Kalentin

Our **gluten free** eyelash and eyebrow lamination products are designed to enhance your natural beauty with flawless results.

Kalentin guarantees excellent performance, respecting everyone's **health** and **beauty**.

Join us on this journey of beauty and **innovation**, where every detail makes the difference for us.

TOWARDS A NEW FRONTIER

CERTIFIED GLUTEN FREE GFCO.ORG

.....GLUTEN FREE

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01 CASE STUDY: KALENTIN AND THE WORLD'S FIRST LAUNCH GLUTEN-FREE EYELASH AND EYEBROW LAMINATION PRODUCTS

1.1 Innovation for lamination of eyelashes and eyebrows

The Choice of Gluten-Free in Professional Products

Kalentin is the **first brand in Europe and worldwide** to introduce a complete range of products for **lamination of eyelashes and eyebrows** certified **gluten-free**. This innovation responds to the growing demand for safe, transparent and high quality cosmetics, offering an exclusive professional solution that protects even the most sensitive customers.

Kalentin's gluten-free products represent not only a step forward in terms of safety, but also a unique opportunity for beauty salons to **stand out** in an increasingly competitive market.

Safety and Quality: Top Priority

Lash and brow lamination involves delicate areas such as eyelashes and the periocular area, where safety is paramount. Kalentin has developed advanced formulas that:

- **Eliminate the risk of irritation or adverse reactions** due to the absence of gluten.

- They guarantee **excellent results in terms of curvature and durability**, combining high performance with maximum delicacy.

Benefits for Beauty Centres

The Kalentin gluten-free line is certified by **GFCO** (Gluten-Free Certification Organization) and **The Vegan Society**, making it a premium option that emphasizes the **added value** of professionalism and quality.

To ensure **high standards**, Kalentin carefully **selects** the **beauty centres** that are qualified for the use and sale of these products. Only professionals with proven expertise and attention to safety can take advantage of this exclusive line, ensuring that each customer has an **experience of excellence** and in **total security**.

Global Innovation

Being **pioneers in Italy** in introducing a line for **eyelash and eyebrow lamination** and above all being in the category **gluten-free** consolidates Kalentin as leader of the sector, offering an innovative and inclusive service that meets the modern needs of safe and conscious beauty.

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PLASTIC WASTE

100% MADE IN ITALY
IT01
IT01.IT/2544.052.V

Kalentin®
FACTORY

Commitment to a Sustainable Future

Kalentin embraces a **corporate philosophy** oriented towards innovation and sustainability, highlighted by the concrete commitment to reduce environmental impact through the **"Less Plastic"** strategy. This approach aims to limit the use of plastic in **packaging** materials and **production**, promoting environmentally friendly alternatives and solutions.

The adoption of **sustainable practices** is not limited to packaging but extends to every stage of the **production chain**, from the selection of raw materials to distribution. This commitment reflects the will of Kalentin to create high quality products that not only meet the needs of professionals and consumers, but also **respect** the planet.

Thanks to these responsible choices, Kalentin is positioned as a company that combines **cosmetic excellence** and **environmental care**, guided by an ethical vision and conscious of the future.

1.2 Kalentin's approach to safety and quality

Kalentin stands out for its dedication to **quality** and **safety**, paying particular attention to the **reliability** of its products. The company not only ensures safe formulations for all consumers, but also offers concrete support to professionals in the field, creating an environment of trust and expertise.

Strict selection of raw materials

Kalentin takes a very strict approach to the selection of raw materials, ensuring that **none of the ingredients contain gluten** or are susceptible to cross-contamination. Each production batch is tested in the **RIDASCREEN Gliadin** laboratory by R-Biopharm, which ensures that gluten levels are below the accepted limits (<10 ppm).

Support for Industry Operators

To ensure a conscious and effective use of its products, Kalentin has developed a **training program** dedicated to professionals in the aesthetic sector. This program provides 360° knowledge on the importance of gluten-free products, including comprehensive educational materials that help professionals to competently respond to the specific needs of sensitive customers.

OPHTHALMOLOGICALLY Tested Kalentin®

1.3 Responsibility towards consumers and the market

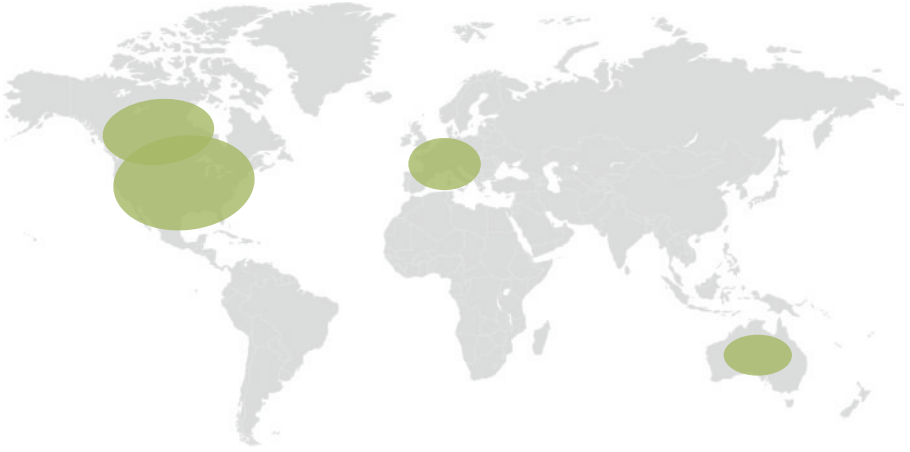
Trust and transparency

Kalentin is committed to creating a **bond of trust** with its customers by offering **gluten-free and vegan certified** products, recognized by prestigious bodies such as the GFCO and The Vegan Society.

This approach not only demonstrates a concrete commitment to safety and well-being, but also underlines the brand's ability to respond to specific consumer needs. Thanks to this focus, Kalentin is able to offer a personalized and inclusive experience, strengthening the trust and loyalty towards the brand.

Strategic positioning and future prospects

Kalentin stands out in the professional beauty sector thanks to its **strategic choice** of developing **gluten-free and vegan certified products**, positioning itself as an innovative leader and clearly differentiating itself from competitors. This approach not only attracts a gluten-sensitive clientele, but also meets the needs of consumers increasingly aware of the safety and transparency of ingredients. **International certifications**, such as those issued by the GFCO and The Vegan Society, have enabled Kalentin to access booming global markets including the **US**, **Canada**, **Northern Europe** and **Australia**, where the demand for safe and inclusive cosmetics continues to grow.



The bubble chart illustrates areas where Kalentin has been able to penetrate the market. The larger the diameter of the ellipse, the greater the predictive demand for gluten-free cosmetics by the population.

Looking to the future, Kalentin is committed to constantly improving and expanding its offer.
Among the main strategies, the company intends to extend the gluten-free approach to other categories of cosmetic products, further enriching its portfolio.
At the same time, Kalentin continues to invest in research and development to refine existing formulations and create increasingly effective and innovative cosmetic solutions, keeping the focus on customer needs and trends of a constantly evolving market.

1.4 The accreditations of Kalentin

GLUTEN-FREE (GFCO)

The **Gluten-Free Certification Organization (GFCO)** is an American organization that has been certifying gluten-free products in the food since **2005**, pharmaceutical and cosmetics sector by **very strict standards** for the safety of celiac or gluten sensitive consumers. It is the **world's leading** organisation in this field.

VEGAN (The Vegan Society)

The Vegan Society, founded in the UK in **1944**, is the world's leading body in the "vegan" field and offers a certification for products completely free of animal ingredients, promoting an **ethical** and **sustainable** lifestyle.

CRUELTY FREE (PETA)

People for the Ethical Treatment of Animals (PETA), based in the US since 1980, issues the "Cruelty-Free" certification for products **not tested on animals**, supporting ethical practices in the cosmetics industry.

OPHTHALMOLOGICALLY TESTED

This indicates that the products have been tested under **ophthalmological control**, often in collaboration with **universities** and **specialised laboratories**. There is no specific body for this certification. Tests can be conducted in different countries, depending on the laboratories involved.

MADE IN ITALY (IT01)

The IT01 certification is issued by **Certottica**, an Italian body that since **1992** has attested the Italian origin of products, guaranteeing quality and authenticity

AMERICAN RECOGNITION

Refers to compliance with US regulations, such as those of the **Food and Drug Administration (FDA)**, which has regulated the safety and labelling of cosmetic products in the United States since **1906**.

COSMETICALLY APPROVED (MOCRA, CPNP, UK, Canada):

MOCRA: The **Modernization of Cosmetics Regulation Act** is a US law regulating the safety of cosmetics since **2022**.

CPNP: The **Cosmetic Products Notification Portal** is the European system that has been reporting cosmetic products since **2013**, based in Belgium.

UK: Following Brexit, the UK has established its own notification system for cosmetics, managed by the **Office for Product Safety and Standards (OPSS)** since **2018**.

