

Mineral Sustainable  
Food Technology  
Innovation



Color Technology  
Natural Ingredients  
Safe & Cost - Effective  
Manufacturers,  
Consumers and Investors  
Trust Enhancement

# PUREWHITE™

**The 100% Natural-Mineral Ingredient  
Clean-Label Toxic-Free Solution**

## PUREWHITE™

Titanium Dioxide ( $\text{TiO}_2$ ) Substitute for  
Food Industry Applications

- 100% Mineral Ingredient Formula
- Titanium Free
- Preservative Free
- Clean Label
- Classified as Colour
- Nano-particles/materials Free

**ND Pharma**  
Making Life Better

## ND Pharma

With a current portfolio of +182.000 Product References, ND Pharma is one of the global leading suppliers to the pharmaceutical, healthcare and life sciences industries. Products and services span our customers' needs from research to final product manufacture. We intend to be a global leader of active pharmaceutical ingredients both chemically as well as biotechnologically.

Biopharmaceuticals are one of the key growth drivers of the pharmaceutical and biotechnology industries. We have strong capabilities in large and small molecules, peptides, amino acids and niche bioproducts which may play an important role in the development of novel medicines and healthcare products. ND Pharma is also a leader in microbial control providing innovative, chemistry-based and related solutions to destroy or to selectively inhibit the growth of harmful microorganisms. Its activities encompass the areas of water treatment, personal care, health and hygiene, industrial preservation, foods and crop protection, materials protection, and innovation formulas. In addition, ND Pharma through its partnerships, intends to be a global leader in cell-based research, endotoxin detection and cell therapy manufacturing. Furthermore, the company is a leading provider of value chemicals, specialty products and biotech ingredients to the nutrition and agro markets, pharmaceutical compounding and specialty nutrition and supplements industry are other targeted markets to us.

We act as CRO/CMO and Contract Product Development in different sectors and fields.

## Innovation

We bring innovative thinking to solve the challenges and demands that our customers face. ND Pharma made a commitment to make life better. Bringing ingredients, active principles and molecules to the varied industries we serve and sharing with our customers that passion we help to create, manufacture and deliver advanced solutions for their needs.

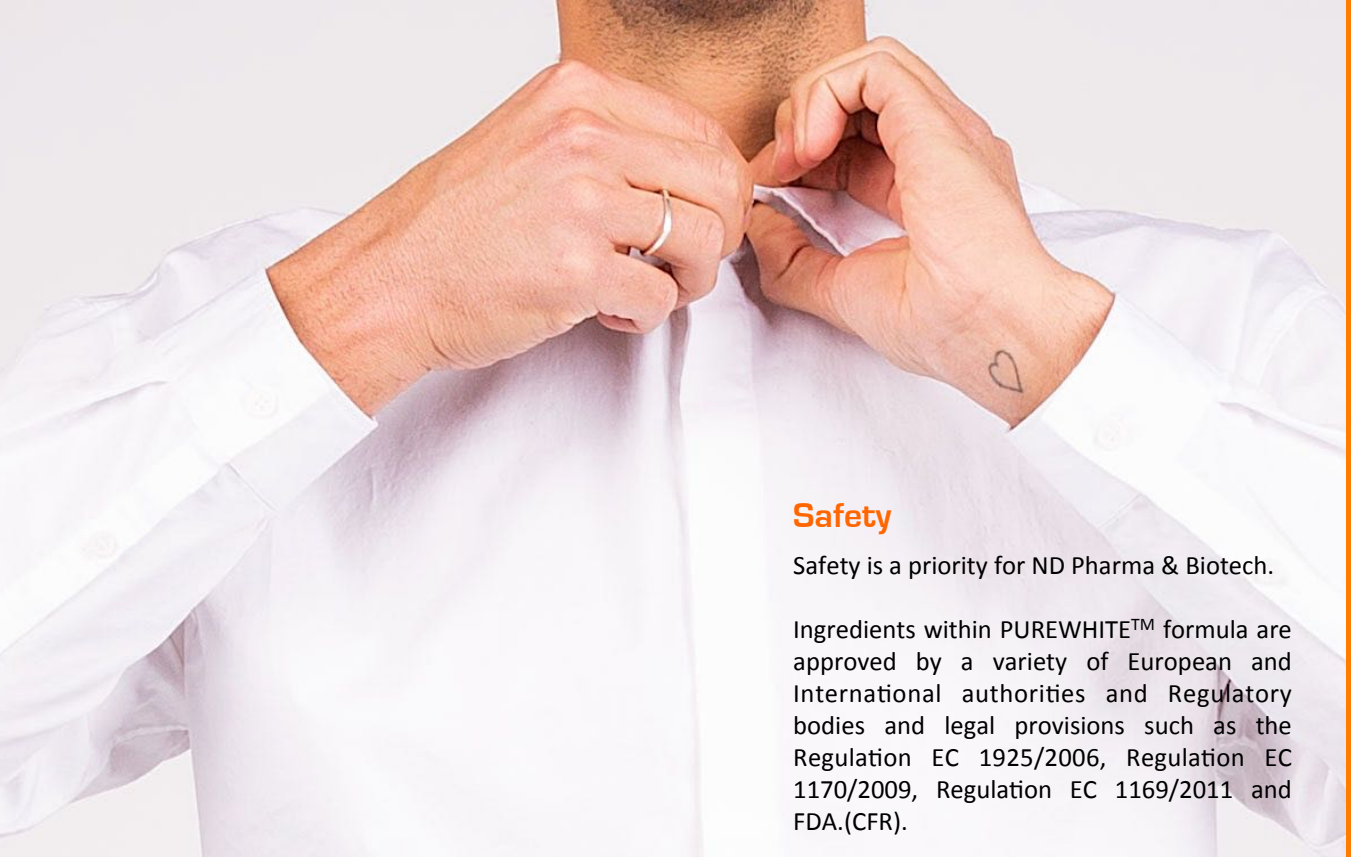
We offer to the markets and industries an agile organization with well-developed strengths as:

