NISHIKA

Bioceramics in Endodontics

Root Canal Filling

- Single cone
- Lateral condensation
- Vertical condensation

Ideal flowability for root canal filling after mixing the pastes

Multi indications

- Pulp capping
- Pulpotomy
- Perforation repair
- Root-end filling

Mix the paste and the powder to change consistency

All-in-One

NISHIKA CANAL SEALER BGmulti

Further information

Japan Quality

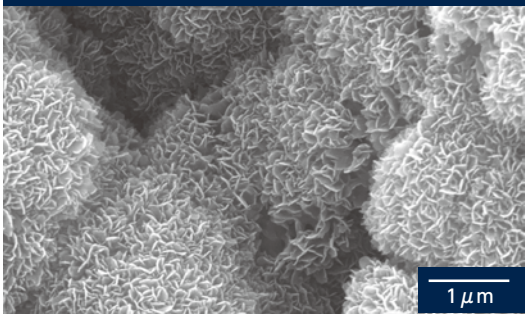
Bioactive Glass

- has been used as a bone graft substitute in the field of orthopedics.
- is a type of bioactive bioceramics.※
  The surface forms a biologically active hydroxycarbonate apatite layer which provides the bonding interface with tissues.[1)]

※Bioactive Glass, MTA, and sintered Hydroxyapatite are included.

1) L.L.Hench, J. Am. Ceram. Soc., 74 [7], 1487-1510, 1991.

HAp crystallization identified on the surface in SBF

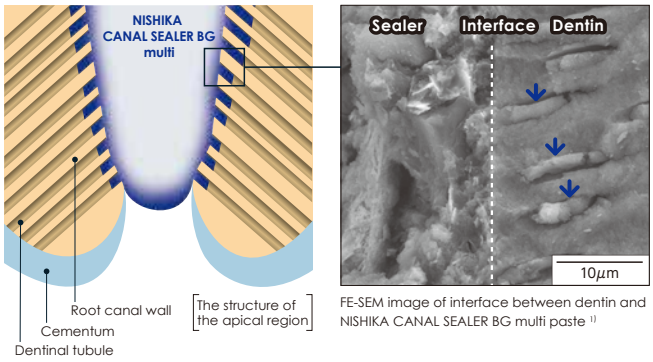


FE-SEM image of the surface of this material

Source: Laboratory of NISHIKA

Sealing ability

Tag-like structures of HAp crystals formed in the dentinal tubules



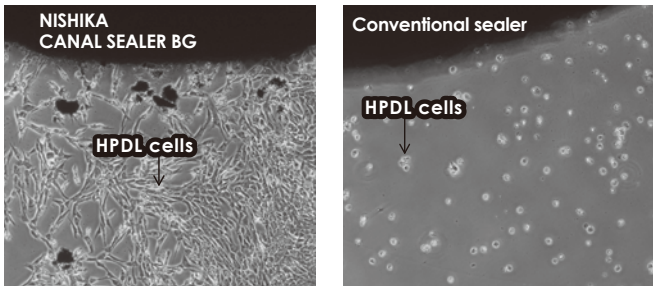
FE-SEM image of interface between dentin and NISHIKA CANAL SEALER BG multi paste [1)]

FE-SEM image of interface between dentin and NISHIKA CANAL SEALER BG multi.

Source: Yoshii et. al., JpnConserv Dent, 59(6): 463-471, 2016.

