



ISALTIS

PHARMACEUTICAL & NUTRACEUTICAL ACTIVES



INNOVATION BEYOND EXPERTISE



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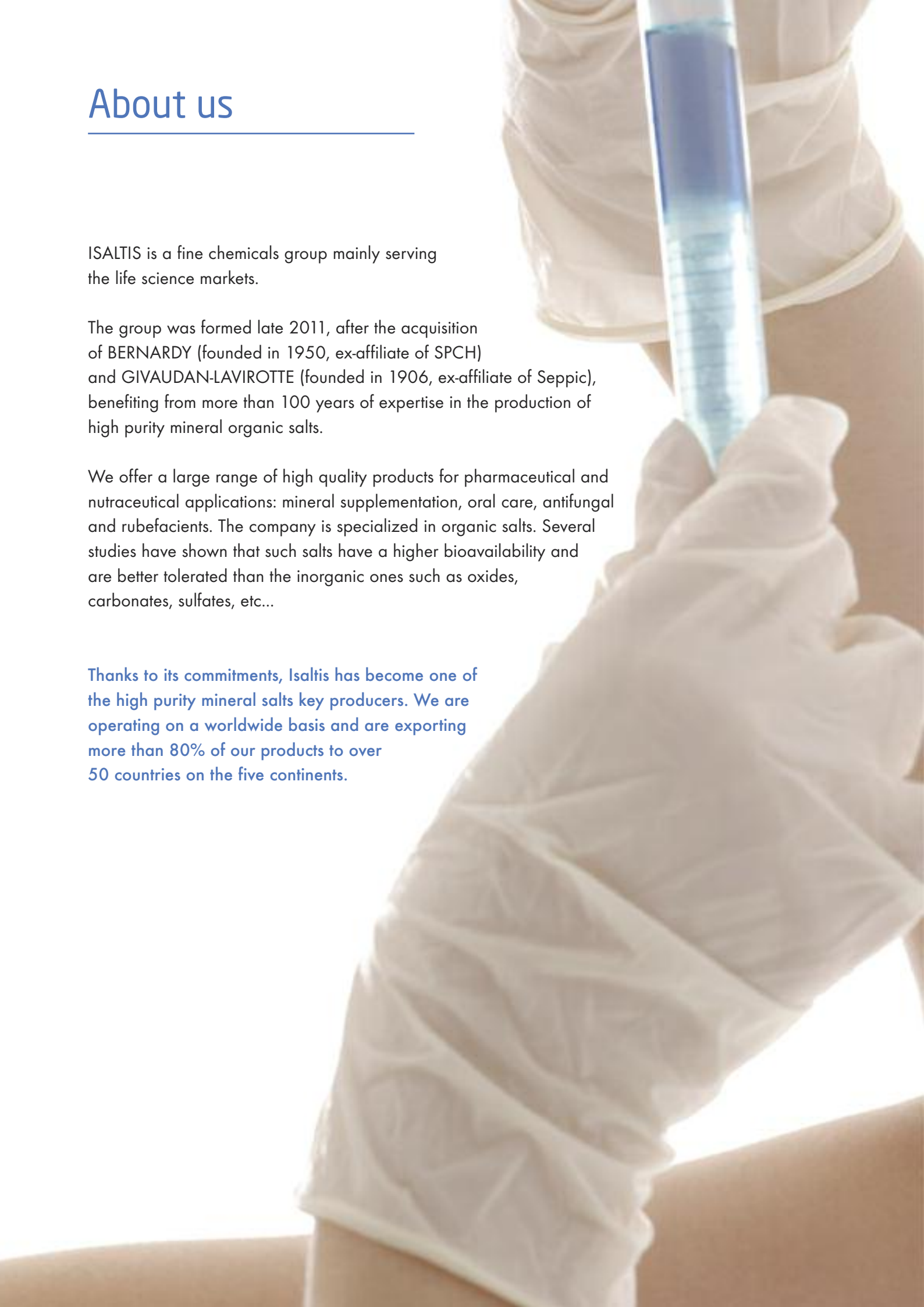
About us

ISALTIS is a fine chemicals group mainly serving the life science markets.

