sensory; controlled polishing
Professional Algae Wrap	Lithothamnion with Laminaria/Fucus powder	Thalassotherapy protocol; mineral-rich marine story
Pressed Mineral Veil	Ultra-fine grade in tinted face powder	Beige mineral base; opacity/texture platform; talc-free concept possible
Mineral Cleansing Bar	Soap or syndet with visible or subtle particles	Distinct appearance; exfoliating cleansing; low-water format
Scalp & Body Refresh Powder	Ultra-fine powder blend	Dry format; freshness and mattifying claims after validation

Conclusion

For cosmetics, Litholife's strongest proposition is not a medicalized "calcium delivery" promise. It is a versatile, traceable marine powder with real precedent in exfoliation and thalassotherapy, plus credible development potential in masks, bars and powder systems. The commercial advantage comes from combining an authentic whole-algae mineral matrix, multiple grades, controlled quality and carefully substantiated cosmetic performance. A focused application-testing program can convert that story into defensible claims and formulation data for global brands.

From marine provenance to measurable cosmetic performance.

References and market evidence

1. **European Commission, CosIng — Abrasive function list.** [Source link](#) — Lists LITHOTHAMNION CALCAREUM POWDER as a cosmetic abrasive.
2. **European Commission, CosIng — Calcium Carbonate.** [Source link](#) — Recognized functions: abrasive, buffering, bulking, opacifying and oral care.
3. **Safic-Alcan / Lessonia — Lithothamnium Exfoliator 500.** [Source link](#) — B2B cosmetic exfoliant based on LITHOTHAMNION CALCAREUM POWDER.
4. **Irene Forte — Red Algae Resurfacing Body Exfoliator.** [Source link](#) — Finished product ingredient list includes LITHOTHAMNION CALCAREUM POWDER.
5. **THALGO — Micronised Marine Algae.** [Source link](#) — Professional thalassotherapy blend containing Fucus, Laminaria and Lithothamnion powders.
6. **Ekokoza — Lithothamnium cosmetic raw material.** [Source link](#) — Commercial raw material page identifying soap and face-mask uses.
7. **FDA — Modernization of Cosmetics Regulation Act (MoCRA).** [Source link](#) — US requirements including safety substantiation, facility registration, product listing and adverse-event obligations.
8. **FDA — Cosmetics Labeling Claims.** [Source link](#) — Distinguishes permissible cosmetic positioning from unapproved drug claims.
9. **USDA AMS — Cosmetics, Body Care and Personal Care Products.** [Source link](#) — Explains that finished cosmetics must independently meet NOP composition, certification and labeling rules.

LITHOLIFE / COSMETICS TECHNICAL ARTICLE

- 10. European Union — Regulation (EU) No 655/2013.** [Source link](#) — Common criteria for cosmetic claims: legal compliance, truthfulness, evidential support, honesty, fairness and informed decision-making.
- 11. Bogdan et al. — Marine Macroalgae in Topical Formulations (2025).** [Source link](#) — Scientific review of macroalgae in topical formulations and commercial skincare context.

Technical note: product composition and certifications above reflect Litholife information supplied for this project and should be checked against the current specification, COA and certificate before commercial use. Market examples were accessed in August 2026; formulations may change. This article is technical–commercial information, not a finished-product safety assessment or legal opinion.