

Bathroom Products;
1st Published in SPC February 2008
John Woodruff

A **bathroom** is a room that may have different functions depending on the cultural context. In the most literal sense, the word bathroom means "a room with a bath". Because the traditional bathtubs have partly made way for modern showers the more general definition is "a room where one bathes".
Wikipedia - Bathroom

First and foremost, bathroom products are for personal cleansing, whether by washing or for use under the shower or in the bath. Traditional soap is not seen as user friendly for a variety of reasons, not least because of its high pH. Clear soaps and olive oil soaps are thought to be more kind to the skin and syndet bars and lotions have made strong growth in recent years.

The continuing trend is towards mildness, often associated with natural ingredients. Despite its obvious advantages of price and performance sodium laureth sulfate is not perceived as either mild or natural and is certainly not approved by Ecocert and other certification bodies. The

following table produced by **Surfachem** shows materials that conform to Ecocert requirements to be called natural or which can be used in personal cleansing products designated natural.

Product Group	Shampoo	Shower gels	Bubble bath	Baby products	Hand soap	Soap bars	Toothpastes	Lotions
Acyl glutamates	Y	Y	Y	Y	Y	Y	Y	N
Acyl sarcosinates	Y	Y	Y	Y	Y	Y	Y	N
Methyl glucosides	Y	Y	Y	Y	Y	Y	N	Y
Acyl lactylates	Y	Y	Y	Y	Y	Y	N	Y
Alkyl sulfoacetate	Y	Y	Y	Y	Y	Y	Y	Y
Alkyl polyglucoside	Y	Y	Y	Y	Y	Y	N	Y

Acyl glutamates are said to exhibit excellent foaming properties, be resistant to hard water and to be extremely mild. They form a protective layer on the skin that contributes to skin softness. Acyl sarcosinates are very mild surfactants that enhance foam and give softness to the skin. Alkyl polyglucoside and methyl glucoside are also mild surfactants and show superior biodegradability, they act in synergy with other surfactants and are stable under alkaline conditions.

Acyl lactylates are claimed to improve moisturisation and skin feel, to boost and stabilise foam, to reduce tacky feel due to other materials in the formulation and to improve emulsification. Alkyl sulfoacetate is described as an extremely mild surfactant and exceptional foaming agent with outstanding wetting and emulsifying properties that can be used as either the primary or secondary surfactant. Previous features have discussed mild surfactants in detail, including the problems of thickening products made with them [Bathroom Feature 2005]

At Formulate 2007 Pauline Ayres, **S. Black**, said that Spa products for professional and home use continue to show strong growth, particularly those made from high performance, pure ingredients that offer a variety of benefits which encourage the consumer to take more time

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over their beauty & skin care regime. Also at Formulate 2007, Spas were the theme of the presentation by Sandra Pitroipa, **Cornelius Produce Co.** under the title "What Kind of Spa Are You?"

From these and other presentations as well as personal observation it can be seen that the dividing line between bathroom products and Spa products is becoming increasingly blurred.

Spas: there are various stories about the origin of the name. A Belgian spring of iron bearing water was called *Espa* from the Walloon language term for "fountain", and was used in 1326 as a cure by an iron master with such success that he founded a health resort which developed into the town. It is also suggested that the term *Espa* may be derived from the name of the resort, and that its source could be the Latin word "spagere" meaning to scatter, sprinkle or moisten – *Wikipedia - Spa*

The bathroom is no longer the place for a quick clean up before suffering from hypothermia in an English winter; the Spa is no longer the exclusive domain of the rich and indolent. Although commercial Spas abound and are associated with pampering and professional therapies there are many products that are associated with Spa treatments that may equally be applied at home.

Returning to the presentation by Sandra Pitroipa, the term Spa is not confined to any particular product or group of products and there are Spa products for every part of the body. They are often based on a specific, often natural, ingredient and its particular benefits; they may be related to different cultures and ways of living and they should give the feeling that the user is transported into another world, a world of comfort and pleasure. Ideally the user should feel that the product is designed specifically for her so products should reflect every personality and every mood.

Pitroipa suggested a Spa routine starting with an exfoliating peel-off mask. This was a clear gel formulation said to remove all the tiredness and dead skin and reveal a new fresh face! The key ingredients are Natrulon RC-100, INCI: Carnitine, a b-hydroxy acid to increase cell turnover and confer a high level of moisturisation and Erkol 26/88, INCI: Polyvinyl alcohol, a film forming polymer plus a cationic film forming polymer substantive to human skin named Pecogel GC-1110, INCI: PVP/Dimethylaminoethylmethacrylate/Polycarbamyl polyglycol ester.

Spa - an entity devoted to enhancing overall well-being through a variety of professional services that encourage the renewal of mind, body and spirit -
The International Spa Association

For Spa products for professional and home use Pauline Ayres suggested traditional remedies such as ginger, which is now appearing as a key ingredient in radiance and anti-cellulite products. The benefits of pure

plant extracts build upon the natural trend that appears across all personal care products. They should smell wonderful and be luxurious and indulgent. Suggested by Ayres were Alpine floral and plant extracts from pristine environments and products enhanced with an increasingly wide variety of benefits, combined with ethical claims, which are appealing to a growing number of consumers.

