

Leading experts in the technology of mineral salts



f a c t s

Sodium reduction
has never been so delicious
with sub4salt[®] sea salt



Introduction

“Salt is born of the purest of parents: the sun and the sea.”
Pythagoras

Even the Greek philosopher Pythagoras knew about the purity and naturalness of salt in his day. Today, salt is not only an additive but is still seen as a precious commodity and a premium ingredient, offering a pleasant salty taste along with good mouthfeel.

As a result, consumers are increasingly paying attention to the origins of their salt. In recent years, sea salt has gained in popularity among consumers, who are searching for exotic salts and alternatives to standard table salt. Food companies are already aware of the enormous potential of sea salt in their products. To meet the rising demand for premium ingredients, manufacturers are launching new products and relaunching their existing products with sea salt.



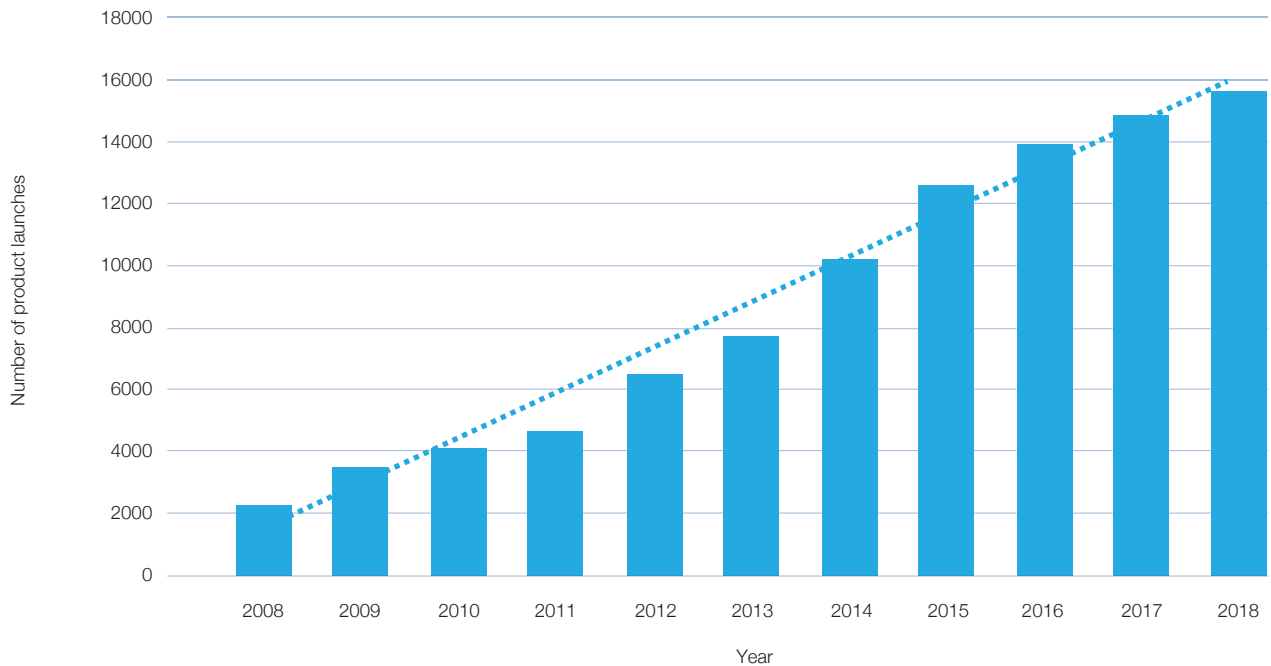
The use of salt is essential for the production of a safe and tasty product. Nevertheless, the high sodium intake on a population level is a global public health problem. Many regulations and initiatives either on mandatory or voluntary basis have already been implemented in various countries around the world.

SALT Minerals provides a tasty solution for reducing the sodium level in food products without compromising the salty taste or functionality, delivering the desired Mediterranean character of natural sea salt to your product.

Rising trend of sea salt in food products

The trend of using sea salt in foods is growing faster than ever. Companies launch numerous products containing sea salt every year. This trend is rising steadily and growth is expected to continue. Over the last ten years, nearly 95,000 new products containing sea salt have been introduced to the market (figure 1).

Figure 1: Number of new products containing sea salt launched between 2008 and 2018



Source: Innova Market Insights

Bakery products, sauces, seasonings and snacks make up the largest share of all food categories launched with sea salt. Sea salt, as a premium ingredient, offers a natural, salty, taste experience in products ranging from the rustic baguette to potato chips.