Canada: **Health Canada** is the Canadian government body responsible for regulating cosmetic products in the country since **1993**.

1.5 The GFCO Accreditation Process: A Rigorous and Challenging Process

Achieving the **GFCO** (Gluten-Free Certification Organization) certification is a prestigious achievement, but it requires significant commitment in terms of resources, time and expertise. The process involves compliance with over **80 rigorous standards**, guaranteeing gluten-free and production excellence. This **internationally recognised** certification is particularly in line with US regulations, known for their high severity. Not all companies are able to achieve this level of compliance, making certification a hallmark of quality and reliability.

Among these 80 regulations, we would like to mention some of them:

Gluten concentration: Must be less than **10 ppm** (parts per million), a more restrictive standard than the generally accepted 20 ppm.

Control of raw materials: Every ingredient used must be checked to ensure it is **gluten-free**.

No contamination: Every stage of production and packaging, from storage to distribution, must be monitored to **prevent cross-contamination**.

Strict labelling: Certified products must follow clear and transparent guidelines to **avoid misleading consumers**.

Remote and on-site audits: Auditors examine every aspect of production in detail, both on-site and through remote document checks. The controls include analysis of raw materials, production processes and cleaning of plants and premises (**HACCP**).

Staff training: Every member of the staff involved in production must receive **in-depth training** on the gluten-free standards to ensure compliance at every stage.

Testing and analysis: The finished products and raw materials are subjected to laboratory tests (**R-Biopharm's RIDASCREEN Gliadin**) for even the smallest traces of gluten.

Standard Operating Procedures (SOP): Similar to the GMP (Good Manufacturing Practices) requirements, SOPs must be documented and implemented to ensure **quality** and **safety**.

Periodic audits: GFCO certification is not permanent. The company has to **undergo regular annual audits** in order to maintain certification, often by surprise.

1.6 An Exclusive sale for the Professional Sector

Kalentin has adopted an exclusive strategy to position its GFCO-certified lash and brow lamination range as a **niche solution**, raising the standards of professional beauty treatments. This positioning is based on two fundamental pillars: the **rigorous selection of professionals** and a **complete and targeted training**.

Exclusive access to Kalentin GFCO products

Access to GFCO certified products is reserved exclusively for highly qualified professionals, who demonstrate seriousness and constant commitment to training.

Comprehensive and in-depth training

Kalentin is committed not only to selling products, but also to creating a **network of qualified and knowledgeable professionals**. The training proposed includes:
The **importance** of **GFCO** certification.
The **history of gluten** and its **use in cosmetics**.
Chemical insights into gluten composition and molecules.
Differences between conventional and gluten-free certified products.
Communication strategies to educate end customers on the importance of gluten-free treatments.

Benefits for beauty professionals

The adoption of gluten-free products offers a number of practical and competitive advantages for professionals in the sector:

1. **Access to Unique and Certified Products**

GFCO certified products guarantee **high quality standards**, positioning the professional as an expert in innovative and safe treatments.

2. **Customer Requirements Response**

The **increasing demand for gluten-free cosmetics**, especially from customers with gluten sensitivity, offers the opportunity to satisfy an increasingly aware and attentive clientele.

3. **Increased Security and Flexibility**

The use of gluten-free products **reduces the risk of adverse reactions**, ensuring safer treatments for customers and greater peace of mind for professionals, including from a legal point of view.

4. **Added Value to the Service**

Offering treatments with certified products is a **premium choice** that sets professionals apart from the competition, increasing customer confidence in the services offered.

PATCH TEST: AN ESSENTIAL PRECAUTION

To ensure the safety of treatments, Kalentin recommends a patch test at least **48 hours before treatment**.

Test method: apply a small amount of product behind the ear or in the recess of the arm, leaving it in position for at least 2 hours.

Remarks: Monitor for signs of irritation, itching or redness. If you experience any adverse reactions, stop using the product immediately.

02 INTRODUCTION TO GLUTEN

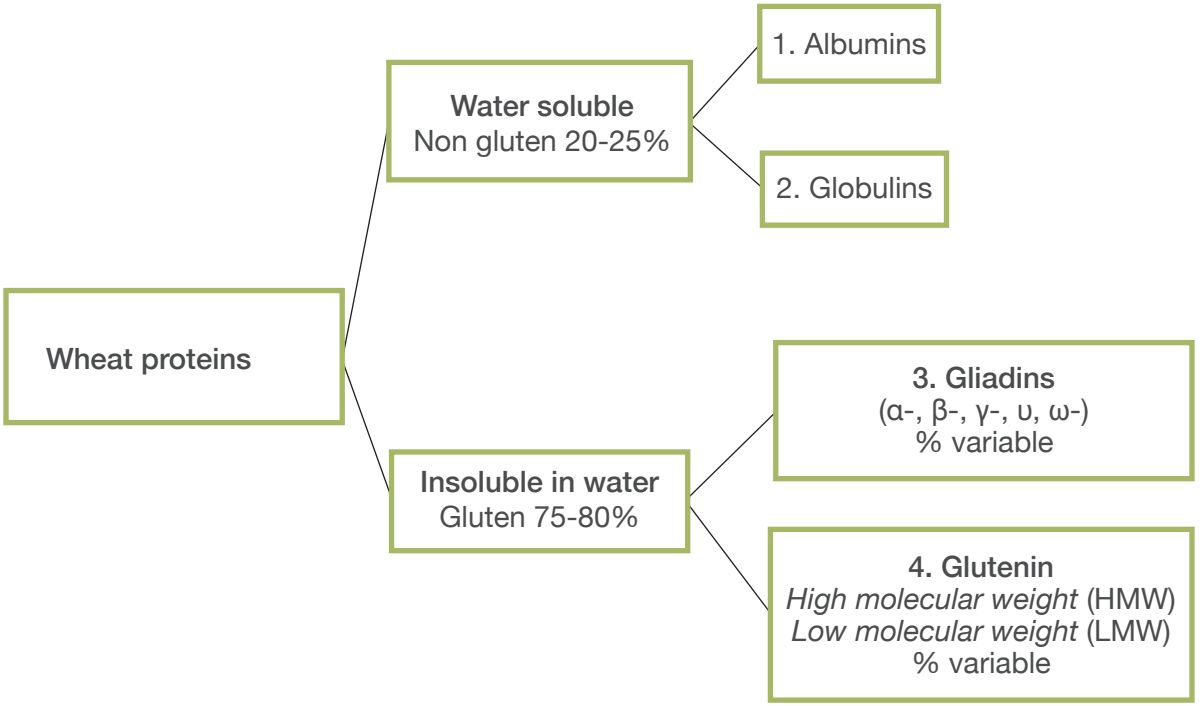
2.1 What is Gluten?

Gluten can be defined as the "**viscoelastic, cohesive protein material** obtained as a by-product of starch isolation from **wheat** flour". A biological definition could include the origins of the gluten protein complex, identifying it as derived from "**wheat reserve proteins**" (Shwery & Halford, 2002). These definitions are correct, but there is much more to be said. The most significant aspect of gluten history for the food industry is its importance (and potential) as a commodity, sold for a wide range of uses worldwide. Another connotation of the term "gluten" refers to the family of proteins that cause dietary problems in people with **celiac disease** (Feighery, 1999; Murray, 1999). In this case, the term "gluten" includes reserve proteins from cereals such as **rye**, **triticale**, **barley** and possibly **oats** (Kasarda, 2001). Therefore, the expression "gluten-free foods" refers to food products without these cereal proteins, or those in which the protein content of cereals is less than a defined amount, usually 200 ppm (parts per million).

Although gluten is more commonly found in **foods** such as bread and pasta, many non-food products may also contain gluten derivatives due to their **thickening and stabilising properties**. As a result, gluten has also spread to **beauty and cosmetics**, where it is used to give consistency and improve **durability**.

2.1.1 Chemical description and composition of gluten

Cereals contain hundreds of different protein components, traditionally classified into four categories called Osborne fractions: 1) water soluble **albumins**, 2) saline soluble **globulins**, 3) **prolamines** soluble in aqueous alcohol and 4) insoluble **glutelins**, which are soluble in alcohol only in the presence of reducing agents. Albumins and globulins (about 20-25% of wheat proteins) comprise mainly metabolic and protective proteins, while prolamines and glutelins (about **75-80% of wheat proteins**) serve as reserve proteins. The common names for these closely related gluten proteins are **gliadine** (prolamine) and **glutenin** (glutelin) in wheat, **secaline** in rye, **ordeine** in barley and **avenine** in oats. Based on homologous amino acid sequences and similar molecular weights, gluten proteins can be divided into three groups: high molecular weight (HMW), medium molecular weight (MMW) and low molecular weight (LMW). Each group contains numerous types of related gluten proteins, with a variable number of individual proteins within each type (Schalk et al., PLOS ONE 2017).

