REALITY
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35TH anniversary

KATANA Cleaner

Manufacturer

Kuraray

https://kuraraydental.com/product/katana-cleaner/

Price

$34.99/4ml ($8.75/ml)

Shelf Life

3 years

Raves & Rants

- ✓ Can be used on preps and inside crowns
- ✓ Boosts bond strength
- ✗ More expensive than other cleaners such as pumice
- ✗ Rubbing/scrubbing a prep with an applicator tip can be cumbersome

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Introduction/ Manufacturer's Claims

First universal product for cleaning preps and intaglio surfaces of restorations. It is non-abrasive and can be used to clean dentin, enamel, root canals, and implant abutments, as well as glass ceramics, zirconia, resin, metal, and fiber posts. Due to the surface active characteristic of its MDP salt, it is stated to have a high cleaning effect.

Composition

MDP (10-Methacryloyloxydecyl dihydrogen phosphate), triethanolamine, polyethylene glycol, accelerator, dyes, water.

pH

4.5

Viscosity

Most (72%) evaluators found it to be acceptable, while 14% thought it was too thick and 14% felt it was too runny. Some comments:

- Just right for me.
- Flows and wets nicely.
- I preferred its viscosity compared to Ivoclean since it flows smoother and I can manipulate the material more easily to clean intaglio surfaces of restorations.
- Fine as a liquid.
- Wish it was more viscous.

Color

Purple. Most (86%) evaluators found the color to be acceptable, while the other 14% preferred it to be clear. Some comments:

- Doesn't everyone like purple?
- I like a little color so I can see where it is.
- I like the purple, so I can be sure it's all washed off.
- The coloration helps to assure full coverage of the restoration and of the prep.
- I like the fact that it is colored. It really does not matter what color it is since you completely rinse it off.
- Purple is very easy to visualize and make sure it is rinsed away.

Odor

All evaluators except one thought the odor was acceptable, with the lone outlier stating it was pleasant. Some comments:

- I was wearing a mask so I didn't know it had an odor.
- Patients did not complain.
- Better than sodium hydroxide or ammonia!
- It is not overtly offensive.

Use

Apply enough of the solution to the surfaces to be cleaned using an applicator tip, rub the surface for at least 10 seconds to remove any adherents such as provisional cement, rinse thoroughly, and then dry appropriately for the surface you have just cleaned. For example, for restorative materials, you would dry thoroughly with air. But for dentin, you may want to blot dry if the cement you are using such as a resin ionomer works best on a moist surface.

Most (65%) evaluators cleaned preps for 10 seconds, while 21% upped the ante to 15 seconds and 14% were extra careful at 20 seconds.

For cleaning the intaglio of restorations, most (72%) evaluators stuck with 10 seconds, while 14% upped the ante to 15 seconds and 14% were extra careful at 20 seconds.

Most (57%) evaluators applied it by rubbing/scrubbing, while 36% used gentle agitation and 7% just let it sit. One evaluator stated that it was allowed to sit about half the time and agitated prior to rinsing.

Half of the evaluators considered its cleaning effectiveness to be on par compared to an abrasive product such as Consepsis Scrub, while 38% thought Consepsis Scrub was more effective and 12% found it to be more effective. Some comments:

- It was to me not quite as effective as Consepsis Scrub.

- It was as effective and easier to rinse off.
- I usually use some wet pumice and scrub prep.
- My protocol is to use a less abrasive antibacterial, just plain 2% chlorhexidine to clean prep.
- Best way to remove residual cement was with hand instruments or Cavitron.
- I pumice my preps with prophy cups and ICB brushes where the prophy cup cannot access the prep.
- I use TempBond Clear and my provisional cement always stuck to the inside of the temp.

Rinsing was considered to be easy by all evaluators except one, while the lone outlier thought it took too much effort. Some comments:

- Easier to rinse off than phosphoric acid.
- Easy, especially due to the purple color.
- It's a liquid. It was very simple to rinse it off completely.
- Took too long.

All evaluators except one found dispensing from its squeeze bottle to be easy, while the lone outlier thought it was cumbersome. One evaluator noted that the cap design (see below) although smart in the opening feature, allowed the material to spill if the assistant opens it up in a regular way, because the bottle opening (below the lid) is too wide. On the other hand, four other evaluators really liked the flip-top.

Bond Strength to Lava

Specimens were sandblasting with 50 micron aluminum oxide at 70 psi. Rinsed and dried. Contaminated with fresh saliva, rinsed and dried. One group was cleaned with KATANA Cleaner for 10 seconds, rinsed and dried. Another group was merely rinsed and dried. Cylinders of Panavia SA Cement Universal were bonded and bond strength was determined in an Ultratester.