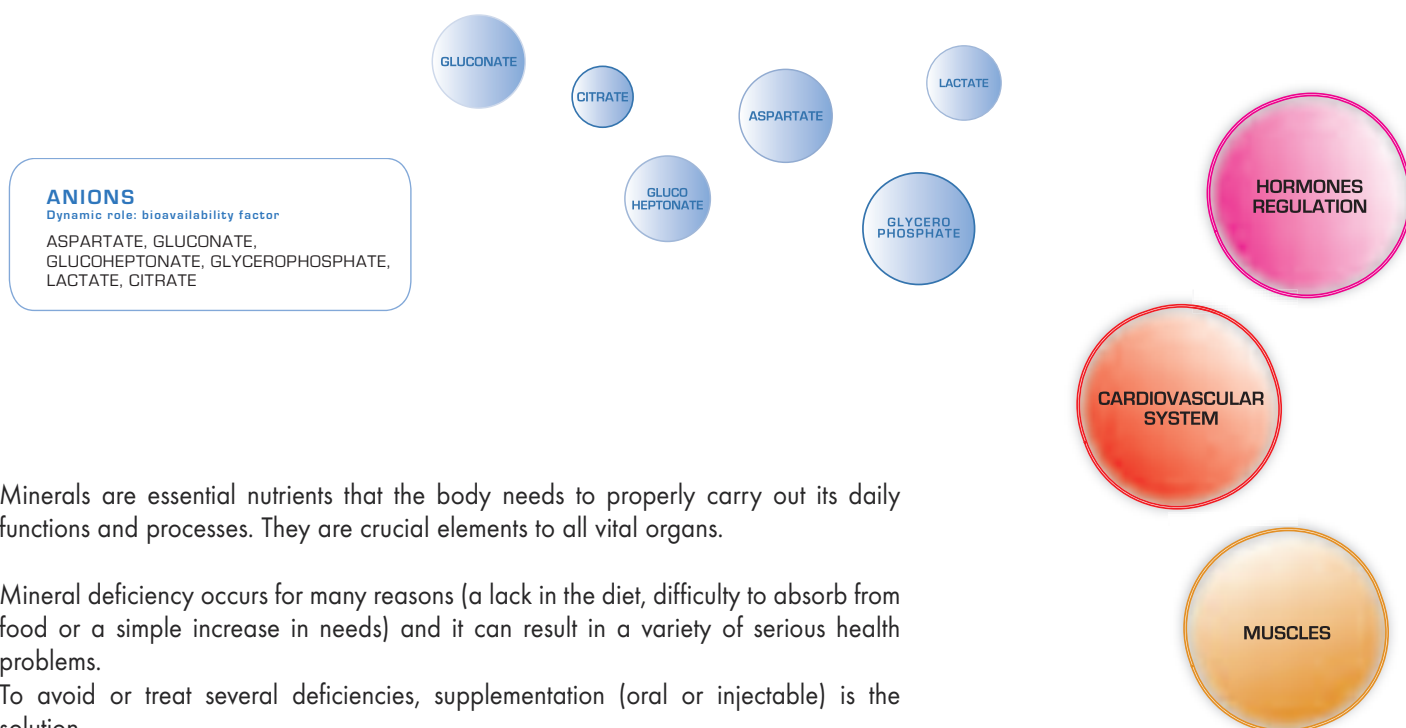
The group was formed late 2011, after the acquisition of BERNARDY (founded in 1950, ex-affiliate of SPCH) and GIVAUDAN-LAVIROTTE (founded in 1906, ex-affiliate of Seppic), benefiting from more than 100 years of expertise in the production of high purity mineral organic salts.

We offer a large range of high quality products for pharmaceutical and nutraceutical applications: mineral supplementation, oral care, antifungal and rubefacients. The company is specialized in organic salts. Several studies have shown that such salts have a higher bioavailability and are better tolerated than the inorganic ones such as oxides, carbonates, sulfates, etc...