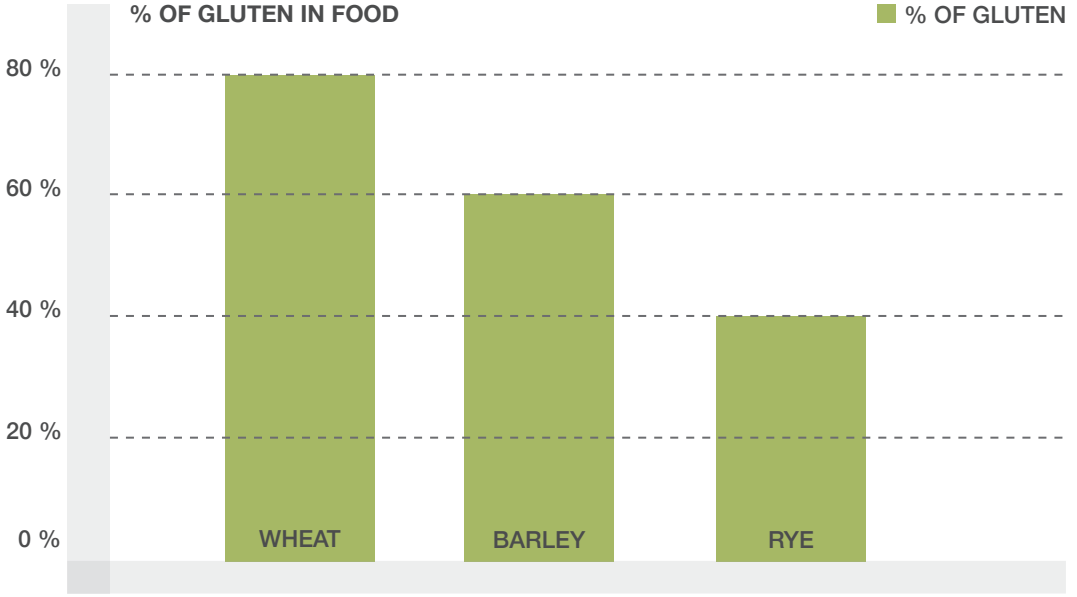


Here is an estimate of the **percentage of gluten** contained in the main cereals that produce it:

WHEAT
Gluten content of **75-80%** of total protein. Wheat has a total protein content of 10-14% of the weight of the grain, of which gluten accounts for the majority (gliadin and glutenin).

BARLEY
Gluten content of **50-60%** of total protein. Barley has an overall protein content of 8-12%, but gluten is less present than wheat, being a mixture of prolamine (ordeine) and other proteins.

RYE
Gluten content of **35-45%** of total protein. Rye has a total protein content of 10-12%, with a gluten composed mainly of secaline, which have a reduced ability to form a glutinous network compared to wheat.



The graph shows the percentage of gluten present in three different foods (wheat, barley, rye).

The actual amount of gluten depends on both the percentage of total proteins and the proportion of gluten within these proteins (Agronomy "Wheat and gluten strength: what it is and how it is measured).

Gluten is composed of two main groups of proteins: **gliadin** and **glutenin**.
When mixed with water, these two components join to form an **elastic structure**. Non-covalent bonds, such as hydrogen, ionic and hydrophobic bonds, are fundamental for the aggregation of gliadins and glutenins and influence the structure and physical properties of the dough.

GLIADINS

They give **elasticity** and **expansion to gluten**. They are often associated with immune in celiac patients, as they cause intestinal inflammation.
Gliadins are mainly **monomeric proteins** with molecular weights between **28,000** and **55,000 Da** (Dalton) and can be classified, according to their different primary structures, or according to the sequence of amino acids from which they are formed, in types α/β, γ and ω (Wieser H., 2007). We find then:

α-Gliadin (alpha-gliadin)
This is the most studied fraction because it is particularly involved in the immune reaction in people with celiac disease. The gene family of α-gliadins in wheat contains four highly inflammatory peptides, among which the "33-mer peptide" is the main immunodominant peptide in celiac patients (Sánchez León et al., Plant Biotechnol J. 2017).

β-Gliadin (beta-gliadin)
With properties similar to α-gliadin, this fraction can also be immunogenic, that is able to stimulate a response of the immune system in sensitive subjects.

γ-Gliadin (gamma-gliadin)
γ-gliadin is less studied than the other fractions, but it may also contribute to adverse reactions in celiacs, although it is considered less aggressive than α-gliadin.

ω-Gliadin (omega-gliadin)
ω-gliadin is less reactive than α-gliadin, but may still contribute to the immune response in predisposed subjects. This fraction is soluble in water, unlike the others, which are soluble in alcohol.

Each fraction has different chemical and immunogenic characteristics, but it is the **α-gliadin** that is most responsible for the autoimmune reaction in celiac subjects, which is why the presence of antibodies against it is often monitored in gluten tests.

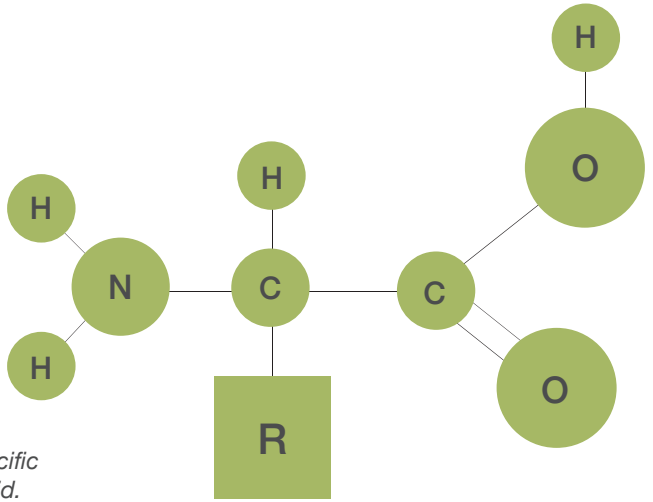
Monomeric protein: consists of a single amino acid sequence.

Polymeric protein: composed of several sequences of amino acids, distinct and linked by non-covalent bonds.

Immunodominant peptide: part of the protein that is recognized by the antibodies and thus triggers the response.

Molecular composition of gliadin

Gliadin is a **prolamine**, a class of proteins rich in amino acids **proline** and **glutamine**. As a protein consisting of long chains of amino acids, gliadin does not have a single chemical formula, but its composition can be described by the sequences of the amino acids that make it up.
In nature there are 22 amino acids. Each amino acid can be referred to as:



Where R is a different and specific side chain for each amino acid.

Several amino acids bind in sequence to each other by chemical bonds called **peptide bonds**. The resulting chains are defined as **peptides**. Several peptide chains bind to each other by covalent bonds to give the **proteins**.
To sum up, gliadins are composed of several amino acids, mainly proline and glutamine, bound together by a peptide bond.

GLUTENINS

Proteins responsible for the **strength and cohesion of gluten**, giving structure and stability, therefore, greater resistance. Glutenins are complex proteins composed of chains of Amino acids bound together through peptide bonds and disulfide bridges.

Their unique and complex structure is the result of a combination of protein subunits and chemical bonds that give stability and flexibility. In this case we are talking about **polymeric proteins**, formed by aggregate proteins linked by intermolecular disulfide bonds; they have variable sizes ranging **from about 500,000 to over 10 million Da**. After the reduction of disulfide bonds, the subunits Glutenin results show a solubility in aqueous alcohols similar to that of gliadins.
Based on molecular weight, glutenin subunits can be classified into **high molecular weight glutenin (HMW-GS) and low molecular weight glutenin (LMW-GS)** (Brandner et al., 2019). The formation of the gluten protein network, facilitated largely by high molecular weight glutenin subunits (HMW-GS), is crucial for improving the quality of grain processing and the properties of the finished product. High molecular weight subunits have a weight ranging **between 80,000 and 120,000 Da**. The low molecular weight subunits are smaller, with a molecular weight **between 30,000 and 50,000 Da**.

Molecular Composition of Glutenin

Like gliadins, glutenins are proteins that cannot be identified by a general chemical formula. Glutenins are characterized by a higher presence in the amino acid sequence of **cysteine**. These are important because a **disulfide bridge** (-S-S-) can form between two cysteine residues, which stabilises the three-dimensional structure of the protein.

2.1.2 Disorders related to gluten

Gluten ingestion has been associated with a range of clinical disorders, collectively known as **gluten-related disorders**, which are gradually emerging as an epidemiologically relevant phenomenon. In addition to celiac disease, the spectrum of these disorders includes **wheat allergy** and **non-celiac gluten sensitivity (NCGS)** (Al-Toma et al., United European Gastroenterol J. 2019).

1. Celiac disease (CD): celiac disease is a **chronic autoimmune disease** that affects only the genetically predisposed subjects, which, in front of gluten intake, produce antibodies that go to destroy the delicate intestinal villi, structures responsible for nutrient and mineral absorption. This damage results in severe cases of malabsorption syndrome and malnutrition.