Cleaner	Bond Strength (MPa)
Water	7.3
KATANA Cleaner	27.2

Bond Strength to Dentin

Bifix Temp provisional resin cement was applied to dentin specimens, pressure was applied with a glass slide similar to that seating a provisional clinically, and the cement was light-cured through the glass slide for 20 seconds. The specimens were placed in a temperature/humidity chamber set to 35°C/95% humidity for 24 hours. The cement was removed and the specimens were cleaned with either a pumice slurry or KATANA Cleaner. Cylinders of composite were bonded using a self-etching adhesive and bond strength was determined in an Ultratester.

Cleaner	Bond Strength (MPa)
Pumice slurry	22.3
KATANA Cleaner	26.1

Retention

All evaluators except one had no dislodgements, with the one outlier reporting a few.

Packaging

Conventional black, plastic squeeze bottle in a sealed plastic bag that has product identification and expiration date on one side and is mainly clear on the other side. This second side has four pictograms on how to open, dispense, and close the flip-top bottle inside (see below), plus an additional pictogram demonstrating that you should not shake the bottle, which is reinforced by the copy immediately under the image telling you to "Do not shake".

With these explicit prohibitions about not shaking the bottle, you may wonder "why not" and "will it explode if I shake it?" It also may prompt the more rebellious to shake it anyway to see what happens! Alas, the official reason for not shaking the bottle is that it will foam and this will presumably reduce its cleaning effectiveness.

Note that the bags, however, are difficult to store on open shelves for easy retrieval and product identification. The aforementioned bottle is a more or less conventional, black squeeze type with imprinting on the front identifying the product and includes the expiration date, but this date is very difficult to read. Imprinting on the back of the bottle has another stern warning about not shaking it and a quick refresher on how to use it.

But the flip-top is what captures your attention immediately. There is a latch that when pressure is applied allows you to open the cap, dispense the material, and close the cap all with one hand. No unscrewing a cap, dispensing, and screwing it back closed. The flip mechanism works well and is very convenient.

All evaluators except one considered the packaging to be acceptable, with the lone outlier feeling it is exemplary.

Directions

Multi-lingual in annoying, plain paper foldout format. Straightforward information. Most (86%) evaluators considered the directions to be acceptable, while the other 14% felt they were exemplary. Some comments:

- Good, clear, easy to grasp quickly.
- Clear and concise.
- Very nice instructions.
- Thorough and easy to comprehend.
  What does this mean "... with the applicator brush for more than 10 seconds." How long is too long?!

Strengths

Easy to dispense, apply, and rinse off, able to use intraorally and extraorally, universal use on all restorative materials, more versatile than competition, fast application, increases bond strength to Lava compared to merely rinsing with water, increases bond strength to dentin compared to a pumice slurry, saves time, fun color, flip-top bottle.

Weaknesses

Rubbing/scrubbing a prep with an applicator tip can be cumbersome. More expensive than other cleaners like pumice.

BOTTOM LINE

While many indirect restorations have been successfully luted without a dedicated product for cleaning preps and intaglio surfaces, KATANA Cleaner offers some extra peace of mind with virtually no downsides.

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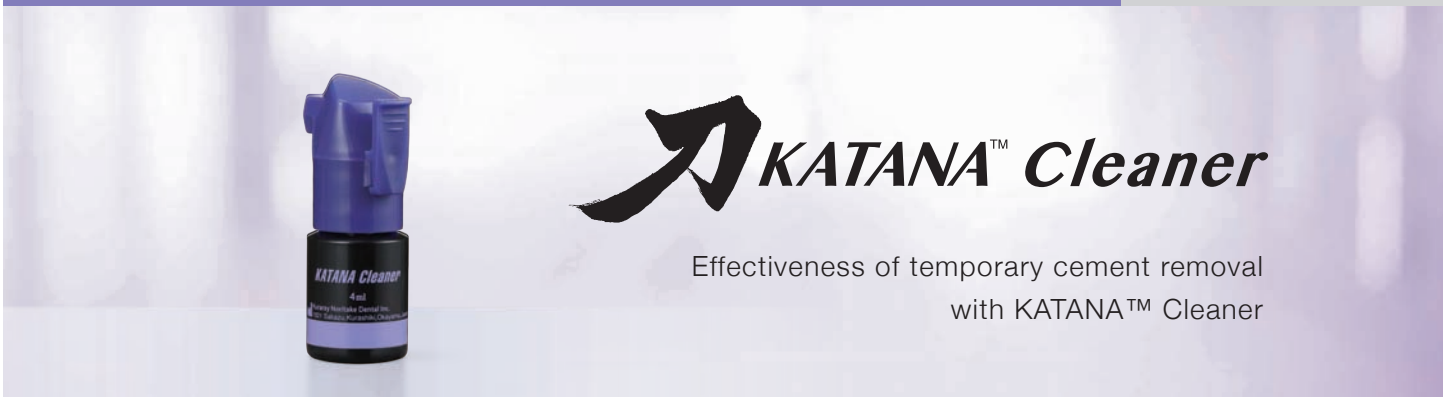
SCIENTIFIC REPORT