Most of the products are launched in the Western European market (42%), closely followed by the North American market (41%) where the inclusion of sea salt has grown rapidly over recent years.^[1]

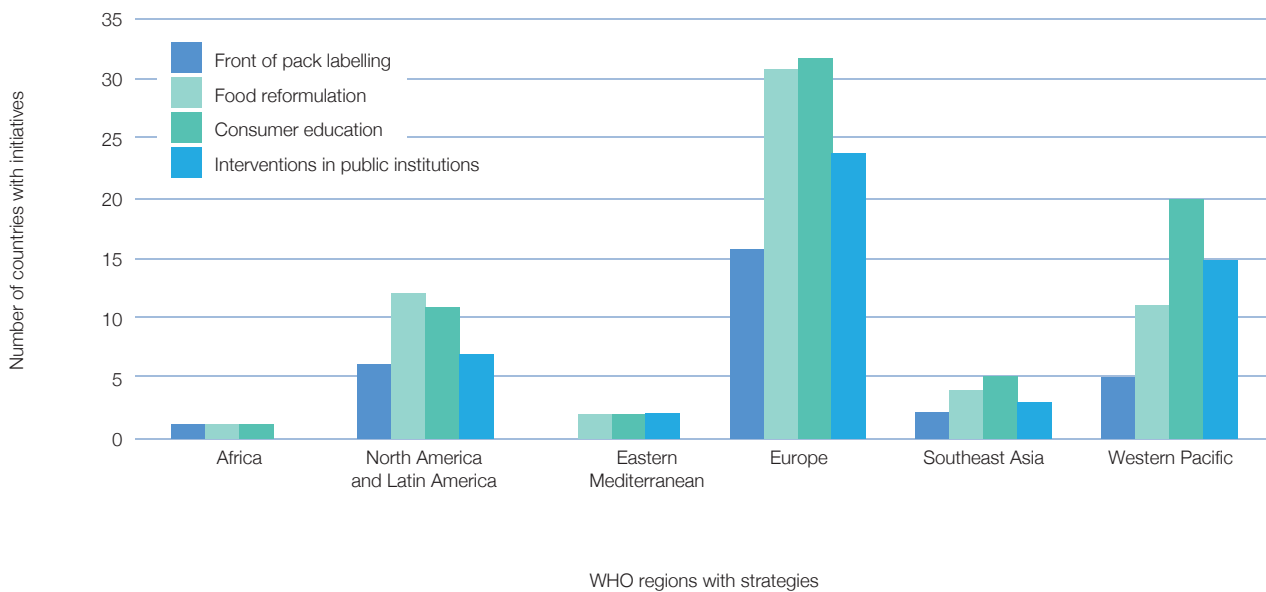
The importance of sodium reduction

Regardless of the origin of the salt, there is a need to reduce sodium in food products. Cardiovascular diseases (CVD) are the leading cause of death worldwide. One of the major risk factors for CVD is hypertension, which is mainly influenced by a high daily sodium intake.^[2] Despite the important function of sodium in the human body in controlling blood pressure and maintaining the function of muscles and nerves, an excess of sodium in the body can lead to serious health consequences. The World Health Organization (WHO) recommended salt intake of 5 g/day is far exceeded in nearly all countries. As a result, WHO has set a global target to reduce salt intake by 30% on a population level by 2025.^[3]

Current dietary habits are characterised by a high consumption of processed and packaged food in a fast-moving society. In industrialised western countries, approximately 70% of the daily sodium intake is contributed by processed food.^[4] This also applies to some Asian regions where nutrition transition from traditional to western foods is being observed, whereas in other semi-urban Asian regions the predominant sources of dietary sodium are salt added to homemade food and the consumption of high-sodium sauces and seasonings.^[5]

Due to this changing dietary behaviour and the alarming effects of nutrition high in sodium, food manufacturers are being advised to reduce the sodium content of their products voluntarily or even on a mandatory basis to avoid warning labels or taxation for high sodium levels.^[6]

Figure 2: Number of countries with initiatives in WHO regions with strategies^[6]



Sodium reduction with sub4salt® sea salt

SALT Minerals, a producer of naturally-derived ingredients, provides an easy solution to help food manufacturers overcome the challenges of sodium reduction in their products while maintaining taste and desired product characteristics.



sub4salt® sea salt is a patented mineral salt blend containing natural sea salt, potassium chloride and sodium gluconate. Sea salt and potassium chloride provide a pleasant salty taste and the functional properties to ensure important product characteristics such as texture, colour and stability. Sodium gluconate, the sodium salt of gluconic acid, is produced by fermentation of glucose and masks the metallic off-taste of potassium chloride to offer an excellent salty taste profile.



With sub4salt® sea salt, sodium reduction of up to 35% can be achieved without compromising taste or functionality in a wide range of wet and dry food products. Due to its comparable granulation to standard salt and its pleasant salty taste, little or no adjustment of the recipe is needed and a 1:1 replacement of standard salt is possible. This makes sub4salt® sea salt an excellent salt replacement that meets today's top health trend and gives food products the desired premium sea salt touch.