Biocompatibility

Human PDL cell growth



Phase contrast microscopic photographs showing cell attachment to materials

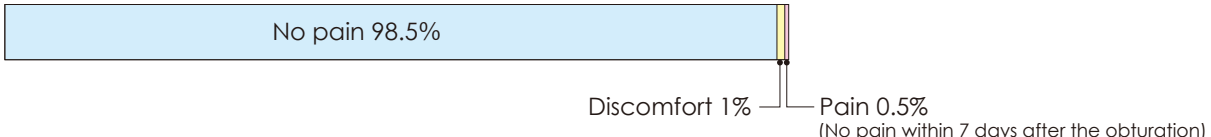
Source: Division of Endodontics and Restorative Dentistry, Kyushu Dental University

Clinical Outcomes

Root canal filling with NISHIKA CANAL SEALER BG multi Paste

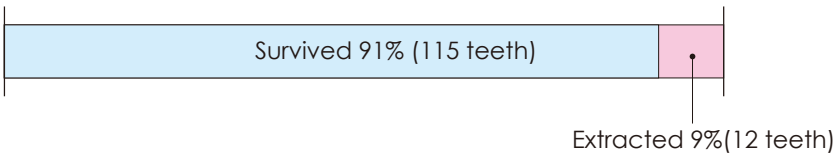
Postoperative Pain

・Study design: prospective cohort study
・Number of cases: 555 cases(November 2017 – November 2019)
・Immediate postoperative pain



3-year Retrospective Follow-up

・Study design: Retrospective study
・Number of cases: 127 cases
・The survival rate 3 years after root canal filling



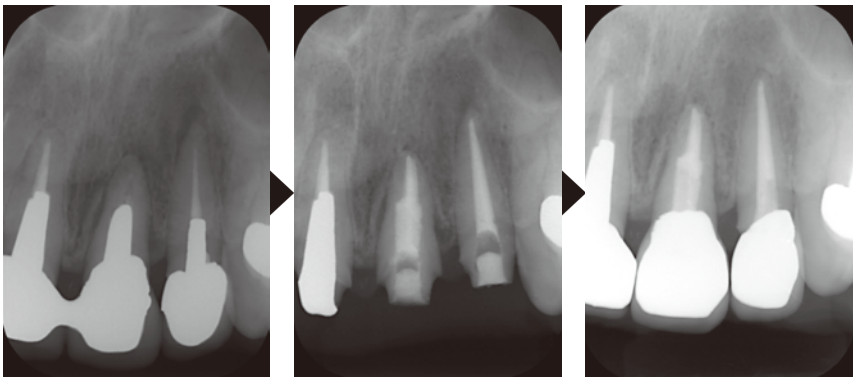
Washio *et. al.*, IJERPH, 17(23): 8857, 2020.

Washio *et. al.*, ODEP. 2(1): 16-24, 2022.

Clinical Case (Root Canal Filling)

Paste

- A female at the age of 50s
- Refractory apical periodontitis in the left maxillary anterior teeth region. After the symptoms subsided by the infected root canal treatment, a root canal filling was performed, using single cone technique. There was no change in the tight root canal filling after 5 years and 8 months, and the apical periodontal tissues remained normal after the apical lesion .



Pre-operative stage | Root canal obturation | 5-year and 8-month follow-up

Washio *et. al.*, The NIPPON Dental Review. 84(3): 83-92, 2024.

Ideal flowability

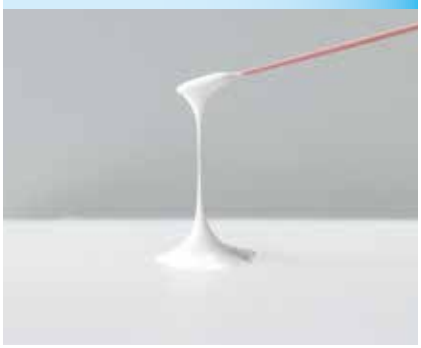
1 Dispense the amount required.

approx.50 applications per 3g-syringe

2 Mix them gently.

Mixing time: just 5 seconds or more
•A plastic spatula is recommended

3 Ideal paste for root canal filling.



The paste is always prepared to the same consistency.

Predictable & Stable Setting Time

The mixed paste requires about **1 hour** to set in the root canal without powder.
(The time required for the gutta-percha point to become fixed)

Washout Resistance

Even when exposed to water immediately after mixing, the shape does not break.