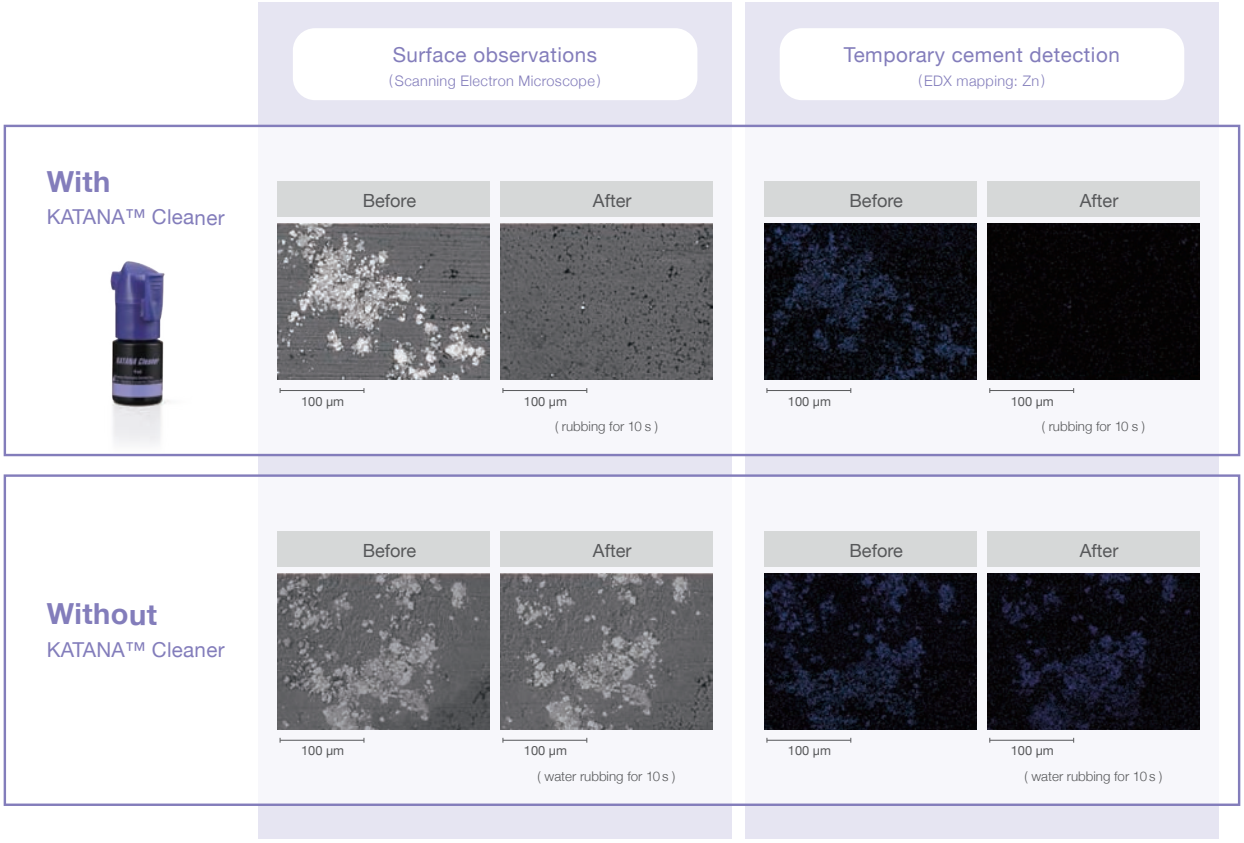


KATANA™ Cleaner

Effectiveness of temporary cement removal with KATANA™ Cleaner

Cleaning the Residues & Optimizing your Cementations

After the removal of the temporary crown before cementing a restoration, traditional cleaning methods of the abutment may not be enough for removing residual temporary cement which will reduce the bond strength. KATANA™ Cleaner has a high cleaning effect due to the surface active characteristic of MDP Salt, which is formed from the phosphate monomer "MDP" and an alkaline compound. It is a simple way to optimize your cementation procedures and recover the bond strength.



