☐ Food
■ Food Additive
☐ Cosmetic
☐ Quasi-drug

Hokkaido・Aomori Scallop Shell
『 Calcined Shell Calcium (Calcium Hydroxide, Calcium Oxide) 』

Upcycling

Technical Data

Food Additive from 100% Natural Material

The photo on the right is Wakkanai's tourist spot ``White Path'' which is paved with scallop shells.

There is a lot of demand for scallops for export, and a lot of them are farmed in Hokkaido and Aomori prefectures, but the large quantities of shells produced are an issue for the production areas as they are considered industrial waste. Although it is also used as fertilizer, most of the shells remain unused.

Calcium oxide (CaO) is a strongly alkaline food improver that is made from the unused shells and heated at a high temperature of approximately 1,000℃ to produce calcined calcium, which is then powdered under sterile and anhydrous conditions. Calcium hydroxide (Ca(OH)2) is made by reacting calcium oxide with water and turning it into powder.

When both calcium oxide and calcium hydroxide are dissolved in water, they form a calcium hydroxide aqueous solution and show strong alkalinity. Utilizing this characteristic, it is used in vegetable cleaning agents, virus disinfectants, etc. The aqueous solution is strongly alkaline, so be careful not to get it in your eyes while handling.

■ Expected Function

◎ Improving food antimicrobial and shelf life
◎ Improving coagulation, elasticity and water retention of food
◎ Improving food yield and bonding

■ Uses

◎ Washing vegetables and eggs
◎ Adding into fish paste products
◎ Adding into processed meat and frozen food

■ Production Process

Calcium Hydroxide	Calcium Oxide
Receiving raw material	
Baking	
Natural cooling	
Pulverising	
Removing iron (10,000 gauss)	
Adding water (react with water)	Sieving
Natural cooling	Removing iron (10,000 gauss)
Sieving	Quality inspection
Quality inspection	Packaging
Packaging	Shipping
Shipping	

■ Display Name Example

Calcined shell calcium, Shell calcium, Shell Ca, etc.

＊ Scallop shell calcined calcium is a food additive corresponding to "calcined shell calcium" described in the ninth edition food additive official document.

■ Quality Stansard Composition

	Calcium Hydroxide	Calcium Oxide
Material	Scallop shell	
Property	White powder	White to milky white or gray white powder
Calcium oxide		Over 91.0%
Calcium hydroxide	Over 95.0%	
pH	Over 11.0	
Viable count of bacteria	Less than 1,000 pcs/g	
Coliforms	Negative	

＊ We also offer ingredients other than food additives.
Please contact us for details.

■ Other

	Calcium Hydroxide	Calcium Oxide
Quantity	20kg (10kg x 2 bag)	
Shelf life	3 years from the production date	18 months from the production date
Storage condition	Keep in cool dry place and avoid direct sunlight	

Company Information

Ver.2304

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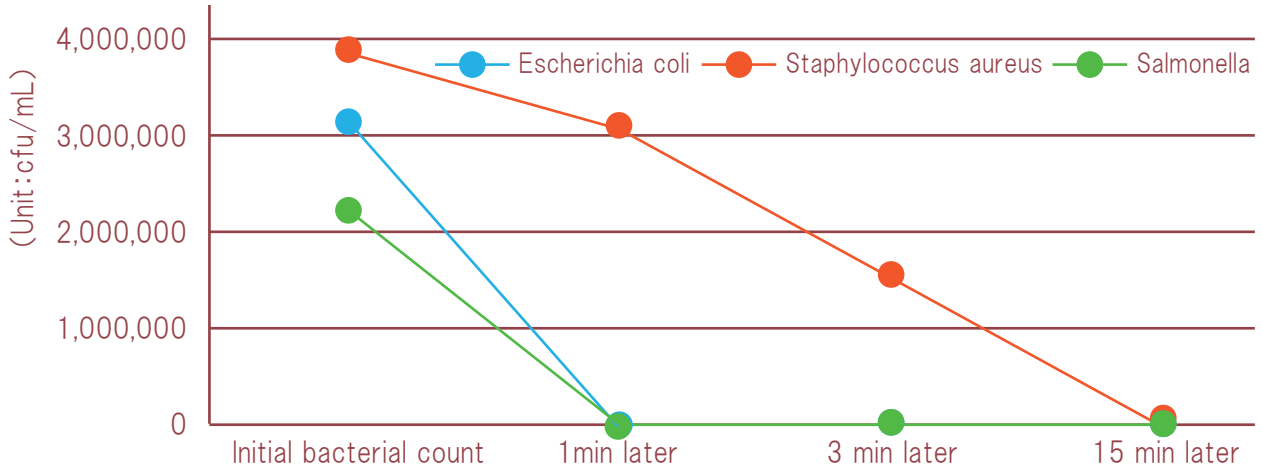
■ Bactericidal effect

