



Teeth are in health with...

GLYCALDENT™

The Last Frontier in Cariostatic Action,
Preventative Effect and Enamel Protection



ND Pharma & Biotech

Product Technical Information



www.ndpharmabiotech.com

GLYCALDENT™
GLYCEROL PHOSPHATE CALCIUM SALT
27214-00-2

Specification

Chemical formula: C₃H₇O₆PCa
C.A.S number: 27214-00-2
INCI Name: Calcium glycerophosphate
Appearance: White Powder
Assay: Not less than 97.8%
Parameters: EP, USP, FCC, BPC

Parameter	Value
Dimethyl Carbonate	0,2 % max
Lead	5 ppm max
Heavy metals as Pb	8 ppm max
Arsenic	3 ppm max
Calcium Total	20% min
Density	0,56 g/cm ³ @ 20°C
Molecular Weight	210.3 g/mol
Water solubility @ 20°C	50,9 mg/L
Solubility (other than water)	Practically insoluble in alcohols
Solubility in aqueous solution	Acidic and sligthly acidic
Polar Surface Area	112.88 Å ²
Polarizability	12.63 Å ²

Application: In Oral Care and Hygiene, Cleaning solutions, Mouthwash, Toothpaste, etc. In Foods and Nutrition, Supplements and PARNUTS, as Chewing Gum, Jellies, Nutrition formulas, etc.

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Mechanism of action and efficiency of GLYCALDENT™ ND Pharma

GLYCALDENT™ (Calcium glycerophosphate) is a Calcium salt of glycerophosphoric acid that forms a white, fine, slightly hygroscopic powder.

GLYCALDENT™ is a mixture of calcium beta-, and D-, and L -alpha-glycerophosphate. By FDA, calcium glycerophosphate is considered a generally recognized as safe (GRAS) food ingredient as a nutrient supplement (source of calcium or phosphorus), or in food products such as gelatins, puddings, and fillings.

GLYCALDENT™ is a specific preparation to use in the field of dental or oral hygiene products due to its demonstrated cariostatic effects. Calcium glycerophosphate promotes plaque-pH buffering, elevation of plaque Calcium and phosphate levels and direct interaction with dental mineral, so it 's a preventative of caries and a protector against acid attack to teeth coming from foods intake and digestion acidic reactions

Package: 25 Kg Drum/Bag

Storage: In optimal storage conditions (storage temperature: 20°C-30°C)

Shelf-life: 18 months from manufacturing date.

GLYCALDENT™ is under FDA regulations a GRAS (Generally Recognized as Safe) substance an authorized food additive an nutritive supplement authorized in the EU. **GLYCALDENT™ is also authorized for use in Oral care and cosmetics under EU Regulations.** **GLYCALDENT™** by ND Pharma is manufactured as standard under USP, EP, BP and FCC Specifications.

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GLYCALDENT™ can be used in OTC dental products such as toothpastes for the prevention of dental caries. As OTC products these do not have an official indication. In prescription products it is indicated as a Calcium or phosphate donor for replacement or supplementation in patients with insufficient Calcium or phosphate.

Pharmacodynamics

It is thought that calcium glycerophosphate as **GLYCALDENT™** may act through a variety of mechanisms to produce an anti-caries effect. These include increasing acid-resistance of the enamel, increasing enamel mineralization, modifying plaque, acting as a pH-buffer in plaque, and elevating Calcium and phosphate levels.

When used as an electrolyte replacement product, **GLYCALDENT™** donates Calcium and inorganic phosphate. **GLYCALDENT™** is preferable to calcium phosphate due to its increased solubility. Compared to other combinations as calcium gluconate + potassium phosphate, **GLYCALDENT™** produces greater phosphate retention which allows for increased Calcium retention and ultimately greater incorporation of the ions into bone structure.

Mechanism of action

GLYCALDENT™ in combination with sodium monofluorophosphate was found to reduce the acid solubility of enamel. This is thought to be due to increased uptake of fluoride in a non-alkali soluble form at the expense of a fraction remaining in the alkali-soluble form of calcium fluoride. It is also thought that **GLYCALDENT™** enhances the re-mineralization effect of sodium monofluorophosphate leading to greater re-mineralization of enamel.

GLYCALDENT™ reduces the decrease in plaque pH produced by sucrose solutions. This may be due to the buffering action of donated phosphate which acts as an acceptor to three hydrogen ions to form biphosphate, dihydrogen phosphate, and finally phosphoric acid. As biphosphate and dihydrogen phosphate are amphoteric, these molecules can act as buffers against both acids and bases.

GLYCALDENT™ donates Calcium and inorganic phosphate resulting in elevated levels of the ions in plaque. These ions are important components of the mineral structure of teeth. As such, their presence supports maintenance of healthy tooth structure and mineralization.

In electrolyte replacement **GLYCALDENT™** again acts as a donor of Calcium and phosphate. See Calcium Phosphate for pharmacological descriptions of calcium and phosphate.



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Is a Biopharmaceutical, Biotechnology, Alimentary and Global Chemical Company Registered in England

Know More about us and our products visiting www.ndpharmabiotech.net and/or write us an e-mail to:
info@ndpharmabiotech.com , Ref: GLYCALDENT.