2. Wheat allergy (WA): WA is another type of adverse immunological reaction to the proteins contained in wheat and related cereals, with different clinical presentations depending on the route of exposure. In this context, **immunoglobulins E (IgE)** mediate the inflammatory response to several allergenic proteins, including gliadin and high-protein glutenins molecular weight (Elli et al., World J Gastroenterol 2015).

3. Non-celiac gluten sensitivity (NCGS): NCGS is a **non-autoimmune and non-allergic** condition characterized by symptoms similar to irritable bowel syndrome (IBS) and extraintestinal manifestations that occur within hours or days of ingesting gluten-containing foods. No damage to the intestinal mucosa. Symptoms improve rapidly with gluten suspension and recur soon after reintroduction.

Celiac disease and NCGS are often confused, but they are two distinct diseases. In the following table (Humanitas Care, My Personal Trainer) we see the main differences between them.

FEATURES	CELIAC DISEASE	NCGS
MECHANISM	Autoimmune, damage to intestinal villi	Non-autoimmune and non-allergic response
INTESTINAL DAMAGE	Present	Absent
DIAGNOSTIC TESTS	Serological antibodies, biopsy	Diagnosis of exclusion
SYMPTOMS	**Gastrointestinal** (chronic diarrhea, swelling, abdominal pain, weight loss, vomiting), **systemic** (anemia, osteoporosis, chronic fatigue, infertility, herpetiform dermatitis), **neurological** (headache, "mental fog", peripheral neuropathy, ataxia)	**Similar to celiac disease**: swelling, abdominal pain, diarrhea or constipation, fatigue, headache, muscle or joint pain, "mental fog"
TREATMENT	Gluten-free diet (strict)	Gluten-free diet (less strict)
INCIDENCE	1% of the Italian population	1-6% of the Italian population

2.2 Industrial use of gluten

As seen, the use of gluten extends not only to food products but also in various industrial sectors, because of its ability to **give elasticity and structure**.
Traces of gluten can be found in:

- **Glues**: In the past, gluten was used as a binder in glues for paper and other materials.
- **Cosmetics and skin care products**: Some products use gluten derivatives as emulsifiers, binders and moisturizers.
- **Supplements and medical products**: Some supplements may contain gluten as an additive or binder.

2.2.1 Protein hydrolysates and starch derivatives

Protein hydrolysates and starch derivatives are commonly used in the food and cosmetics industry to **improve consistency, stability and functional properties of products**. Here is an overview of the two ingredients and their main characteristics.

PROTEIN HYDROLYSATES

Protein hydrolysates are obtained by a process of hydrolysis, which splits proteins into smaller fragments (peptides and amino acids). This process makes them **more soluble and functionally useful**, for example to improve hydration and stability. There are various methods for hydrolysing gluten, including chemical, biochemical and physical approaches, which lead to highly variable **grain hydrolysed protein (HWP)** preparations. In most cases, the functional properties of HWPs are described as **emulsifiers** or **foaming** agents.

Main applications:
Emollients and moisturizers: Used to maintain the hydration of skin and hair.
Stabilizers and texturizers: They improve the consistency and stability of cosmetic products.

Hydrolysis affects the immunoreactivity of wheat proteins; for example, allergic reactions to soaps and cosmetics containing HWP have been reported. Some of the relevant immunoreactive epitopes (part of the molecule binding antibodies) are already present in native grain protein aggregations and are exposed via hydrolysis, but are not destroyed. In addition, **new epitopes** can be created through the hydrolysis process. The **increased solubility** of HWPs and the route of exposure also affect the immunoreactivity of HWPs compared to the native form.

*The degree and type of hydrolysis play an important role, as they can influence transport through natural barriers, such as the **epithelium of the small intestine** or **skin**.*

Transdermal exposure to HWP can activate immune pathways, leading to sensitisation and allergic reactions. Studies in mice suggest that HWPs have a similar potential to gluten to cause allergic reactions, although their allergenicity may vary. Also, given their smaller size, hydrolysed proteins like HWPs show **increased transdermal permeability**, which could potentially trigger **allergic and immune responses** (Gabler et al., Biomolecules 2020).

*These results indicate that the **use of HWP in products applied to the skin may pose an allergenic risk**, especially for people sensitive to wheat or gluten (Gabler et al., Biomolecules 2020).*

However, studies have shown that hydrolysates with an average molecular weight of about **3,000 Da or below** do not present any potential to cause hypersensitivity reactions in sensitized individuals. In fact, a peptide (that is a sequence of amino acids much shorter than a protein) must be at least 30 amino acids long (i.e., with a molecular weight of about 3,570 Da, assuming an average weight of 119 Da per amino acid) to possess the two IgE binding epitopes needed to trigger type 1 hypersensitivity reactions, that is allergic reactions.
As a result, polypeptides with molecular weights below 3,000 **do not possess the required characteristics to induce type 1 hypersensitivity reactions** (Burnett et al., SAGE journals 2018).

STARCH DERIVATIVES

Starch derivatives are obtained by chemically or physically modifying the starch to improve specific properties. They are mainly used for:

Thickening: Improve consistency of products.
Stabilize: Contribute to the stability of cosmetic formulas.

All starches derived from raw materials naturally free of gluten (corn, potato, rice) are suitable for celiac consumers if they bear the words "gluten-free" because, due to the promiscuity of many production facilities, they could be at risk of contamination. Wheat starch, whether modified or not, is **not suitable for celiac** unless it is glutinated starch. Remember that for years the law requires, for products containing starch derived from wheat, to clearly state the botanical origin on the label (Italian Celiac Association www.celiachia.it).
In the cosmetics sector, it is therefore important to choose gluten-free starch derivatives for products intended for sensitive consumers.
In summary, protein hydrolysates and starch derivatives are processed ingredients to improve their functional properties, but in gluten-free contexts it is essential to monitor their origin and production process to **avoid contamination**.

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Celiachia

2.3 Where gluten-free is used today

The concept of "gluten-free" was born mainly in the food sector, as a response to the growing need for safe products for people with celiac disease or gluten sensitivity. Over time, awareness of the need to avoid gluten has spread to other areas.
Now it is found in:

FOOD SECTOR

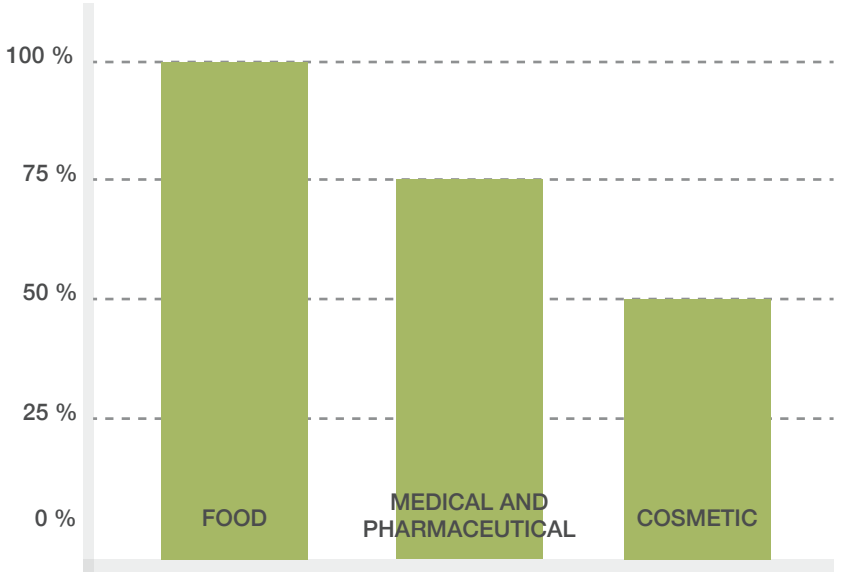
The "gluten-free" is a well-established practice and regulated by specific regulations to **ensure the safety** of those who suffer from celiac disease or gluten sensitivity. Certifications ensure **transparency and reliability** in products.
The market for gluten-free foods is **constantly expanding**. According to a report by Mordor Intelligence, the Italian market for gluten-free food and beverages is expected to record an **annual compound growth** rate (CAGR) of **8.5%** in the period 2024-2029.