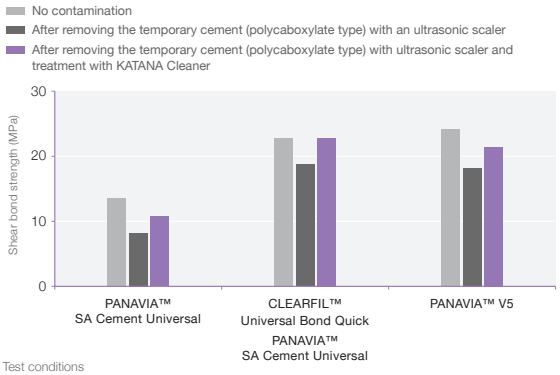
Test conditions
Adhesion surface treatment: 1) Polishing #1000 bovine teeth, 2) Temporary Crown (acrylic self-curing resin) was cemented with temporary cement (zinc polycarboxylate cement), 3) Stored at 37°C and 95% RH for 1 week, 4) Temporary Crown was removed and the temporary cement was removed with an ultrasonic scaler, 5) Rubbing with KATANA™ Cleaner for 10 s (upper images)/Water rubbing for 10 s (lower images).

Source: Kuraray Noritake Dental Inc.

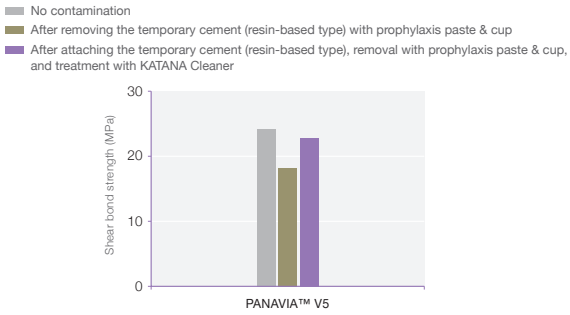
Improving the Bond Strength

As shown on the graphs below, removal of the residual cement either with an ultrasonic scaler or pumice paste & prophylaxis cup may not be enough. After cleaning with KATANA™ Cleaner, its high cleaning effectiveness contributes for an optimized bonding surface.

Temporary cement removed with:
Ultrasonic scaler



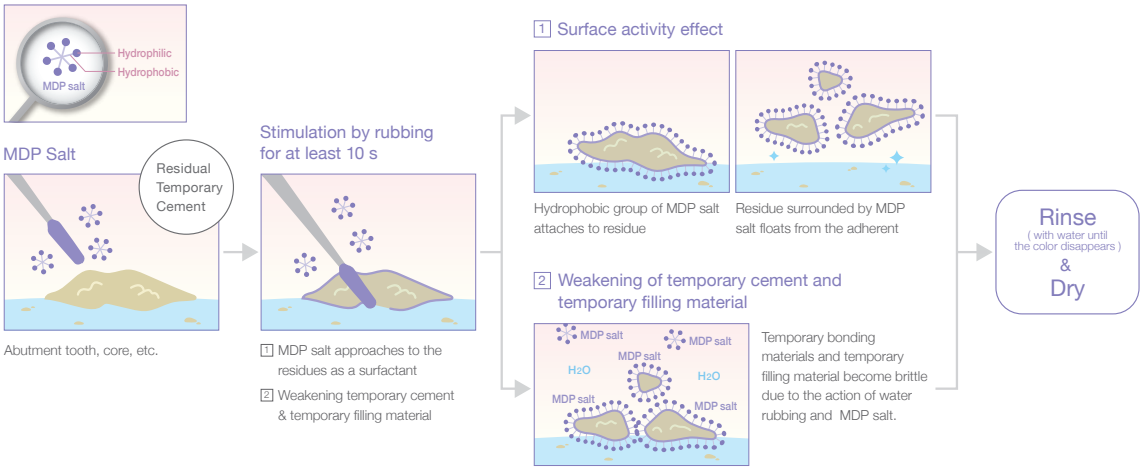
Pumice paste and prophylaxis cup



Test conditions
Adhesion surface treatment: 1) Polishing #1000 human teeth, 2) Temporary Crown (acrylic self-curing resin) was cemented with temporary cement (polycarboxylate type, resin-based), 3) Stored at 37°C 95% RH for 1 week, 4) Temporary Crown was removed and the temporary cement was removed with an ultrasonic scaler or pumice paste and prophylaxis cup at low revolution (5000 rpm, 10 s), 5) Cleaning with KATANA™ Cleaner.
Bonding strength measurement: 1) SUS chip (3mmφ) was bonded by each bonding operation (PANAVIA™ SA Cement Universal, CLEARFIL™ Universal Bond Quick/PANAVIA™ SA Cement Universal, PANAVIA™ V5), 2) Measured after storage in water at 37 °C for 1 day.

Source: Kuraray Noritake Dental Inc.

How it Works - schematic illustration -



Conclusion

Appropriate cleaning of the residual temporary cement before cementing a restoration is crucial for adequate cementation. KATANA™ Cleaner's high cleaning effect removes contamination to optimize your cementation procedures.

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- Before using this product, be sure to read the Instructions for Use supplied with the product.
- The specifications and appearance of the product are subject to change without notice.
- Printed color can be slightly different from actual color.

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