

## Spa Ingredients 2018

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A spa is generally regarded as a luxury venue for pampering human bodies and for beauty treatments. Many of them use face and body masks as delivery systems and are also centres for cellulite treatments and body sculpturing and these are the focus of this feature.

The patent abstracts in this issue describe two different ways of creating facial sheet masks, one using hyaluronic acid gel as the substrate and the other using nanocellulose particles. Sheet masks are rapidly gaining in popularity especially in the Far East, where according to a Mintel 2015 report, 67% Chinese females say they use sheet masks on a regular basis. Other types of masks include gels, creams, clay and peel-off and all may be used to deliver moisturisers and cosmetic actives to the skin.

**Croda** has produced a PowerPoint presentation entitled “The Magic behind the mask”, which describes the diverse types available and is illustrated with concept formulae. An example is Oil Control Smoothing Essence Mask, described as having a low viscosity free flowing gel-like feel that gives a cooling sensation when applied because of high water content. It contains Prolevis [Hydrolysed vegetable protein], a film-former that instantly smoothes visible imperfections and dramatically improves skin texture. It also contains Phytexcell Betula alba bark extract, and Phytexcell Hamamelis virginiana (witch hazel) leaf extract, which work together to clear out pores and stimulate pore tightening. The presentation also describes formulating cream, jelly, clear gel and clay and mud masks and peel-off masks. Peel-off masks are applied in liquid, gel or cream format and left to dry before being peeled from the site of application.

Clay masks have long been used in Spa treatments and originally were based on kaolin and Fullers Earth. Bentonite is a favourite because it is rich in beneficial minerals such as magnesium, silica, and calcium. Other clays that found similar applications include Dead Sea Mud and Rhassoul clay available from **A&E Connock** and Thermal Muds from **Provital**. Because of their strong absorbing properties clays and muds are used to treat greasy acne-prone skin, eczema, skin burns and other dermatological conditions. Additionally, the occlusion effect of mud application on the skin raises skin temperature and promotes microcirculation in the conjunctive tissue.

There are many different coloured clays available, the natural colours of which depend on their mineral content. Kaolin is available as both a white clay and a black clay in the Tersil range from **Terramater. The Innovation Company** offers Pelavie Pink Clay, which is a natural pink bentonite, rich in boron. Naturally coloured clays are available in the Beraclay range of **Beraca**’s Brazilian clays. The colours are caused by natural variations in mineral and oligoelements content and provide a unique variety of colours and distinct cosmetic benefits. Green Clay and Red Clay from **Onlystar Bio-Technology Co., Ltd** are montmorillonite clays sourced in China that are rich in minerals and fossilised animal life. Black Native Clay from **Odycea** is a volcanic ash composed of basalt rock that contains low levels of silica but is rich in iron and magnesium. **Odycea** also supplies Bubbling Thermal Water, which comes from thermal springs in the French spa resort of La Bourboule in the Auvergne. It is described as a naturally bicarbonated sodium water, rich in silica and trace elements and has anti-inflammatory and anti-free radical properties.

Spray Clay is a semi-solid clay mask which, thanks to unusual rheology, sprays straight onto the skin. It is a formula for a different type of mask suggested by **Cornelius** for face and body. It contains 35% CosGreen Superfine, which is a very pure grade of green clay sourced from Sain Paulien, in the Auvergne region of France and claimed to show cell regenerating, anti-ageing and healing

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properties. The sprayable rheological properties are conferred by 2.5% Vivapur CS TEX Sun, [INCI: Microcrystalline cellulose, sodium carboxymethylcellulose], that provides thickening and suspending properties and is incredibly sheer thinning. **Cornelius** recommend adding 3% Calmiskin as a phenolic fraction of mint leaves to improve cutaneous comfort by reducing the inflammatory cascade and stimulating the synthesis of pleasure neuropeptides. 5% lavender water is added for its pleasant smell and the balance is water to 100%. **Cornelius** suggests adding Bio-glitters from **Ronald Britton** to add sparkle, bling and glamour to masks with 15 different colours of biodegradable glitter available, all based on eucalyptus.