Thanks to its commitments, Isaltis has become one of the high purity mineral salts key producers. We are operating on a worldwide basis and are exporting more than 80% of our products to over 50 countries on the five continents.



Mineral supplementation



Minerals are essential nutrients that the body needs to properly carry out its daily functions and processes. They are crucial elements to all vital organs.

Mineral deficiency occurs for many reasons (a lack in the diet, difficulty to absorb from food or a simple increase in needs) and it can result in a variety of serious health problems.

To avoid or treat several deficiencies, supplementation (oral or injectable) is the solution.

Isaltis offers a wide range of highly efficient organic salts. This efficiency is due to the association of the biologically active cation to an organic vector, which enhances the bioavailability of the mineral salt.

Isaltis benefits from decades of expertise in manufacturing organic minerals for life sciences applications.

Isaltis highly bioavailable organic range

Glycerophosphate

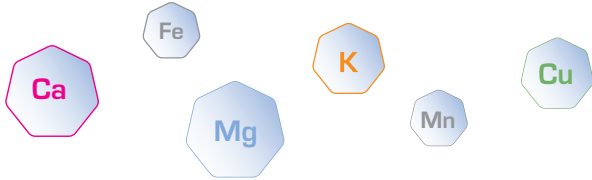
Glycerophosphate anions are the alpha and beta isomers of monoglycerophosphoric acid. Salts which have this anion as the organic vector are ones of the most bioavailable and well tolerated salts. Glycerophosphate is a key intermediate in the synthesis of phospholipids.

Phospholipids are the main constituent of biological membranes. Also, studies have demonstrated that the glycerophosphate anion is a reliable phosphorus source.

As an example, it was proven that calcium glycerophosphate is the most efficient salt for bone calcification. Phosphorus helps calcium retention which raises the amount of the skeletal calcium. It is a well known fact that these two elements work synergistically.

Glucoheptonate

Glucoheptonate anions are among the best cellular permeation enhancers. They offer great bioavailability, good organoleptic properties and have no side effects associated with the administration of high doses. Furthermore, due to their high solubility, glucoheptonate salts can be associated with other less soluble minerals to avoid crystallization problems (association of calcium gluconate and calcium glucoheptonate for example). Aside from that, these anions are among the least irritating if administered by injection.



CATIONS
Biological role: health claims
CALCIUM, IRON, MAGNESIUM, POTASSIUM,
ZINC, STRONTIUM, COPPER, LITHIUM,
MANGANESE, ALUMINIUM, SODIUM

Isaltis is a manufacturer of chelates. Chelation is the formation or presence of bonds between two or more separate binding sites and a single central atom (usually metallic atoms).

A chelate's complex structure allows for a better survival of the metal ion throughout the stomach and the small intestine, where absorption into the bloodstream takes place.

As an example, the bioavailability of magnesium oxide is almost two times lower than that of magnesium citrate or aspartate.

Lactate

Lactate anions are essential components which are naturally present in many biochemical mechanisms. They are a key factor in muscular contraction. Recent evidence now places lactate as an active metabolite, capable of moving between cells, tissues and organs, where it may be oxidized for fuel or reconverted to form pyruvate or glucose.

Citrate

Citrate anions play a central role in the Krebs' cycle as they are gradually modified by different enzymes to produce cell energy. They are important elements in a number of metabolic pathways such as glycolysis. In addition, citrate is a vital component in bones. It helps to regulate the size of apatitic calcium phosphate nanocrystals preventing crystal growth beyond the favorable thickness.



GIVOBIO Fe601 - Ferrous gluconate

Iron is an essential nutrient playing a key physiological role in our body. Iron is like liquid gold to the body. During millions of years of evolution our body did not even develop a mechanism to excrete excessive iron.

GIVOBIO Fe601 was designed to answer all customers needs, in terms of taste and bioavailability. It is very soluble and has only a slight metallic taste. In one study, authors found that ferrous salts (II) are better absorbed than ferric salts (III).

