

- **Re-calcification test of permanent teeth**

Teeth used for the test: human front teeth (permanent teeth)

Sample: CORAL APATITE

Equipment: Low-acceleration scanning electron microscope
HITACHI SU3500

Reagent: SBF (Simulated Body Fluid: Tris, NaCl, MgCl₂, others)

Test method: ① Mix CORAL APATITE and the same amount of pure water to make into a paste and spread onto the surface of the teeth.

② Wash with water after 15 minutes. ③ Spread CORAL APATITE again and wash after 15 minutes. ④ Dip into SBF 50ml and leave it at 37°C for two days.

Test result: Fine particles of CORAL APATITE are adhered to the surface of the teeth treated with CORAL APATITE so that re-calcification is confirmed.



Not treated



Processed with CORAL APATITE

- **Pigment Adsorption**

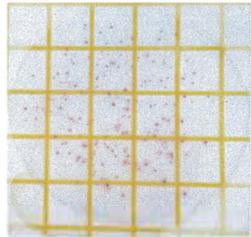
CORAL APATITE has excellent pigment adsorptivity. CORAL APATITE arranged dentifrices cleans dirt on the teeth as they adsorb pigment such as tobacco tar, coffee, red wine, etc. Also, CORAL APATITE can be used for hair dyes.

- **Oral Bacteria Adsorption**

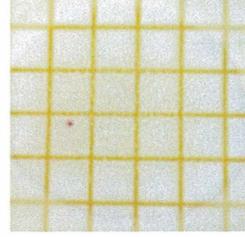
[Test method]

- ① Make fungus liquid of the liquid after you gargle and spit out.
- ② Add 0.3g of CORAL APATITE to 10ml of the fungus liquid and stir, and leave to stand still.
- ③ After CORAL APATITE precipitates, take the clean water and culture on the culture medium for measuring the number of general bacteria.

[Test result] Adsorption rate 99% and over.



Before adsorption: The number of fungus 150/ml



After

adsorption: The number of fungus 1/ml

This proves that CORAL APATITE has adsorption effect of bacteria so that it can be used for dentifrices, masks, filters and so on.

● Palladium heavy metal Adsorption

[Reagent]

Standard solution for Atomic Absorption Spectrometry

Palladium 1000ppm

Use as 5ppm by 200 fold dilution

[Test Method]

- ① Put 100ml Palladium of 5ppm in a beaker and keep the temperature at 37°C in a water bath
- ② Add 1g of analysis sample and stir
- ③ Filtrate it one minute later and three minutes later
- ④ Measure the Palladium concentration in the filtrated solution by ICP

[Test result]

	One minute later	Three minutes later
Palladium concentration (ppm)	0.049	0.004
Adsorption rate (%)	>99	>99

● Heavy Metal Adsorption

[Sample]

Standard fluid for ICP measurement (Cd, Hg, Pb),

CORAL APATITE impregnated paper

[Test method]

- ① Adjust the standard fluid that each element is 5ppm.
- ② Set CORAL APATITE spread paper onto a funnel and pass through 30ml of the standard fluid.
- ③ Measure the fluid passed through the funnel.

[Test result]

Sample	Concentration (ppm)	Adsorption rate (%)
Cadmium	0.4	92
Mercury	0.6	88
Lead	0.2	96

● Odor Substances Adsorption

Adhesion test result of odor-causing substances such as Ammonia and Trimethylamine. Concentration change after 60 minutes adhesion

Substance name	Concentration before adsorption (ppm)	Concentration after adsorption (ppm)	Adsorption rate (%)
Ammonia	18	5	72
Trimethylamine	11	2	82
N-Butyric acid	9	4	56

● Lipid Peroxide Adsorption

The test result of Lipid Peroxide Adsorption proved that CORAL APATITE has far excellent adsorptivity than other inorganic materials.

Substance name	Removable rate (%)
Apatite	100
Sericite	79
Talc	9
Silica	0