

Sea-Derived Ingredients for Skin + Hair

A practical guide to marine ingredients in cosmetic formulation

by Joan Morais



IN THIS GUIDE

Explore sea moss, spirulina, seaweed extracts, algae oil, sea water, and other marine actives - how they are derived, what they contribute to skin and hair, and where they work best in formulations.

Marine Ingredients, Different Functions

Marine cosmetic ingredients are not interchangeable. Macroalgae, microalgae, marine oils, and mineral-rich sea water each contribute different polysaccharides, antioxidants, lipids, pigments, or electrolytes. The species, extraction method, and commercial grade determine how an ingredient performs.

Sea Moss + Spirulina

Sea moss (*Chondrus crispus*) is a red macroalga rich in carrageenan-type polysaccharides that can support hydration, light film formation, and conditioning. Spirulina (*Arthrospira platensis*) is a cultivated cyanobacterium valued for proteins, amino acids, pigments, and antioxidant compounds. Both are available as powders or extracts, but the forms behave differently in a finished formula.

Why Formulators Choose Marine Ingredients

- Polysaccharide-rich seaweeds can add hydration, slip, film formation, and a cushioned skin or hair feel.
- Brown seaweeds such as *Undaria*, *Saccharina*, and *Fucus* can supply fucoidan, alginates, and marine polyphenols.
- Algae oils contribute emollience and lipid conditioning; antioxidant-rich microalgae actives can support skin-protective formulas.
- Sea water and marine minerals add electrolytes and mineral content, but can affect viscosity and emulsion stability.

Brown Seaweeds: *Undaria*, Kelp + *Fucus*

Undaria pinnatifida (wakame), *Saccharina latissima* (sugar kelp; formerly *Laminaria saccharina*), and *Fucus vesiculosus* (bladderwrack) are brown seaweeds used in hydrating, soothing, antioxidant, and mature-skin products. Standardized extracts may concentrate fucoidan or polyphenols and can provide more predictable activity than whole-seaweed powders.

JOAN'S FORMULATION NOTE

These are some of the sea-derived ingredients I have formulated with in skin and haircare products. Always check the exact INCI, species, extraction method, active concentration, carrier system, and supplier usage instructions. Clinical data for one standardized extract should not automatically be applied to every ingredient from the same species.

Sea-Derived Ingredients at a Glance

Use this chart as a formulation overview. Exact benefits, solubility, use level, color, odor, heat tolerance, and processing depend on the commercial grade.

Ingredient	Key contribution	Best formulation fits
Sea Moss / Chondrus crispus	Hydration, film formation, conditioning	Gel serums, masks, conditioners, curl products
Spirulina	Antioxidant-rich botanical support; color + nutrients	Masks, scalp serums, shampoos, conditioners
Undaria pinnatifida	Fucoidan-rich options; soothing + barrier support	Facial serums, creams, scalp serums
Saccharina / Sugar Kelp	Hydration, antioxidant support, conditioning	Serums, lotions, conditioners, scalp products
Fucus vesiculosus	Fucoidan + polyphenols; antioxidant support	Mature-skin serums, creams, eye products
Ulva lactuca	Polysaccharides; hydration + light film	Mists, gel serums, light moisturizers, scalp care
Algae Oil	Emollience, fatty acids, lipid conditioning	Facial oils, creams, hair serums, conditioners
Sea Water / Minerals	Electrolytes + minerals; formulation-dependent hydration	Mists, mineral serums, scalp tonics, texturizers
Astaxanthin	Oil-soluble antioxidant carotenoid; intense color	Oil serums, facial oils, creams, eye + scalp oils

MARINE FORMULATION TIP

Marine ingredients can bring salts, natural color, odor, oxidation sensitivity, or high polysaccharide content into a formula. Test their effect on pH, viscosity, preservation, emulsion stability, sensory feel, packaging, and long-term appearance.

Which Should You Choose?

- Choose sea moss, Ulva, or kelp extracts when hydration, film formation, or lightweight conditioning is the priority.
- Choose algae oil or astaxanthin when you want lipid-phase conditioning or antioxidant support in oil-based or emulsified products.
- Choose standardized Undaria or Fucus extracts when you want a more targeted marine active with supplier-supported skin efficacy data.

Formulator's Decision Guide

Use this checklist before choosing and incorporating a sea-derived cosmetic ingredient.

- Define the product goal: hydration, antioxidant support, barrier support, scalp care, lipid conditioning, film formation, or sensory benefit.
- Confirm the exact INCI, species, source, extraction method, vegan status, sustainability information, and contaminant testing.
- Check whether the material is a powder, liquid extract, standardized active, oil, or mineral solution - and identify its carrier ingredients and preservatives.
- Follow the supplier's usage rate, pH range, heat limit, solubility, and recommended processing phase.
- Account for electrolytes, natural pigments, odor, oxidation sensitivity, and the ingredient's effect on viscosity and emulsion stability.
- Complete appropriate stability, preservative efficacy, packaging compatibility, and finished-product safety testing before making product claims.

The Main Takeaway

REMEMBER

“Marine” does not describe one function. Select the exact sea-derived ingredient for the job you want it to do, verify the supplier documentation, and build the complete formula around its chemistry and processing needs.

LEARN MORE

Learn how to select, combine, and test ingredients in the Professional Natural Skin Care Formulation Course and Professional Natural Hair Care Formulation Course from Joan Morais Cosmetics School.

Read the full [Sea-Derived Ingredients for Skin + Hair](#) article and explore professional cosmetic formulation training at www.JoanMorais.com.

Educational formulation reference by Joan Morais. Always follow supplier specifications and verify preservation, stability, packaging compatibility, finished-product performance, and claim substantiation.