GIVOBIO Fe601 is in the ferrous form and is therefore more bioavailable than many other iron salts on the market today.

GIVOMAG - Magnesium glycerophosphate



Magnesium glycerophosphate is a highly bioavailable magnesium salt with excellent absorption properties. It has a high magnesium content and is easily digestible. The magnesium content is one of the highest among magnesium organic salts existing on the market today. It is a tasteless, odorless white soluble powder and can be incorporated into any formulation.

GIVOCAL - Calcium glycerophosphate

Science shows that calcium glycerophosphate was the most efficient salt for bone development. Phosphorus is essential for maintaining adequate skeleton calcium levels. It is a tasteless, odorless white soluble powder and can be incorporated into any formulation.





Our commitments

Manufacturing expertise

Process control
A wide range of technologies
Reliability & sustainability

Quality

Excellent management quality system
Network of qualified suppliers
Reliable traceability system
Analytical control
Operative quality control in compliance with GMP / ANSM

Regulatory

Reliable customer support
Documentation support available
Clinical studies

Innovation

New product development
Development laboratory for formulation
Innovative concept
Scientific support
Cooperate in R&D programs
"Innovative Company" label
Active member of competitive cluster



Product portfolio

CATION	CHEMICAL NAME	% of CATION ⁽¹⁾	SOLUBILITY (g/l in water) ⁽²⁾
Calcium	Gluconate	8.9	40 (25°C)
	Glucoheptonate	8.2	100 (20°C)
	Gluconolactate	12.9	400 (20°C)
	Glycerophosphate / GIVOCAL	19.1	20 (25°C)
	Liq glycerophosphate 50%	4.7	SOLUBLE
Copper	Gluconate / GIVOBIO GCu	14.0	>500 (20°C)
Iron	Glucoheptonate	11.0	>1000 (25°C)
	Gluconate / GIVOBIO Fe601	12.5	100 (20°C)
	Glycerophosphate	18.0	SOLUBLE
Lithium	Gluconate	3.4	>1000 (25°C)
Magnesium	Citrate nonahydrate	11.9	0.60
	Citrate anhydre	16.2	SOLUBLE
	Glucoheptonate	5.1	>1000 (25°C)
	Gluconate	5.9	110 (20°C)
	Glycerophosphate / GIVOMAG	12.5	80 (20°C)
	Lactate dihydrate	10.2	SOLUBLE (AT HOT TEMPERATURE)
	L-Aspartate	7.5	1000 (20°C)
	L-Aspartate (Mg + K)	3.7 Mg + 11.7 K	1000 (20°C)
Liq glycerophosphate 50%	3.3	SOLUBLE	
Manganese	Gluconate	12.3	110 (25°C)
Niacinamide	Vitamin B3	-	SOLUBLE
Nicotinate	Ethyl	-	SOLUBLE
	Hexyl	-	INSOLUBLE
	Methyl	-	SOLUBLE
Potassium	L-Aspartate	21.7	>1000 (25°C)
	Liq glycerophosphate 50%	12.9	SOLUBLE
	Liq glycerophosphate 75%	19.4	SOLUBLE
Sodium	Glycerophosphate	14.6	>1000
	Liq glycerophosphate 50%	7.3	SOLUBLE
	Liq glycerophosphate 65%	9.5	SOLUBLE
Strontium	Acetate	40.8	369 (20°C)
	Citrate	35.0	INSOLUBLE
	Chloride	32.9	538 (20°C)
Undecylenic acid	Undecylenic acid	-	INSOLUBLE
Zinc	Acetate	35.6	430 (20°C)
	Carbonate	59.6	INSOLUBLE
	Citrate	31.2	SLIGHTLY SOLUBLE
	Glucoheptonate	12.6	> 1000 (25°C)
	Gluconate	14.4	100 (20°C)
	L-Aspartate	19.8	25 (20°C)
	Lactate	23.4	57 (20°C)
	Salicylate	19.3	50 (20°C)
	Undecylenate	15.1	INSOLUBLE