PHARMACEUTICAL SECTOR

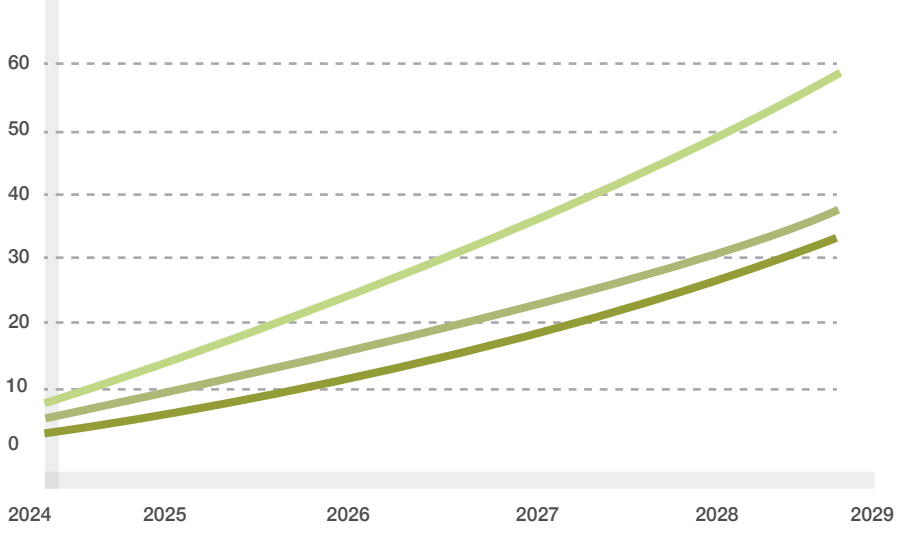
In the pharmaceutical sector, attention to **gluten-free products has increased**, especially to ensure the **safety** of coeliac patients. However, specific data on the evolution of the gluten-free pharmaceutical market is limited. It is known that companies are gradually adopting practices to **eliminate gluten from medicines**, responding to the growing demand for products safe for celiac patients.

COSMETIC SECTOR

The "gluten-free" is also emerging in cosmetics, especially for **lip products**, where the risk of ingestion is higher, and eyes, whose delicate mucous membranes show a rapid and effective absorption. Despite the absence of uniform regulations, the demand for clear labels and certifications is growing, pushing the industry to recognize "gluten-free" as a future standard.



The graph shows the extent of gluten-free in the sectors previously analysed.
(Mordor Intelligence; Manageritalia)



The graph shows the expected evolution of the gluten-free market in the food, pharmaceutical and cosmetics sectors from 2024 to 2029. The lines show percentage growth in each sector, showing strong expansion in the food market, followed by pharmaceuticals and cosmetics.
(Mordor Intelligence; Manageritalia)

03 THE HISTORY OF GLUTEN

3.1 Origins and Discovery of Gluten

The history of gluten dates back to antiquity, but understanding what gluten was and its specific properties is a relatively recent achievement.

Antiquity

The cultivation of wheat and other cereals dates back to about **10,000 years ago**, when the first agricultural societies in Mesopotamia began to develop agriculture.
With the cultivation of wheat, it was discovered that by kneading **flour with water** you obtained an elastic mass, useful for the production of bread and other foods.
Although at the time it was not understood what gluten was, the **elastic and cohesive properties** of wheat flour were appreciated and became a **fundamental feature for baked goods such as bread**.

Origin of the word "gluten"

The term "gluten" comes from the **Latin** *gluten*, which means "**glue**" or "**bond**", a name suitable to describe the ability of this substance to bind and give elasticity to the dough.
The **first descriptions** of gluten as a substance separated from flour date back to the **18th century**, when chemists began to isolate the components of wheat flour and discovered this particular protein.

First Applications and Scientific Studies

In the **18th century**, European scientists began to study the **composition of flour** more closely and discovered that the elasticity of the dough was due to the presence of a complex protein.
This discovery led to a **better understanding of the properties of gluten** and its importance in baking processes.

During the **19th century**, with the evolution of chemistry, gluten became the **object of extensive study** and it was discovered that it was composed mainly of two proteins: gliadin and glutenin.

Spread of wheat

The spread of wheat and other gluten-containing cereals is closely linked to the growth of agriculture and the spread of the Western diet.

Already in **ancient Egypt** (3,900 BC) and in **Greece** (500 BC) these cereals were **basic crops** necessary to produce bread and beer. The production of wheat was so important that it was also considered a symbol of prosperity and strength.

The **Romans** (200 AD) brought the cultivation of wheat and cereals to many regions of **Europe**, along with bread making techniques and wheat growing. The spread of cereal cultivation increased the exposure of populations to gluten.

With the **Industrial Revolution and the advent of machines** (1.750), **refined flour** production and **baking** became more efficient and accessible. This led to an even greater consumption of gluten-containing cereals, mainly from wheat, in food products.
The cultivation of wheat spread to the **American continent**, where it became an important crop for the agro-food industry.

3.2 Evolution of Gluten Perception

First Observations and Medical Studies (19th - 20th century)

Celiac disease was first identified in the **1st century A.D.** by the Greek physician **Aretheus of Cappadocia**, who described an intestinal condition with symptoms similar to those we associate today with celiac disease. However, it was not until the **19th century** that the condition was **recognized as a disease**.

In the 1940s, the Dutch doctor **Willem-Karel Dicke** discovered a **connection** between wheat consumption and the symptoms of celiac disease.

During the **Second World War**, Dicke noticed that celiac patients showed improvements during grain shortages, leading to the discovery that gluten was responsible for the symptoms of the disease.

Diagnosis of Celiac Disease and Gluten Sensitivity

With the improvement of diagnostic techniques in the **50s and 60s**, it became possible to identify coeliac patients accurately. This led to an increase in diagnoses and a greater focus on gluten as a trigger.

In **recent decades**, in addition to celiac disease, **non-celiac gluten sensitivity** has also been recognized.

3.3 History of the use of gluten in cosmetics

The use of gluten and its derivatives in cosmetics dates back to the 1960s and 1970s, when the potential of vegetable proteins, including wheat derivatives, for improving cosmetic formulations was first understood.

Introduction in the 1960s and 1970s

In the 1960s, the cosmetics industry was looking for **natural ingredients** that could **improve consistency, hydration and stability** of products. Wheat and gluten derivatives became popular for their thickening and moisturizing properties.

Wheat **protein hydrolysates**, in particular, began to be used in **hair and skin products** due to their ability to attract and retain moisture, improving the softness and elasticity of the skin and hair.

Widespread use of Wheat and Gluten Hydrolysates in the 1980s and 1990s

During the 1980s and 1990s, gluten and its derivatives **were common ingredients in various cosmetic products** such as shampoos, balms, body lotions and face creams, for their nourishing and moisturizing properties.

Gluten derivatives, such as hydrolyzed gliadin and hydrolyzed wheat starch, were often used to **improve product texture and stability**. Hydrolysed gliadin, in particular, was shown to be effective as a film-forming agent, forming a protective layer on skin and hair.

3.3.1 Functional properties of gluten in cosmetics

Gluten derivatives have been praised for several cosmetic properties that help improve the appearance and feel of the finished product. Among the functional properties appreciated were:

Film forming action

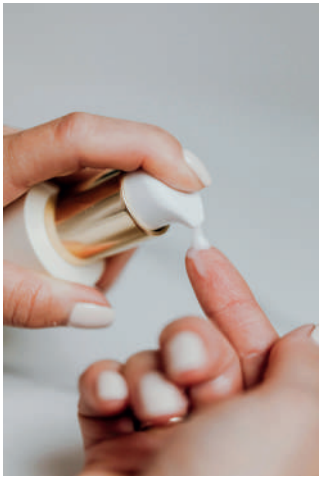
They form a light protective film on the skin and hair, which helps to retain moisture and protect against external aggressions.

Hydration and nutrition

Wheat and gliadin protein hydrolysates contain amino acids that improve skin hydration, promoting a soft and smooth skin.

Elasticity and body

In hair products, gluten derivatives help to give more body, volume and elasticity, making the hair easier to comb and shine.



These properties made gluten and its derivatives **popular ingredients in cosmetics**, especially for products intended for the care of **skin** and **hair**.

3.4 From 2000 onwards

In the 2000s, with the rise of celiac disease diagnoses and the increasing focus on gluten sensitivity, the perception of gluten-based ingredients in cosmetics began to change.

1. Increasing Awareness of Celiac Disease and Gluten Sensitivity

The **diagnosis of celiac disease** has increased significantly since 2000, leading consumers to pay **more attention to the ingredients** of products not only food but also cosmetics.

Consumers with gluten sensitivity began to worry that gluten-containing cosmetics, especially lip and eye products, could cause reactions if accidentally ingested or transferred from hands to mouth or eyes.

2. Beginning of the Application for Gluten-Free Cosmetics

With the **increase in demand** for gluten-free foods, consumer interest in gluten-free products also extended to cosmetics. Although gluten is not absorbed through intact skin, the risk of **accidental ingestion** created a new demand for gluten-free cosmetics.

3. Gradual Removal of Gluten from Cosmetics and Beginning of Gluten-Free Certifications

Faced with growing consumer demand, many cosmetic companies have started to **voluntarily eliminate gluten** from their formulations, especially for products used near the mouth and eyes.

The **first gluten-free certifications** for cosmetics were introduced by organizations such as the Gluten-Free Certification Organization (GFCO), which began certifying cosmetic products without gluten. This marked a major change, as companies could now offer an additional guarantee to gluten-sensitive consumers.