For pure relaxation Pitriopa suggested a product based on foam burst technology. A liberal amount is applied to wet skin using the hands, after a few seconds it starts to foam and continues to do so while being gently massaged into the skin. The key ingredient is Phenomulse CE1a mixture of polyhydroxystearic acid, isononyl isononanoate, ethylhexyl

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isononanoate, sodium cocamidopropyl PG-dimonium chloride phosphate and methyl perfluorobutyl ether methyl perfluoroisobutyl ether. The formulations for these and other product suggestions are available from Cornelius.

Thalassotherapy comes from the Greek word for "sea", and refers to a variety of treatments that use seawater and seaweed, each designed to tone, moisturise and revitalise the body and skin, and in many cases to improve circulation.

Other marine and ocean derivatives feature in thalassotherapy, too, including algae, mud and sand.

Wikipedia - Thalassotherapy

At the end of a long day relaxation in a hot bath with a glass of white wine and a good book is the choice of many. The therapeutic properties of the bath may be improved by the addition of marine extracts, which is the basis of thalassotherapy. In France many thalassotherapy treatments are available through the French National

Health Service. There are more than fifty centres throughout France of which thirteen are to be found in Brittany, which is also the centre for ingredient suppliers that specialise in providing materials of marine origin to the cosmetic industry.

Biotech Marine harvests algae from the Isle de Brehet from where it is transported to the processing plant a few miles up river at Pontrieux by boat. Biotech Marine claims that by processing seaweeds within two hours of harvesting, the actives are at maximum efficacy. One of the more simple products is Seamoss, an extract from red seaweed living in deep water which is exposed to extreme environmental conditions. It is rich in carrageenans, phycocolloids, minerals and trace elements and is suggested as an additive to bath and shower products.

For seaweed wraps and masks Biotech recommends Masque d'Algues, which includes all the water-soluble components of the brown seaweeds *Laminaria Digitata* and *Chondrus Crispus*, including minerals, oligo elements, amino acids, polyphenols, sugars and polysaccharides. It is said to increase micro circulation, to activate cellular metabolism and to remove damaging toxins. Aosine is suggested for products aimed at improving the elasticity of skin. It is an extract of Aosa, and is comprised mainly of elastin-like proteins which can readily be used in skin care products as an effective non-animal derived alternative to elastin. Studies are said to show that Aosine has the ability to stimulate the production of collagen in human fibroblasts and increase the Collagen Type III to Collagen Type I ratio. Collagen III has been called a *restructuring* collagen and is typically found at higher ratios in infant skin, but with ageing the fibroblasts lose their capacity to produce Collagen III.

Not all suppliers of marine extracts are based in France. **Zymetech** is an Icelandic company that concentrates on research in the field of enzymes and their use in the development and production of pharmaceuticals and cosmetics. The company produces Penzim, a product containing purified enzymes that have a deep-healing effect on the body when applied. Due to the effectiveness of the enzymes, Penzim is claimed to bring relief to people suffering from a variety of skin conditions, rheumatic or arthritic diseases, swelling, and muscle pains and to be a nourishing and healing skin lotion and moisturiser. The active ingredient in Penzim is Penzyme, meaning penetrating enzyme, which is a super-active trypsin proteinase from the North Atlantic cod.

Vevy is an Italian company with a wide range of cosmetic ingredients, amongst which are several of interest for bathroom and Spa products including Thalaton; an extract of plankton,

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and Afrosalt; salts obtained by evaporation of seawater but with a reduced level of sodium chloride. From further afield Polynesian Maris Aqua from **Paroxite Ltd.** is described as pure marine water arising in the heart of French Polynesia that is rich in mineral and trace elements with detoxifying, purifying, stimulating, calming, refreshing, re-mineralising and soothing properties.

Because the identity and levels of trace elements of blood and sea water are so similar the idea of providing minerals via cosmetic compositions to improve skin condition is popular. This is the basis of Balneotherapy and includes bathing in sea water and adding sea salts to bath water. Spa waters are usually rich in mineral salts and are promoted for their health-giving properties and the Spas that surround the Dead Sea are popular with sufferers of

Balneotherapy the treatment of disease by bathing. It may involve hot or cold water, massage via moving water, relaxation or stimulation. Many mineral waters at spas are rich in particular minerals such as silica, sulphur, selenium and radium, which can be absorbed via the skin. *Wikipedia - Balneotherapy*

dermatological problems as well as those seeking to rejuvenate themselves. The waters from the Dead Sea contain 27% of various salts compared to 3% in normal sea water. Further, while sodium accounts for approximately 80% of the salt content of normal sea water, it comprises much less of the salt total in water from the Dead Sea. The remaining principal salts in Dead Sea water are magnesium, potassium and calcium chlorides and bromides.