TASTE-ODOR	AVAILABLE GRADES	APPLICATIONS
Tasteless / Odorless	EP, USP	Hypocalcemiaeas
Tasteless / Odorless	Injectable: EP, USP / Soc: USP	Calcium deficiency, osteoporosis, bone health
Sweetish odor	Pharma (Internal quality)	Calcium supplementation
Tasteless / Odorless	EP / FCC	Dietary supplements / oral care
Tasteless / Odorless	Pharma, Food (Internal quality)	Treatment of functional asthenia
Bitter metallic taste / Odorless	USP / FCC	Dietary supplements
Slight metallic taste / Odorless	Pharma (Internal quality)	Hypochromic anemia, asthenia and iron deficiency
Slight metallic taste / Slight odor of caramel	EP, USP / FCC	Treatment of iron deficiency
Tasteless / Odorless	BPC	Iron supplementation
-	Pharma (Internal quality)	Treatment of depression and seborrheic dermatitis
Slight bitter aftertaste / Characteristic odor	USP / Food (Internal quality)	Stress, tiredness, headaches, constipation, magnesium deficiency, ...
Slight bitter aftertaste / Characteristic odor	EP / Food (Internal quality)	Stress, tiredness, headaches, constipation, magnesium deficiency, ...
Tasteless / Odorless	Pharma (Internal quality)	Stress, tiredness, headaches, magnesium deficiency, ...
Tasteless / Odorless	EP, USP / FCC	Stress, tiredness, headaches, magnesium deficiency,...
Almost tasteless / Odorless	EP, BPC / Food (Internal quality)	Stress, tiredness, headaches, magnesium deficiency, ...
Tasteless / Odorless	EP / Food (Internal quality)	Stress, tiredness, headaches, magnesium deficiency, ...
Tasteless / Odorless	EP	Magnesium and amino acid supplementation
Almost tasteless / Odorless	Pharma (Internal quality)	Asthenia, convalescence, restoration of athletes
Tasteless / Odorless	Pharma, Food (Internal quality)	Stress, tiredness, headaches, magnesium deficiency, ...
Tasteless / Odorless	EP, USP / FCC	Manganese supplementation, antioxidant
Slight metallic taste / Odorless	EP / FCC	Pellegra prevention, vitamin supplementation
-	Pharma (Internal quality)	Topical rubefacient / local vasodilator
-	Pharma (Internal quality)	Topical rubefacient / local vasodilator
-	EP, BPC	Topical rubefacient / local vasodilator
Salty taste / Odorless	EP	Asthenia, fatigue, convalescence
Salty taste / Odorless	BPC / Pharma, Food (Internal quality)	Prevention treatment of hypokalaemia
Salty taste / Odorless	Pharma, Food (Internal quality)	Prevention treatment of hypokalaemia
Slightly bitter taste / Odorless	EP, BPC	Neurasthenia, anaemia, convalescence
Slightly bitter taste / Odorless	BPC	Neurasthenia, anaemia, convalescence
Slightly bitter taste / Odorless	Pharma (Internal quality)	Sodium supplementation
Slight odor of acetic acid	Pharma (Internal quality)	Oral care, bone health
Odorless	Pharma (Internal quality)	Oral care, bone health
Odorless	Pharma (Internal quality)	Oral care, bone health
Fruity odor above 25°C	EP, USP	Antifungal
Odor of acetic acid	EP / Food (Internal quality)	Antimicrobial
Odorless	USP	Antimicrobial
Slightly bitter taste / Odorless	USP / Pharma, Food (Internal quality)	Zinc supplement / oral care
Odorless	Pharma (Internal quality)	Zinc supplementation
Bitter taste / Odorless	EP, USP	Zinc supplementation, acne treatment
Acidic taste / Odorless	Pharma, Food (Internal quality)	Zinc and amino acid supplementation
Bitter taste / Slight odor	Pharma, Food (Internal quality)	Zinc supplementation / oral care
Odor of salicylic acid	Pharma (Internal quality)	Antifungal
-	EP, USP	Antifungal



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