4. Future Perspectives

Interest in gluten and gluten-free products continues to grow, as **consumers become more aware** of the ingredients they use not only in food but also in personal care products. Over time, it is likely that more and **more companies** will offer **certified gluten-free** cosmetics and beauty products, as is already the case for the food industry.

04 COSMETICS DEBATE AND GLUTEN

4.1 Review of the Main Studies on Gluten in Cosmetics

The issue of gluten in cosmetics has attracted the attention of consumers and professionals. Although gluten is not absorbed through intact skin, doubts and concerns remain about specific conditions such as accidental ingestion or application to damaged and/or particularly sensitive skin.
Scientific research has highlighted some key aspects that deserve attention:

ABSORPTION OF GLUTEN BY THE SKIN

Studies by institutions such as the Gluten Intolerance Group have shown that the particles of gluten in cosmetics are too large to be absorbed through intact skin. However, in the case of **damaged skin**, such as lesions or dermatitis, some **hydrolysed gluten fractions** may interact with the skin system, causing **potential irritation or sensitisation**.

Children and **individuals with particularly reactive skin** may be more susceptible to adverse reactions from gluten-containing cosmetics, making greater care in the choice of products necessary. A study published in the journal "Journal of Clinical and Aesthetic Dermatology" analysed gluten-containing cosmetics and concluded that transcutaneous absorption of gluten is unlikely, but that people with gluten sensitivity should still avoid products containing gluten to avoid potential risks. Other studies have suggested that people with gluten sensitivity may show skin symptoms, such as itching and irritation, following the use of cosmetics containing gluten.

ACCIDENTAL INGESTION THROUGH COSMETICS

The most critical items for accidental ingestion of gluten are **lipsticks**, **lip balms** and **eye products** (such as makeup or eyelash laminating products). The first are in direct contact with the lips and can therefore be swallowed, even in small quantities, during daily use. The latter, although they appear to be less "at risk", may come into contact with the mucous membranes or transfer onto the hands, with the risk of cross-contamination. Even a small amount of gluten accidentally ingested can trigger gastrointestinal symptoms in sensitive gluten patients, underlining the need for gluten-free solutions for this category of products.

SKIN REACTIONS AND INTOLERANCES

Many coeliac patients have reported skin reactions, such as irritation or dermatitis, after using cosmetics containing gluten.

Arguments of the Cosmetics Sector (Kosmetica News; Biorius; Glutenfree Safe; Italian Celiac Association) not to be underestimated:

PROS GLUTEN	CONS GLUTEN
Functional Properties: Companies defend the use of gluten in cosmetics for its emollient, moisturizing and stabilising properties. **Low Probability of Reactions**: It is pointed out that the risk of Accidental ingestion is minimal if the products are used correctly.	**Safety of sensitive consumers**: celiac associations and consumers demand gluten-free products to avoid unnecessary risks. **Commercial value of gluten-free products**: Gluten-free cosmetics are perceived as safer and more transparent, improving consumer confidence.

4.2 Consumer Perceptions and Development of Gluten-Free Products

CONSUMER PERCEPTIONS

Growing Demand for Transparency

Consumers want to know what is in the products they use. The words "**gluten-free**" on the labels are a **reassuring guarantee**. The choice of gluten-free cosmetics is not limited to medical reasons: many people opt for this solution for **greater peace of mind** or **personal philosophy**.

Concerns about specific products

- **Lipsticks and Lip balms** that can be easily swallowed during daily use.
- **Products for eyelashes and eyebrows** that may come into contact with the mucous membranes of the eyes and increase the risk of transfer and accidental ingestion.

Preference for Certified Products

Consumers prefer products with reliable certifications such as the GFCO brand, which guarantees safety.

DEVELOPMENT OF GLUTEN-FREE PRODUCTS

Industry's response

The cosmetics industry has responded promptly to this growing demand. Many brands have voluntarily eliminated gluten from their formulations, even in products with a minimal risk of ingestion or sensitisation. This change is not only a response to market needs, but also a strategy for distinguishing in an increasingly competitive sector.

Focus on Sensitive Segments

More and more companies are developing **gluten-free product lines certified by accredited bodies** dedicated to those who suffer from gluten sensitivity or reactive skin. These products are particularly appreciated by professionals in the aesthetic sector, who work closely with customers with specific needs.

05 GLUTEN-FREE: DRUGS AND COSMETICS

5.1 Difference between gluten-free in drugs and cosmetics

Gluten can be found in both cosmetics and pharmaceuticals, but its role and regulation differ greatly between the two sectors.
In **drugs**, gluten is sometimes used as an excipient, binder or coating agent, with functions of stabilization and solubility improvement, especially in oral drugs. Here, **gluten exposure is direct and systemic**, making the safety of coeliac patients a top priority.

Even **small amounts** of gluten (less than 20 ppm) can trigger autoimmune responses in celiac patients, which is why the **FDA requires clear and specific labelling for gluten-free drugs** in the US.
The **regulations** on **drugs** are therefore **strict** and require that products be subjected to **stringent tests** and **international standards**.
For **GFCO**-certified products, the limit is even more stringent (**10 ppm**).
In Europe, regulations are less stringent and vary between countries, reflecting differences in risk perception and safety requirements.

In **cosmetics, gluten exposure is predominantly local** and its presence does not pose a risk to intact skin. However, in products intended for **lips, eyes or mucosal areas**, the risk of accidental ingestion or indirect transfer may be relevant for people with gluten sensitivity.
There are no regulations for gluten-free cosmetics at the **European level**. Companies can choose whether to formulate products with or without gluten; the latter case represents an added value, but in the absence of an internationally accredited certification, **it is absolutely forbidden for the company to declare its products as gluten-free**.

In Europe, there are no recognised bodies or associations that can issue the gluten-free certification for cosmetic products.

For this reason, **Kalentin** has turned to an internationally recognized **American association**, the GFCO. Moreover, the latter does not have a specific protocol for cosmetics, therefore it is necessary to adhere to the standards provided for the food sector, much stricter and more stringent than those that would require the cosmetic sector.
Kalentin's **commitment** and **dedication** to **quality**, **transparency** and **fairness** towards consumers is evident.

	DRUGS	COSMETICS
Presence of gluten	May be present as an excipient, binder or coating agent.	**Can be used as an ingredient for emollient and stabilising properties.**
Exposure	**Direct and systemic**, especially in oral drugs.	**Local**; only relevant for products intended for lips, eyes or mucous
Risks	Traces of gluten (<20 ppm) can also trigger an autoimmune response.	Minimal risk for intact skin, but accidental ingestion is relevant for some areas.
Regulations	**Mandatory:** Declaration of potentially harmful ingredients.	**Not available in Europe: voluntary but CERTIFIED adherence to gluten-free.**
Gluten-free standards	**FDA: Limit of 20 ppm.**	**No obligation; some brands follow GFCO standards (10 ppm) as added value.**
Tests and checks	**Rigorous tests to monitor gluten quantity, ensure safety and avoid contamination.**	**Not mandatory and not regulated at European level; depending on the association issuing the certification.**
How to use	**Intended for ingestion, especially oral drugs.**	**Designed for external use; risk associated with lip and eye products.**

06 REGULATIONS AND STANDARDS

6.1 European Regulations on Gluten-free Cosmetics

In Europe, cosmetics are regulated by **Regulation (EC) n. 1223/2009**, which guarantees the **safety of cosmetic products** but does not include specific provisions for gluten-free ones.

INCI
International Nomenclature of Cosmetic Ingredients

Each product must be safe for the consumer under normal and foreseeable conditions of use, and all **ingredients** must be declared with their **INCI** (International Nomenclature of Cosmetic Ingredients) name. Ingredients derived from gluten-containing cereals, such as Triticum Vulgare (Wheat) **Protein** or **Hordeum Vulgare Extract** (Barley Extract), must be clearly identified.

Claims as "gluten-free" must meet six basic criteria:

Veracity: Statements must be true and supported by scientific evidence or specific tests.
Evidence support: Data demonstrating the efficacy of the product, such as clinical trials or instrumental tests, must be available.
Honesty: The information provided should be honest and not exaggerated.
Fairness: *Claims* must be fairly formulated and not denigrate competing products.
Clear information: The claims must be understandable and accessible to the average consumer.
Informed decisions: *Claims* should enable the consumer to make an informed purchasing decision.

Although gluten-free certification is not mandatory, many European companies choose to **adopt it voluntarily** to reassure sensitive consumers and increase confidence in the brand, with bodies such as the **GFCO (Gluten-Free Certification Organization)** They are also beginning to spread in Europe.