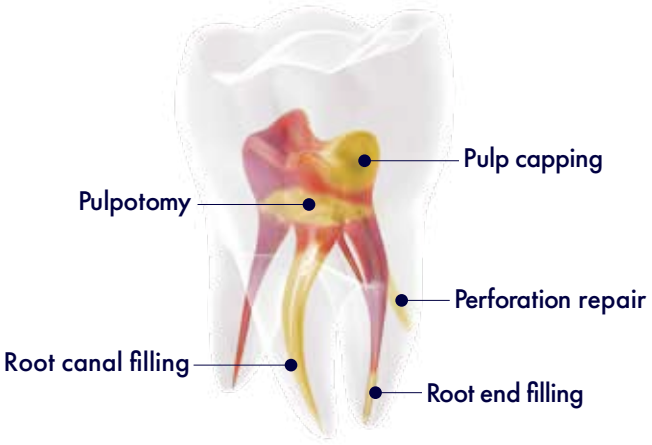
Removability

In case of retreatment, the material can be easily removed using conventional instruments such as endodontic files and reamers. The material can be removed easily without the need for a dedicated solvent.

All-in-One

Multi-purpose root canal sealer & root repair material with Bioactive Glass

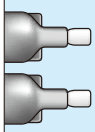
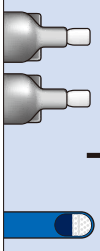
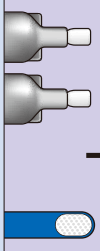
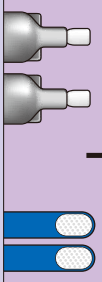
Multi indications



Multi consistencies

It can be easily changed to your desired consistency by the addition of powder to the paste

Multi properties

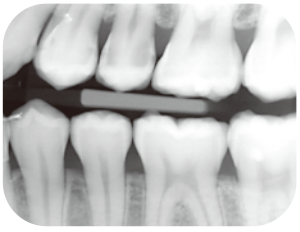
	Smooth	Thin cream	Thick cream	Putty
Consistency				
	No powder	**Less powder**	→	**More powder**
Mixing ratio Paste : Powder	10:0	10:2	10:4	10:6
pH	9.5～10.2	10.2～10.9	10.3～11.1	10.6～11.3
Final setting time	180min.	135min.	90min.	60min.
Radiopacity	6mmAl	5mmAl	5mmAl	4mmAl
Indicator of mixing ratio	 Paste only No powder added	 half a spoonful	 a spoonful	 2 spoonfuls
Examples of indications	Root canal filling	Pulp capping Pulpotomy Perforation repair	Pulp capping Pulpotomy Perforation repair	Pulp capping Root-end filling

Clinical Case (Pulp Capping)

Creamy consistency (Paste + Powder)

- A male at the age of 20s
- Caries treatment was performed on the maxillary left second premolar. After removal of infected dentin, a thin layer of creamy paste was applied to the dentin surface adjacent to the pulp chamber. The powder was then placed over the paste and shaped with a ball burnisher. The excess paste was removed, and both the surface of the paste and the dentin surface were covered with glass ionomer cement. The tooth was subsequently restored with composite resin. At the 10-month follow-up, no symptoms of pulpitis or occlusal pain were observed, and the clinical course was favorable.

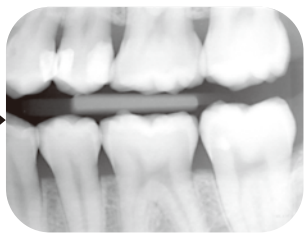
Pre-operation (Photo)



Pre-operation (X-Ray)

Caries removal

Pulp capping



10-month follow-up (X-ray)

Kitamura *et. al.*, The NIPPON Dental Review Special Issue, 96-99, 2021.

Packaging

More Clinical Cases

NISHIKA CANAL SEALER BG multi Paste
・3g-Double syringe [Paste A: 1.5g / Paste B: 1.5g]

NISHIKA CANAL SEALER BG multi Powder
・2g-Jar
・Measuring spoon

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