Whatever the format for face masks they all share similar additives to provide cosmetic benefits. **Croda** suggests many different actives in its presentation including Beautifeye, an active ingredient containing Albizia julibrissin bark extract and Darutoside, a complex of Centella asiatica extract and Siegesbeckia orientalis extract that can reduce upper eyelid sagging and smooth crow's feet. Chronodyn [Euglena gracillis extract] is described as a chronobiological cell energizer that helps in cell metabolism during skin repair at night to fight against signs of fatigue with toned and firmer skin. Phytessence Pink Pomelo [Citrus paradisi (grapefruit) fruit extract], has a keratolytic action and helps improve evenness of skin tone by improving skin cell renewal while Phytessence Purple Ginseng [Polygonum bistorta root extract], combats skin imbalances through its antibacterial, astringent and sebum regulator properties. These and many more are fully described in the Croda PowerPoint presentation and its accompanying formulary.

Pure-Phen from **Phenbiox** is a purifying, soothing and conditioning active ingredient based on Vitis vinifera (grapes) fruit extract, Zingiber officinale (ginger) root extract and Boswellia serrata (frankincense) resin extract. It is a mild but effective treatment to help the skin and scalp to return to healthy conditions. Pure-Phen is obtained using an enzyme based process allowing the complete recovery of plant phytocomplexes and boosting their bioavailability. The combination of the natural active molecules contained in Pure-Phen does not alter the physiological condition of the skin but helps it fight microflora imbalances, reducing skin imperfections and decreasing redness and unpleasant sensations.

The use of peat has a long tradition in spa treatments known as balneotherapy. Masks and body care wraps are the most common formulations and **The Innovation Company** recommend Nordic Beauty Peat for cosmetic applications. It is rich in biologically active substances with high quantities of humic and fulvic acids. It also contains bio-minerals, trace elements, vitamins, amino acids and fatty acids, which are bioavailable to the human skin. Its properties include skin hydration, microcirculation increase, skin lightening and redness reduction.

Marine ingredients and particularly algae are commonly found in face masks and slimming compositions. According to **Lessonia**, although algae are known for their capability to absorb minerals that are beneficial to the skin during algaotherapy treatments marine algae do not make a distinction between the accumulation of good minerals and the accumulation of heavy metals. Alegsecured is algae paste specially developed by **Lessonia** to overcome this issue and it is guaranteed to have a low and managed rate of heavy metals and to be compliant with current world-wide regulations.

Rhodysterol S TG [INCI: Caprylic/capric triglyceride, Gelidium cartilagineum extract, Phytosterols] from **Biotechmarine** is an active extracted from red algae proven to reduce cellulite and increase skin suppleness and tonicity. Body sculpturing and the treatment of cellulite is a major part of the Spa experience. Cellulite is a common skin disorder that is often characterised by a dimple

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appearance of the skin. This condition affects 80% of women worldwide and tends to gather superficially around the thighs, hips, and buttocks. Cellulite develops in the body when fat is deposited immediately below the dermis and contained in fat chambers called adipocytes. As the fat cells grow surrounding tissue becomes compressed and hardened, making blood circulation more difficult. Reduced elasticity of the adipose tissue produces an undesirable tension between the layers and the resulting protrusions and depressions of connective tissue create the appearance of cellulite. Cosmetic treatment is a mixture of improving blood flow, enhancing lipolysis and therapeutic massage and many of the active ingredients used are also useful in slimming and body sculpturing products.

Lipout from **Provotal** contains an extract of *Tisochrysis lutea*, an alga with a standardized xanthophyll concentration that is rich in polyunsaturated fatty acids that stimulate thermogenesis, which is the fat-burning mechanism that reduces excess fat and remodels the figure. Its sales brochure describes the mechanism in some detail and is well illustrated with in-vitro and in-vivo studies to determine its efficacy. Rhodysterol S TG from **Biotechmarine** works by binding the adipocyte receptors, inducing lipolysis and the hydrolysis of triglycerides into fatty acids and glycerol. **Solabia** suggest Guaraslim as a body toning and slimming aid: it is a hydroglycolic extract of *Paullinia cupana* seeds and *Ptychopetalum olacoides* bark and contains polyphenols and caffeine.

Caobromine from **Solabia** is *Theobroma cacao* (cocoa) extract obtained via hydroglycolic extraction of cocoa bean shells. It is rich in caffeine and theobromine and these molecules inhibit intracellular phosphodiesterase (PDE) in fat cells. This leads to an increased concentration of cellular cyclic AMP and thus the activation of triglyceride degradation to fatty acids and glycerol. A third material from **Solabia** is Delipidol [*Punica granatum* seed oil, hydroxyphenethyl esters], which is obtained via a solvent-free, biotechnological process from pomegranate seed oil and tyrosol. It is recommended as a slimming ingredient to decrease orange peel appearance by reducing fat nodes, and protecting against cellulite progression. Liporedux from **Kalichem** is an extract of *Coleus forskohlii* root and linoleic acid esterified with L-carnitine. It directly activates adenylate cyclase and raises cyclic AMP levels to encourage thermogenesis, which is preferentially fuelled by fatty acids derived from body fat.