6.2 American Regulations on Gluten-free Cosmetics

In the US, cosmetics are regulated by the **FDA** (Food and Drug Administration), which deals with safety and labelling. Ingredients that may contain gluten, such as wheat proteins or cereal extracts, must be clearly declared, but there is no maximum limit imposed for gluten in cosmetics, as they are not intended for ingestion.
The *claim* "*gluten-free*" can be used, but it must be truthful and in accordance with the ***Fair Packaging and Labeling Act***, guaranteeing transparency for the consumer.

The **GFCO**, the leading gluten-free certification organisation, requires products to contain **less than 10 ppm of gluten**, a stricter limit than the 20 ppm adopted for food in Europe. This certification is particularly popular for cosmetics intended for **sensitive areas such as lips and eyes**, where the safety of coeliac consumers is a growing priority.

6.3 Global Gluten-Free Standards

Outside of Europe and the US, gluten-free regulation and certification in cosmetics is gaining popularity in markets such as **Canada**, **Australia** and some regions of **Asia-Pacific**.

In **Australia**, for example, consumer awareness is very high, and gluten-free certification is increasingly in demand, although not mandatory.
In **Canada**, regulations require transparent labelling, but certification of gluten-free cosmetics is still voluntary.
In the **Asian markets**, interest in gluten-free products is growing, although it remains relatively low compared to other regions.

The spread of GFCO certification in these areas, along with other local certifications, reflects a shift in consumer preferences towards products perceived as safe and transparent.

6.3.1 Global Gluten-Free Market: Trends and Prospects

The **global market** for gluten-free products has **grown significantly** in recent years, extending beyond the food sector to include the pharmaceutical and cosmetics sectors. Below is a detailed overview of growth and trends in each of these sectors.

1. FOOD SECTOR

The food segment represents the largest portion of the gluten-free market. According to a report by Grand View Research, the global gluten-free food market has been estimated at **$6.7 billion** in 2022 and is expected to reach $14 billion by 2031, with a compound **annual growth rate (CAGR) 10%** during the period.

2. PHARMACEUTICAL SECTOR

In the pharmaceutical sector, attention is increasingly being paid to gluten-free products, especially for **oral drugs** intended for celiac patients. Although specific data on the growth of the gluten-free pharmaceutical market is limited, there is a **growing demand** for certified gluten-free medicines, in line with increased consumer awareness about celiac disease and gluten sensitivities.

3. COSMETICS INDUSTRY

The cosmetics industry is seeing a growing demand for gluten-free products, especially for products in the lip and eye area where accidental ingestion is most likely. According to a report by The Insight Partners, the cosmetics sector, influenced by the food sector, is expected to show **significant growth** in the period 2023-2031, with a CAGR of **8%**.

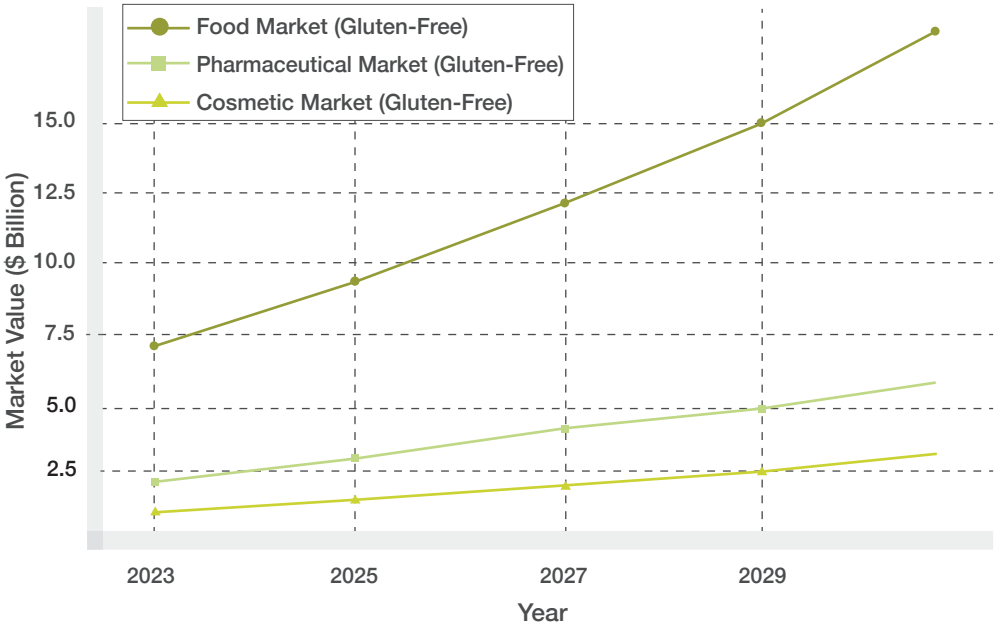
Growth drivers

Increased Celiac Disease Diagnosis and Gluten Sensitivity: Increased awareness and improved diagnostic techniques have led to an increase in diagnoses, increasing the demand for gluten-free products.

Consumer awareness: Consumers are increasingly aware of the ingredients in the products they use, preferring options perceived as safer and healthier.

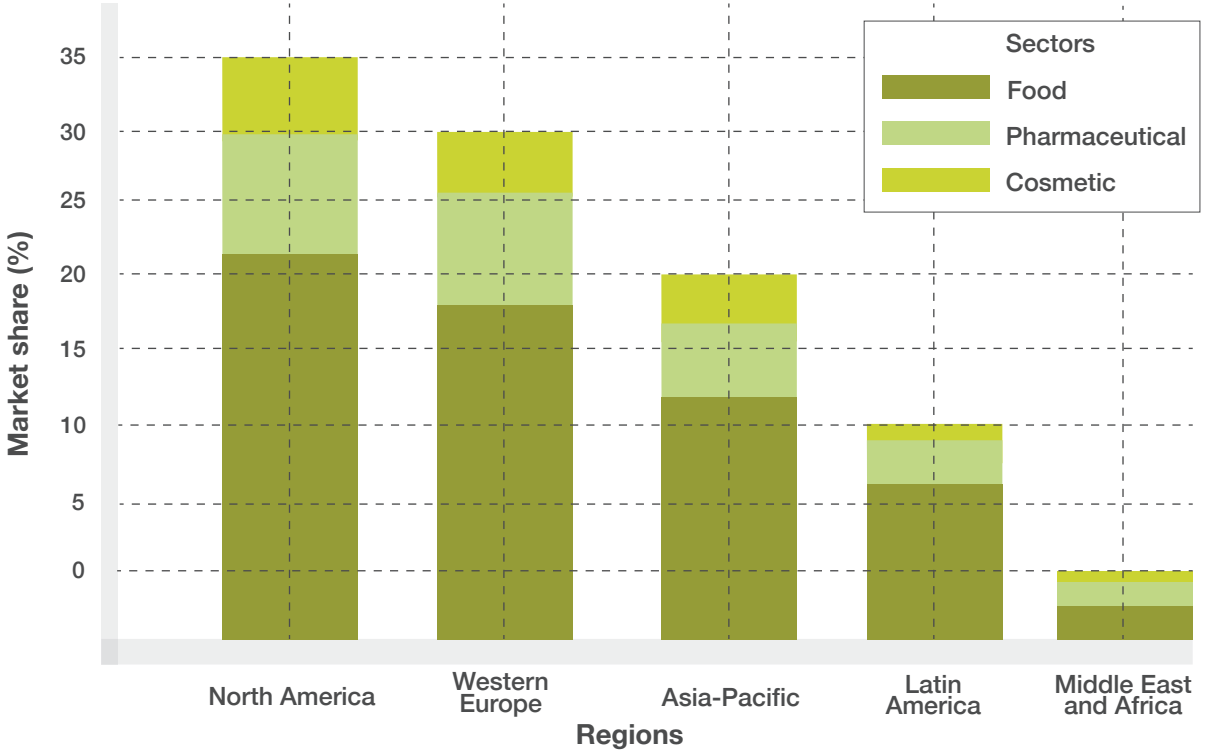
Product Innovation and Offering: Companies are getting accredited to invest in research and development to offer gluten-free products that do not compromise quality or effectiveness, expanding the range available on the market.

Global Gluten Free Market Growth in the Food, Pharmaceutical and Cosmetics Sectors (2023-2031)



The graph represents the expected growth of the global gluten-free market in the food, pharmaceutical and cosmetics sectors from 2023 to 2031. Each line shows the estimated market value in billions of dollars (Feeding; The Insight Partners).

Global Distribution of Gluten-Free Certified Products by Sector and Region



The bar graph illustrates the demand for gluten-free products in different regions of the world. Inside there is a subdivision regarding the impact of the 3 different sectors: pharmaceutical, food and cosmetics (Grand View Research; Statista; Mordor Intelligence; The Insight Partners).

6.4 The Importance of Gluten-Free Certification for Kalentin

For **Kalentin**, which is aimed at the professional sector, gluten-free regulations and certifications are a strategic pillar. The **GFCO certification**, with its **strict 10 ppm standards**, allows the company to stand out as a leader in offering exclusive and high quality products.