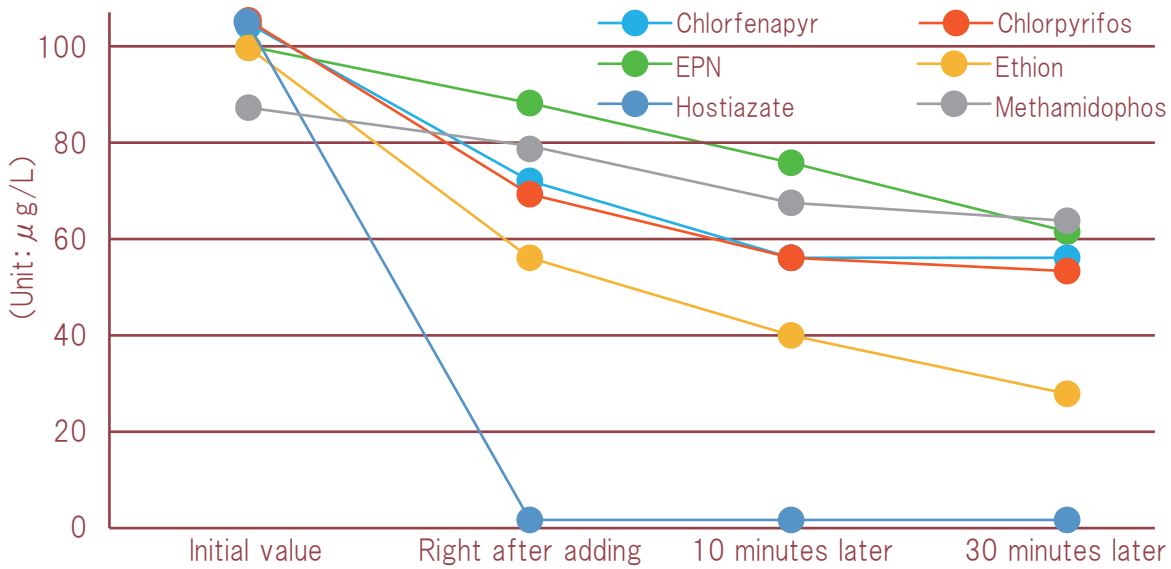
A bactericidal effect is confirmed in a test in which 0.1ml of Escherichia coli, Staphylococcus aureus, and Salmonella are inoculated into a 0.3% aqueous solution of calcined shell calcium (calcium hydroxide).



Bacterial name	Initial bacterial count	1 minute later	3 minutes later	15 minutes later
Escherichia coli	3,200,000	43	0	0
Staphylococcus aureus	3,900,000	3,100,000	1,600,000	280
Salmonella	2,200,000	0	0	0

■ Pesticide removal effect

Pesticide removal effect is confirmed in a test in which 100μg/L of the following pesticides are added to a 0.1% aqueous solution of calcined shell calcium (calcium hydroxide).



Pesticide name	Initial value	Right after adding	10 minutes later	30 minutes later
Chlorfenapyr	104	72	55	55
Chlorpyrifos	105	69	55	53
EPN	98	88	75	61
Ethion	99	55	39	27
Hostiazate	104	< 10	< 10	< 10
Methamidophos	87	79	67	63

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