The entire sub4salt® product range is characterised by carefully-selected offerings to meet various food industry requirements. Different granulations and sodium reduction levels of up to 50% as well as additives such as sodium nitrite can meet the particular needs of every food manufacturer worldwide. Especially in regions where regulations dictate high sodium reduction, sub4salt® can help to achieve significant sodium reduction while maintaining high product quality.

Sodium gluconate – a flavour with modifying properties

Sodium gluconate, an important ingredient in sub4salt®, has been approved as a flavour ingredient with modifying properties (FMP).

Due to its fermentation process, based on GMO-free raw material, and its flavour purpose (taste accentuation, flavour carrier or for masking/modifying), sodium gluconate can be labelled as a “natural flavour” in countries where FEMA GRAS labelling applies*.

The possibility of labelling sodium gluconate as a “natural flavour” is associated with use of a maximum level of 1.25% sub4salt® in the finished product for each approved food and beverage category.



Approved food and beverage categories for labelling sodium gluconate as a “natural flavour”

Baked goods, beverages type I (non-alcoholic), beverages type II (alcoholic), breakfast cereals, cheese, condiments and relishes, confectionery and frosting, egg products, fish products, frozen dairy, fruit ices, gravies, imitation dairy products, instant coffee and tea, jam and jellies, meat products, nut products, poultry, processed fruits, processed vegetables, seasonings and flavours, snack foods, soups, sugar substitutes, sweet sauces

* With reference to FDA 21 CFR – 101.222, sodium gluconate is listed under FEMA GRAS no. 4934

Conclusion

SALT Minerals offers a wide variety of solutions to meet salt reduction initiatives and customer demands. sub4salt® sea salt provides manufacturers with a superior solution compared to other salt replacements, meeting market needs for gourmet salt and the consumer trend towards a healthier and more conscious lifestyle. Excellent taste and high product quality, the most important requirements of a great product, will be achieved by using sub4salt® sea salt. Accept no loss of taste when reformulating your high sodium-content products – taste the difference with sub4salt® sea salt!

References

- [1] MarketsandMarkets (2019): Gourmet salts market by type (Fleur de Sel, Sel Gris, Himalayan Salt, Flake Salt, Specialty Salt), application (Bakery & Confectionery, Meat & Poultry Products, Seafood Products, Sauces & Savory) & geography – global trend & forecast to 2019. Available at: <https://www.marketsandmarkets.com/Market-Reports/gourmet-salts-market-255586309.html>. [Accessed: 12 Feb 2019].
- [2] Kloss, L.; Meyer, J. D.; Graeve, L.; Vetter, W. (2015): Sodium intake and its reduction by food reformulation in the European Union – A review. *NFS Journal*, vol. 1, pp. 9–19. <https://doi.org/10.1016/j.nfs.2015.03.001>
- [3] World Health Organization (2013). *Global action plan for the prevention and control of noncommunicable diseases 2013–2020*. Geneva: WHO.
- [4] Harnack, L. J.; Cogswell, M.E.; Shikany, J.M.; Gardner, C.D.; Gillespie, C.; Loria, C.M.; Zhou, X.; Yuan, K.; Steffen, L.M. (2017): Sources of sodium in US adults from 3 geographic regions. *Circulation*, vol. 135, no. 19, pp. 1775–1783. doi: 10.1161/CIRCULATIONAHA.116.024446.
- [5] Ravi, S.; Bermudez, O.I.; Harivanzan, V.; Kenneth Chui, K.H.; Vasudevan, P.; Must, A.; Thanikachalam, S.; Thanikachalam, M. (2016): Sodium intake, blood pressure, and dietary sources of sodium in an adult South Indian population. *Ann. Glob. Health*, vol. 82, no. 2, pp. 234–242. doi: 10.1016/j.aogh.2016.02.001.
- [6] Trieu, K.; Neal, B.; Hawkes, C.; Dunford, E.; Campbell, N.; Rodriguez-Fernandez, R.; Legetic, B.; McLaren, L.; Barberio, A.; Webster, J. (2015): Salt reduction initiatives around the world – A systematic review of progress towards the global target. *PLoS ONE*, vol. 10, no. 7. doi: 10.1371/journal.pone.0130247

About SALT Minerals

SALT Minerals GmbH is a leading provider of innovative mineral-based products and solutions, dedicated to addressing global challenges related to health and sustainability. With a diverse product portfolio, SALT Minerals serves industries ranging from food and beverage to industrial applications. Our mission is to deliver sustainable, high-quality salt solutions that enhance everyday life and industrial processes worldwide. With a vision rooted in innovation and a commitment to quality, Salt Minerals continues to elevate the role of mineral salts in shaping a healthier world.

Your SALT Team

Leading experts in the technology of mineral salts

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