For Kalentin, **gluten-free** is not just a claim, but a **concrete commitment** to the professionals of the aesthetic sector and their customers. This approach allows access to international markets, particularly in the US and Europe, strengthening consumer confidence and positioning the brand as synonymous with innovation and responsibility.

07 CASES OF PROBLEMS WITH THE USE OF COSMETICS CONTAINING GLUTEN

7.1 Analysis of Causes and Implications

Possible Causes of Gluten-Related Problems in Cosmetics:

1. Damaged or sensitive skin:
In the presence of **cuts, abrasions or atopic dermatitis**, the skin may become more permeable. Although gluten is a large protein, hydrolysed fractions (such as hydrolyzed gliadin) may come into contact with the damaged skin system.

2. Cross contamination:
In some cases, the reactions may be caused by **cross-contamination** with allergens or other irritants during production.

3. Interaction with Other Ingredients:
Some cosmetic ingredients, when combined with gluten derivatives, may **increase the risk of irritation**, especially in people with a predisposition to skin reactions. Some substances are also able to **alter the normal lamellar structure of the stratum corneum** and the overcoming of this layer also depends on the integrity of the skin and the contact time. One of these is for example oleic acid (cosmetics, personal care products), others are terpenes and sodium lauryl sulfate a surfactant used in shampoos, shaving foams, toothpastes, for its foaming effects (Yamane et al., International Journal of Pharmaceutics 1995).

4. Accidental Ingestion:
Products such as **lipsticks and lip balms** pose a risk of accidental gluten ingestion, especially for coeliac consumers. Even small amounts ingested can trigger gastrointestinal symptoms.

7.2 Examples of Case Studies and Reported Problems

CASE STUDY 1: Contact Allergic Dermatitis Caused by Hydrolyzed Wheat Proteins

An article published in "*Kosmetica News"* highlighted cases of allergic contact dermatitis following the use of cosmetics containing hydrolysed wheat proteins. These proteins, used for their moisturizing and film-forming properties, can cause allergic reactions in sensitized individuals. In particular, cases of allergic conjunctivitis and eyelid dermatitis have been reported following the application of mascara and eyeshadows containing these proteins.

Source: website Oculista Italiano

CASE STUDY 2: Allergic Ocular Reactions to Gluten-Containing Cosmetics

An article on "*Medicioculisti.it"* discussed eye reactions, such as itching, redness and swelling of the eyelids, following the use of cosmetics containing wheat derivatives. Although gluten is not commonly absorbed through intact skin, the application of cosmetics in the periocular area can lead to allergic reactions in predisposed individuals. It has been observed that preservatives such as methylisothiazolinone, which are often present in these products, may contribute to allergic eye reactions.

Source: website Medici oculisti

CASE STUDY 3: Gluten Allergy and Ocular Reactions

An article in "*Medicina 360"* described cases where individuals with gluten allergy have exhibited eye symptoms, such as itching and tearing, after using cosmetics containing gluten. Although gluten allergy is mainly associated with gastrointestinal symptoms, skin exposure, especially in sensitive areas such as the eyes, can cause reactions in sensitized people.

Source: website Medicina 360

08 ASSOCIATION BETWEEN GLUTEN-FREE AND VEGANISM

8.1 Why some gluten-free products are also vegan

Connections between Gluten-Free and Veganism

1. Overlapping philosophies:
Gluten-free and veganism often share **values related to health**, **sustainability** and **ethics**.
Both respond to a growing desire of consumers to use **more transparent products** without potentially harmful or ethically controversial ingredients.

2. Market demand:
Consumers who choose gluten-free products tend to prefer vegan products as well, since both characteristics represent **informed choices** that respect individual needs.
In the cosmetics sector, the "***The Vegan Society***" brand is perceived as a synonym for quality and respect for nature.

3. Health and Skin Benefits:
Vegan and gluten-free products focus on **simpler**, **more natural ingredients**, eliminating potential allergens and irritants, making them ideal for sensitive skin.

8.1.1 The Vegan Society: A Benchmark for Vegan Certifications

The Vegan Society is the oldest and most respected organization in the world dedicated to promoting the vegan lifestyle. Founded in **1944**, is the leading authority for vegan certification of products and services. Its certification represents a **rigorous standard** that goes beyond the simple use of the "vegan" claim on a label or other strange symbols and not supported by controls and certifications.

The Significance of The Vegan Society Certification

Process Scrupulous:
Unlike a simple "vegan" claim, very common but often not supported by accredited certifications, registering a product with The Vegan Society involves an in-depth check on:

Ingredients: All ingredients must be free of animal derivatives or animal by-products, including those used in minimal quantities.

Raw materials: The raw materials used in the formulations must also be completely free of animal derivatives.

Production Processes: the entire production chain is examined to ensure that there is no contamination with animal-based ingredients.

Animal Testing: Certified products must meet stringent standards against animal testing at all stages of production.

Consumer Guarantee:
The "The Vegan Society" brand is not just a statement, but a globally recognized guarantee that reassures consumers on the ethics and transparency of products.

International Standards:
The Vegan Society logo is recognized worldwide as the symbol of excellence for vegan products. It is particularly popular in markets such as across Europe, the US, Canada and Australia where consumers are very attentive to certified standards.

8.2 The Market for Ethical Cosmetics: Gluten-Free and Vegan

MARKET TRENDS

Vegan and Gluten-Free Market Growth

The global market for vegan cosmetics is growing strongly, with **annual demand increasing by around 6-7%**.

Gluten-free cosmetics represent a rapidly expanding **niche**, with consumers choosing this option even in the absence of medical needs.

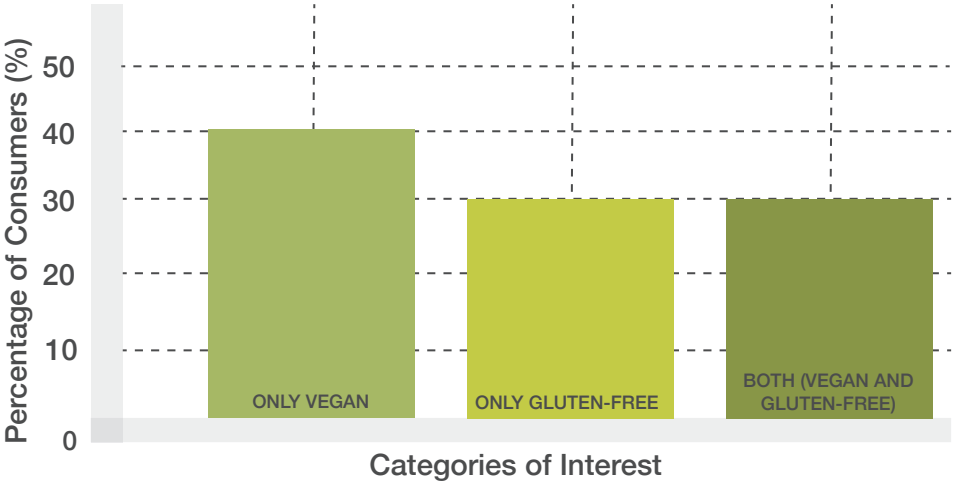
Overlapping of segments

A significant percentage of vegan cosmetics consumers are also interested in gluten-free, as both characteristics respond to a **desire for greater safety and awareness**.

Consumer target

Younger generations (Millennials and Gen Z): These groups are particularly concerned with ethical and sustainable consumption choices, favouring brands that offer vegan and gluten-free products.

Professionals in the beauty sector: the use of cosmetics with double certification (vegan "The Vegan Society" and gluten-free "GFCO") allows to attract a diverse clientele and attentive to their needs.



The graph shows the distribution of consumers interested in vegan, gluten-free or both (VEGANOK; Repubblica).

8.3 Ethics and Advantages of the Vegan and Gluten-Free Products Offer

ETHICAL IMPACT

Respect for Nature and Animal Welfare:
Vegan products (certified "The Vegan Society") demonstrate a commitment to avoid the use of animal derived ingredients and the use of animal testing.
Gluten-free cosmetics help to ensure safety for gluten sensitive people while respecting individual preferences.

Reduction of the environmental impact:
Vegan cosmetics (certified "The Vegan Society") often use more sustainable ingredients, reducing the ecological footprint of production.

COMMERCIAL IMPACT

Consumer Loyalty:
Offering products that combine the gluten-free and vegan characteristics (certified "The Vegan Society" and "GFCO") helps to create a relationship of trust with customers, who see the brand as attentive and respectful of their needs.

Differentiation in the market:
The combination of these certifications represents a competitive advantage that positions the brand as innovative and conscious.

Market expansion:
Vegan and gluten-free cosmetics (certified "The Vegan Society" and "GFCO") are particularly popular in growing markets, such as Europe, the United States, Canada and Australia, where consumers are more attentive to ethical and safety aspects.

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