- Capacity to innovate products and processes
- Manufacturing flexibility and speed
- Agile supply chain organization
- Logistics support
- Deep knowledge of our client's processes
- HQ Products and Technical Service.



Proudly Operating in 5 continents, we give solutions wherever you and your business are.

Ask Us!



## Safety

Safety is a priority for ND Pharma & Biotech.

Ingredients within PUREWHITE™ formula are approved by a variety of European and International authorities and Regulatory bodies and legal provisions such as the Regulation EC 1925/2006, Regulation EC 1170/2009, Regulation EC 1169/2011 and FDA.(CFR).



## Packaging

PUREWHITE™ Line of Products are packed in a single format of 25 Kg bags for Industrial use.  
Other available formats, please ask in write to:  
[info@ndpharmabiotech.com](mailto:info@ndpharmabiotech.com)  
Ref: PUREWHITE™

## PUREWHITE™

PUREWHITE™ is a Mineral based technological formula designed to serve as substitute for Titanium Dioxide actually used as whitening agent and colouring additive ingredient.

## TiO<sub>2</sub> Future and UNCERTAINTY

### (TITANIUM DIOXIDE)

Since Dunkin' Brands eliminated titanium dioxide from their powdered donuts, a significant increase in the number of requests for titanium-free alternatives across many applications came up from manufactures.

Historically, candy and confectionary markets has been the leading users of titanium dioxide within food industry, but even this market has begun move away from TiO<sub>2</sub> as ingredient.

Since past years, there has been a decline in the percentage of new launches containing Titanium Dioxide as ingredient.

In the European Union, we have witnessed increased regulatory scrutiny of titanium dioxide. French Agency for Food, Environmental and Occupational Health and Safety (ANSES) submitted a proposal to European Chemicals Agency (ECHA) requesting the classification of TiO<sub>2</sub> to be changed to a 1A or B carcinogen.

## Production Technology

Our technological production system and the special formulation manufacturing method under a proprietary technology creates a unique product with a specific nature and characteristics that can bring advance and unparalleled properties to almost any toothpaste formulation. We use Calcium Carbonate an other Minerals and Mineral Salts and substances integrated by reaction under our proprietary system of Single Grain Fusion Technology assembling the resulting compound into a bonded molecule made by natural reaction, as an aggregation of primary natural mineral particles. Under controlled circumstances and environ we produce a final formula that brings the best ingredient's characteristics to PUREWHITE™



The best Technology and Process to create the best available product's line

## PUREWHITE™ IN FOOD APPLICATIONS

The discussion regarding the dangers and/or harmlessness of certain ingredients for food applications has become to a crucial question in the worldwide food industry. This subject concerns to all involved operators as foodstuff manufacturers, consumers and the respective national or international health regulatory bodies and surveillance authorities. An example of health debate is provided by the actual discussion around the use or rejection of titanium dioxide (TiO<sub>2</sub>) as an industrially produced color pigment for confectioneries and other food products.

This question also affect to the potential problem that could arise from titanium dioxide nanoparticles set free by products, and the eventual exposition to such particles and/or inhalation of named nanoparticles that could possibly be hazardous for human health.

In the case of titanium dioxide as a white pigment for foodstuffs, the risks are connected principally with the first aspect as far as the vast majority of such foodstuffs are consumed in the form of finished products. However, titanium dioxide, as a nanomaterial, has come under a cross-fire of criticisms and rejection (to the point that carcinogenic potential has been thoroughly studied and tested), throughout many countries in the past few years and its use as a coloring agent or pigment in food applications is now stamped as a problematic factor.

Studies have been carried out by universities and laboratories and, despite a remaining uncertainty as to the safety status of TiO<sub>2</sub>, potential toxicological and carcinogenic risks can not be excluded with enough security and sounded scientific support. In this scenario, foodstuffs manufacturers reacted to this potential threat by an intensified search for alternatives in order to keep on the safe side with regards to the components of their panned goods.

PUREWHITE™ is a whitening agent and formula created by ND Pharma & Biotech Co. as a development and production technology solution. Is specifically targeted onto the production of white or light-colored finished products where to replace titanium dioxide is a demand, no matter the reason to do it. It is a fine, white powder technological formula (made under our proprietary Single – Grain Fusion Technology System) which is based on 100% Natural Mineral Ingredients, (Minerals and Mineral substances).