*Coleus forskohlii* root extract is also an active in Adiporeguline from **IFF-Lucas Meyer**, which acts with aspartame, caffeine and sodium salicylate to provide a global action on adipocyte metabolism, resulting in a decrease in lipogenesis, an increase in lipolysis and a reduction of adipocyte size. **Principium** suggests ITC Slim [INCI: Dextran, caffeine, capsicum, ruscus] as a high performing active with sustained release technology to target cellulite whilst improving the overall body slimming effect and skin elasticity.

**CR&D** suggest its Glycoxantine containing hydrolyzed glycosaminoglycans, caffeine, theophylline and theobromine as an anticellulite and body contouring active. This is one of a range of materials from CE&D described as inner skin activators based on hyaluronic acid and its precursors. Glycacid ECO [INCI: Glycerin, hydrolyzed glycosaminoglycans] is a biotechnological product composed of precursors of mucopolysaccharides and its small molecular size enhances intradermal penetration. An increase in connective tissue permeability improves the drainage of the interstitial liquid and enhances penetration of the active ingredients that help reduce inflammation. ShapePerfection [INCI: *Brassica alba* sprout extract, capsaicin, caprylic/capric triglyceride] from **Mibelle Biochemistry** is claimed to increase cutaneous blood microcirculation, fatty deposits undergo thermogenesis and body shape and skin elasticity is improved.

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Imparting warming or cooling sensations are often part of the treatments found in spas. According to a brochure about Cryogenyl from **Solabia** the skin has free nerve endings, that are similar to blood capillaries and are sensitive to variations in temperature. The cold receptors are linked to fine, myelin fibres located in the epidermis. Contrastingly, the heat receptors are connected to type C-myeelin fibres that are housed in the dermis. The thermoreceptor density of the skin varies considerably from one site to the next, with the greatest density being found in the face and generally there are more cold-sensitive than heat-sensitive areas.

Cryogenyl from **Solabia** is a mixture of menthyl PCA, octyldodecyl PCA and butylene glycol. When used in aqueous formulations, Cryogenyl can provide a fresh, cooling sensation to the skin and help strengthen the barrier function by promoting epidermal lipid synthesis and improving cell cohesion.

**IFF-Lucas Meyer Cosmetics** has Lecigel, [INCI: Sodium acrylates copolymer, lecithin] as a gelling agent with emulsifying and cooling properties providing a pleasant and safe alternative to menthol and alcohol. **Active Concept's** Fractionated Lemon Cooling OS [Citrus limon (lemon) fruit extract] creates a refreshing and recognisable cooling effect with perceivable sensorial benefits without irritation.

**Symrise**, (now part of **Safic-Alcan**) suggests Frescolat Plus [INCI: Menthol, menthyl lactate], as a liquid blend that provides a powerful cooling sensation on the skin. Koko ML Plus II from **Sino Lion** is of similar composition. **Salvona** offers SalSphere SalCool, a multi-component mixture said to provide users with a refreshing and soothing sensation and the perception of freshness without physically dropping the temperature of the skin and without the menthol odour common to cooling products. The technology enables the ingredients to act in a non-competitive manner on the different sensory nerve endings of the skin for extended time-release performance.

Capsine from **Ennagram** is a concentrated oil-soluble extract of capsicum fruits with a standardised content of 10 % capsaicin. When appropriately applied to the skin, the product produces a gentle sensation of warmth and acts as a topical analgesic by inhibiting the synthesis, transport and release of Substance P, a neurotransmitter of pain. For water based systems, Capsine WS is a standardised water-soluble capsicum extract containing 1.5 % capsaicin. SenseHot {Vanillyl butyl ether} from **Sino Lion** is a warming agent for skin care applications said to be less irritating than other warming agents. The same material is part of Thermolat [INCI: Vanillyl butyl ether, 1,2-hexanediol, caprylyl glycol, ascorbyl palmitate] from **Symrise**. It is a warming ingredient that provides a controlled and pleasant warming sensation on the skin without irritation. For intensive warming Sylosiv A3 Zeolite from **Grace Materials Technologies** is a microporous, aluminosilicate mineral that reacts with water to release heat.

NOTE: In mixtures only the principal ingredients are shown and those interested are urged to contact the supplier for further information.

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