AQUAMIN® — Unique mineral matrix for smooth delivery of bone health benefits
AQUAMIN® calcified mineral source is rich in calcium, magnesium and trace minerals to support and improve bone health and overall wellbeing. Derived from calcified red algae Lithothanmnion calcareum, this species grows in the cold European waters off the coast of Iceland and Ireland. During its growth phase, it absorbs essential nutrients from the sea, which provides a higher mineral content.

The red algae sheds its leaves every four to five years. These shed leaves are harvested off of the sea floor, processed and brought to market for functional food and dietary supplement needs in the most environmentally and sustainable friendly method.

What makes AQUAMIN calcified mineral source superior to other calcium and bone health ingredients is that it is not just calcium, but a unique multi-mineral complex of over 70 other trace minerals. Magnesium is the second highest in percentage after calcium. This blend is ideal to deliver added calcium, along with other vital minerals to increase daily intakes.

The complete product line for AQUAMIN calcified mineral source includes:

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>%</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQUAMIN F (insoluble)</td>
<td>Min 31% Ca, 2% Mg</td>
<td>Calcium and magnesium carbonate, ideal for neutral pH applications</td>
</tr>
<tr>
<td>AQUAMIN S</td>
<td>Min 17.5% Ca, 1% Mg</td>
<td>Citrate-malate form, ideal for non-clear/cloudy, low pH applications</td>
</tr>
<tr>
<td>AQUAMIN Soluble</td>
<td>Min 12% Ca, 1% Mg</td>
<td>Citrate-malate form, ideal for clear drinks, functional sports beverage, low pH applications</td>
</tr>
<tr>
<td>AQUAMIN TG (tablet grade for supplements)</td>
<td>Min 30% Ca, 2% Mg</td>
<td>Calcium carbonate with corn starch</td>
</tr>
</tbody>
</table>

The recommended intake levels of calcium include:

<table>
<thead>
<tr>
<th>AGE</th>
<th>ADEQUATE INTAKE MG/D</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-6 mo</td>
<td>210</td>
</tr>
<tr>
<td>7-12 mo</td>
<td>270</td>
</tr>
<tr>
<td>1-3 yr</td>
<td>500</td>
</tr>
<tr>
<td>4-8 yr</td>
<td>800</td>
</tr>
<tr>
<td>9-18 yr</td>
<td>1300</td>
</tr>
<tr>
<td>19-50 yr</td>
<td>1000</td>
</tr>
<tr>
<td>51+ yr</td>
<td>1200</td>
</tr>
<tr>
<td>Preg./lact. &lt;18 yr</td>
<td>1300</td>
</tr>
<tr>
<td>Preg./lact. 19-50 yr</td>
<td>1000</td>
</tr>
</tbody>
</table>

Summary of clinical health effects
Numerous ongoing and published studies support the benefits provide by AQUAMIN calcified mineral source, specifically bone and joint health, as it provides bioavailable calcium and trace minerals. AQUAMIN also qualifies for the FDA approved health claim for calcium and osteoporosis at appropriate levels.

The bone health benefits of AQUAMIN calcified mineral source provide a cost effective way to deliver consumer-friendly label claims. The Nutrient Content and Health Claims in the United States include:

**Nutrient content claims include:**
- Good source of calcium
- Excellent source of calcium

**Qualified health claim:**
- Calcium, vitamin D & osteoporosis

About AQUAMIN®
The suggested claims and inclusion levels for Canada include:

**Nutrient content claims include:**
- Source of calcium
- High in calcium, source of magnesium
- Very high in calcium, source of magnesium

**Disease risk reduction claim:**
- Calcium and vitamin D

**Technical attributes and superior functionality**

AQUAMIN calcified mineral source provides several processing, quality and regulatory advantages when compared to other calcium and multi mineral sources.

AQUAMIN calcified mineral source has a porous structure that allows for superior organoleptic properties such as enhanced texture, lower sedimentation and reduced astringency. The structure of AQUAMIN complexes well with fat and moisture, contributing to a pleasant sensory experience, unlike other calcium sources which have a less complex non-porous lattice structure, leading to sandy or gritty taste and astringent, dry texture as well as unwanted mouthfeel properties.

AQUAMIN can be easily incorporated in many foods as a source of mineral enrichment including:
- Bread and baked goods
- Cereals and bars
- Cheese and dairy products (milk, yogurt drinks)
- Chocolate, confectionary and chewing gum
- Fruit preparations, juices and smoothies
- Functional beverages and flavoured waters
- Ice cream and frozen desserts
- Dairy alternatives
- Pasta
- Sports nutrition & supplements

AQUAMIN calcified mineral source is produced under extremely stringent quality controls. These controls ensure that the product consumers receive is the same product that has undergone clinical testing. AQUAMIN’s regulatory and quality features include:
- GRAS
- Natural
- Suitable for organic applications as nutrient minerals
- Non-GMO
- Kosher-Halal
- Vegan
- Allergen free
- Heavy metal content meets stringent requirements

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¹ Recommended daily value for Ca – 1000 mg, 10% = 100 mg, 20% = 200 mg
² Health Claim at 20% DV for Ca, 200mg. Must meet qualifying and disqualifying nutrient levels (21 CFR)
³ Recommended daily value for Ca – 1100 mg, 5% = 55 mg, 15% = 165 mg, 25% = 275mg; Recommended daily value for Mg – 250mg, 5% = 12.5mg
⁴ Foods must be high or very high in calcium depending on the desired statement.
AQUAMIN® calcified mineral source has very unique physiological and chemical properties in addition to clinical evidence supporting its claims. In essence, calcium alone is not enough — it is the uniqueness of AQUAMIN’s mineral matrix that delivers benefits and greater formulation and application flexibility to develop appealing mineral fortified foods, beverages and supplements.

**Rely on Ingredion for product success**
Ingredion has the experience, the expertise and resources to help you develop appealing consumer products. Our work has taken us into virtually every facet of formulation and production in almost every application. What’s more, we apply our marketing intelligence and consumer trend insights to develop innovative solutions that address emerging consumer demands.

Consumers are increasingly interested in better-for-you alternatives that incorporate scientifically proven nutritional ingredients. There is an ever present need for ingredient innovation to include new technologies and process improvements to positively affect product development and ultimately deliver better tasting, better-for-you food and beverage products to consumers.

Ingredion is at the top of our field in anticipating consumer needs and delivering solutions to our manufacturing partners. Our global innovation center in Bridgewater, NJ includes capabilities unmatched by others suppliers to include sensory analysis, consumer focus groups, pilot plant, Texture Robotics Experimenter (TREx™), a Culinology® center and more, all staffed by a team technical specialists and experts with a broad and deep knowledge, who understand the unique needs of specific markets, applications and customers.

Look to us to partner with you to produce products that deliver on-trend products with the same tastes and textures consumers have come to expect from traditional offerings.

**Get started today**
Ingredion is a leading global provider of ingredient solutions with a broad portfolio of specialty ingredients designed to improve the nutritional content of foods. Our unique ability to solve the nutritional benefit/eating quality/processing equation inspires food formulators to create innovative, healthy and appealing foods.

Ingredion’s staffs of one-on-one account managers, technical staff and customer service professionals are available to answer your questions. Contact us today at salessupport@ingredion.com, call or visit us online.

**1-866-961-6285 | ingredion.com/us/nutrition**