FCP-COMPLEX effects on caries prevention and tooth reinforcement

FCP-COMPLEX is a solution which includes high-concentration fluoride, calcium and phosphate into one bottle

Normally, when fluorine and calcium are mixed in the same solution, a compound is formed and precipitates, but by mixing them with phosphoric acid at a certain ratio, a one-liquid solution can be produced without forming precipitates.

FCP−COMPLEX

F : Ca : H_3PO_4 = 6 : 10 : 1

[NaF] mmol/L	[CaCl2] mmol/L	[H3PO4] mmol/L	pH
1200	2000	200	0.32
150	250	25	1.7
48	80	8	2.21
12	20	2	2.77
6	10	1	3.06
3	5	0.5	3.35
0.5	0.83	0.083	4.08

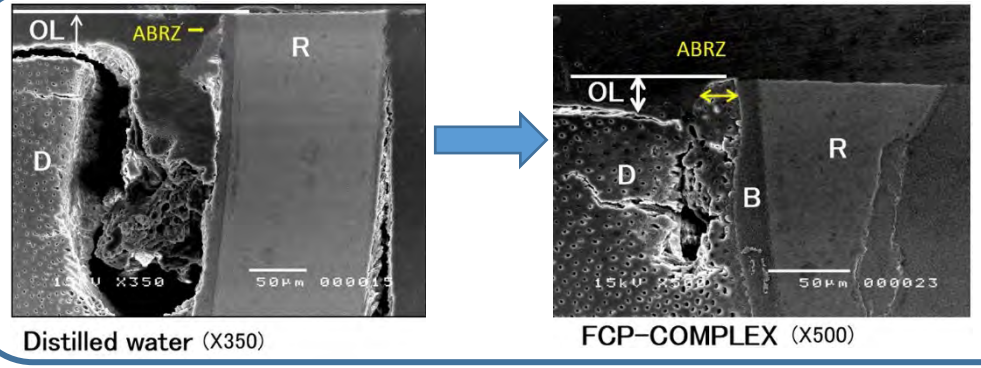
F Deposition with several conditions of FCP−Complex

Treatment solution	F deposition, μg/cm²	% increase by F−Ca−P
12 mM NaF (228 ppm)	0.74 ± 0.06	100 %
12 mM NaF + 20 mM $CaCl_2$ + 2 mM H_3PO_4	5.10 ± 0.50	691 %
87.7 mM NaF (1667 ppm F)	2.24 ± 0.39	100 %
87.7 mM NaF + 146.2 mM $CaCl_2$ + 14.6 mM H_3PO_4	16.7 ± 1.20	746 %

7 times

7 times

Significantly increased fluoride uptake in enamel (approximately 7times) compared to equivalent sodium fluoride. Acid resistance can be improved by strengthening tooth substance. Super Tooth construction.



Distilled water (X350)

FCP−COMPLEX (X500)

Applied to resin composite restoration, greatly improved acid resistance (suppression of secondary caries) of adhesive interface

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