As an example within the confectionary industry (or Candy as well), PUREWHITE™ can be integrated into the sugar solution and later spread onto the product centers or covers, or the conformation mass in order to stabilize them.

As a powder, is can to be mixed with crystal sugar prior to the cooking step and subsequently applied on such parts of products where this mix will be added. Its coating-like properties allow for a stable, brilliant whiteness and a smooth center surface. A low application dosage enables the formation of a uniformly white-colored coating layer, which in turn may intensify the final color of the surface.

The whitening effect of this undercoat is produced by the crystalline, light-reflecting structure of PUREWHITE™ that provides a bright surface whiteness already after the application of a few layers.

Moreover, through its natural components this whitening agent has the ability to improve the crunchiness of the coating and the texture of final products. Formula can be used in pan-coating processes either with or without cooking step or any other process.

Two main advantages are provided to manufacturers:

1. A finished product recipe without the problematic declaration of TiO<sub>2</sub>.
2. A surface with an appealing gloss along with a pure and shiny white color.

The clean label aspect of PUREWHITE™ is based on the fact that it is no industrial color pigment or synthetic coloring agent but it is a declaration-friendly, harmless and easy-to-apply whitening agent. Main ingredient of PUREWHITE™ is considered also a color by EU Regulations and other countries.

PUREWHITE™ provides optically perfect and pleasantly crunchy taste for a number of products. For certain manufacturers this new ingredient alternative is quite essential when it comes to use and declare natural color and/or coloring agent within foodstuffs in their pan-coating and/or any other processes, i.e. ingredient components without toxic risks for the end consumers.

We are specialized in the Health  
Care Sciences and Life Sciences  
Supply of Products and Solutions

## Quality to Trust On

Quality Management system employed by ND Pharma is based on a customer-centred approach with special emphasis to our continuous improvement philosophy and its implementation in every department and area of the organization.

We produce HQ (High Quality) ingredients and compositions under our Partnership Program that includes some of the most prestigious manufacturing companies and it's production centres worldwide

## PUREWHITE™ in Optical Properties and RIC\*

\*(Refractive Index Control)

The clarity and aspect of white color is majorly dependent on matching the refractive index (RI) of the whitening agent AI's (Active Ingredients/Agents) to that of the humectant phase in the formula. PUREWHITE™ have refractive indices ranging between 1.54 to 1.59 that will allow customers to achieve high levels of satisfaction in color reaching.

## ND Pharma & Biotech **GUARANTEE**

**100% MINERAL INGREDIENTS** ✓

**CLEAN LABEL** ✓

**TITANIUM FREE** ✓

**PRESERVATIVE FREE** ✓

**CLASSIFIED AS COLOR** ✓

**NANO-PARTICLES FREE** ✓



In the field of Ingredient's Technology Experience is a must.  
ND Pharma offers Quality To Trust On.

## PUREWHITE™ of ND Pharma

We help to our customers to create real innovative solutions that will make the difference, improving genuinely their lives and the life of affected people and promoting excellence in disease prevention and health maintenance.

ND Pharma & Biotech

[www.ndpharmabiotech.com](http://www.ndpharmabiotech.com)

To get these things possible we are embraced in a number of high-profile / top-class Research, Development and Innovation focusing on the discovery of novel molecules and therapies designed and engineered for unmet industry needs and challenges from Healthcare to Pharma-chemicals, Food & Nutrition, Animal Health, Agrosciences, etc.



Having the best Technology Process is essential to create the best available product's line.

## PUREWHITE™ Composition

PUREWHITE™ is a free – flow, food-grade, white powder with specific micro-crystalline structure, edible, multi-tested and without ingestion limit and/or maximum exposure.

It's made under strict Quality Standards and Active Ingredient's are authorized for food & nutrition uses worldwide.

Components are minerals salts and fully authorized food ingredients, ubiquitous within Nature and due to our technology and manufacturing processes, product has all guarantee to be used within formulations and finished products within the most varied industries.

Minerals fall the scope of Annex II of Regulation EC 1925/2006 and Annex III of Regulation EC 1170/2009. FDA-GRAS. (As in other relevant Food Legislation). Clean Label under Regulation EC 1169/2001

PUREWHITE™ is Made in the EU.

For further information about us, our catalogue of products and services and the fields we operate offering solutions, please write us to:

[info@ndpharmabiotech.com](mailto:info@ndpharmabiotech.com)

We have been an independent, family-owned and financially stable private company serving as provider for the Pharmaceutical, Research, Biotechnological, Agricultural and Chemical Industry since our incorporation.

We have established a series of strong partnerships and alliances worldwide to serve more efficiently to our clients and customers worldwide.

Our exclusive business model is part of our uniqueness in the creation of added value and strategic advanced solutions for you.

EMEA

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ND Pharma & Biotech Co. is a Biopharmaceutical, Biotechnological and Global Chemical Company with a current portfolio of + 182.000 products