It is claimed that magnesium is important for combating fluid retention, slowing skin aging and calming the nervous system. Calcium is effective at preventing water retention, increasing circulation and strengthening bones and nails. Potassium energises the body and helps to balance skin moisture. Bromides act to ease muscle stiffness and sodium is important for the lymphatic fluid balance. Dead Sea salts and Dead Sea muds are available from a number of suppliers including **A&E Connock Ltd.**

Returning to Brittany, **Codif Recherche** of Brittany offers Atoligomer, which is spray dried sea water with reduced sodium content. Codif claims that it increases the vitality of the epidermis by its high level of calcium and magnesium and its content of other minerals and trace elements. As well as offering a range of seaweed powders that can be incorporated into various formulations **Setalg**, offers face masks and body wraps and also peel-off formulations supplied in powder form that are mixed just before use with the appropriate amount of water. **Lessonia** is yet another company based in Brittany with a wide range of extracts and exfoliants sourced not only locally but from around the world including seaweeds as ground powders and glycolic extracts.

Agrimer Agues Marins is another Breton company specialising in ingredients of marine origin. It supplies various extracts and minerals and also provides finished compositions of various masks, moisturisers and other treatments for packing and labelling under customers own label. Agrimer does not confine itself to Brittany; ingredients from the Amazon are used to prepare a self heating powder of pimento and cocoa the combined action of heat and flavours of which stimulates the production of endorphins and promotes muscular relaxation. Acerola is used in a peel-off mask with hydrating, soothing and radiance boosting properties. Other ingredients from Agrimer for use in bathroom, spa and thalassotherapy preparations are sourced from Polynesia, Asia and Africa.

Bathroom Products;

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Rubies Fossil salts from **Gaiamare 700**, Spain, were deposited about 40 million years ago when geological movements isolated a sea that then evaporated. The salts crystallised as the water became more saturated and deposits of marine life imparted a natural reddish colour. The crystals have a variety of uses. Generally the larger particles are used as a therapeutic salt bath and for treatment of recurring skin problems such as psoriasis. The salts can be mixed with natural oils as a natural fragrance. The smaller particles are more often added to salt scrubs, or mixed into bath salts for an attractive appearance. The salts are also claimed to rejuvenate and stimulate the skin through detoxifying skin cells, thereby improving skin texture. They encourage pores in the skin to open, allowing impurities to naturally lift away from the skin, removing dirt and toxins.

We are now persuaded that washing is not sufficient for proper cleansing and the removal of engrained grime and dead skin cells and that exfoliation is required. This is often the first stage of treatment in a Spa and salt scrubs and exfoliating scrubs are a growth area for bathroom and spa products. A number of suitable ingredients were described in SPC bathroom Feature 2007. Since then more have become available including a number from **Lipo** that includes ground coconut shell, grape, apricot and raspberry seeds and walnut and almond shells. There are also ground Luffa powders coloured with inorganic pigments. **A&E Connock** has added yet more to its already extensive range, some of the more unusual being sweet fennel seed, ground wood powders, Psyllium husk and Chia seed. The same company is also able to offer minerals and polymer beads for exfoliating products.

Beraca is based in Brazil and as well as providing a number of oils from plants to be found in the rain forest it also offers various exfoliants from the ground seeds of Andiroba, Cupuaçu, Murumuru, Buriti and Aça. **Floritech** is well-known for its jojoba oil products and it has produced numerous beads based on this and other materials. Its brochure shows relative hardness's and particle sizes. Many are available in different colours and some are loaded with active ingredients such as tocopheryl acetate, ascorbic acid, ascorbyl palmitate, beta-carotene, retinyl palmitate and even gold powder.

Dead Sea Periclase extracts magnesium oxide from the Dead Sea and this is offered in various particle sizes as an alternative to aluminium oxide as a scrub agent. **Lessonia** also offers mineral exfoliants including Lithothamnium; a red coral plant rich in calcium and magnesium plus 32 trace elements. Rhyolite; a low density lava rich in silica, formed in Lipari islands volcanoes' magma and said to regenerate skin and to smooth the epidermis without affecting the hydro-lipid surface. Mother-of-pearl is alternatively formed with layers of aragonite and conchiolin organized around a nucleus. Thus, both mineral and organic, it especially activates microcirculation and gives brightness to the face; with sparkling particles, it gives cosmetic scrubs a deep precious image which is pure luxury for the skin.

A step beyond exfoliation is micro-dermabrasion. In this technique the skin is abraded with a high-pressure flow of micro-crystals, typically quartz or aluminium oxide. Chemicals, ultrasonic oscillating tips and lasers have also been used. Many of the materials mentioned above may be suitable for this technique but careful appraisal is needed before using on human skin because of the aggressive nature of the treatment. See the patent abstracts for more information about skin peeling and dermabrasion.

Further reading and useful web sites:

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