



# Dual Rinse® HEDP – Frequently Asked Questions

## What does HEDP mean?

- *HEDP is an abbreviation for 1-hydroxyethane 1,1-diphosphonate. The abbreviation HEBP and the term etidronate are also used to refer to the same molecule. However, HEDP is the most common designation.*

## How much HEDP is contained in one capsule?

- *One capsule of Dual Rinse® HEDP contains about 0.9 g of HEDP powder.*

## How does HEDP act?

- *HEDP is a mild decalcifying and stabilizing agent, which is commonly used in food hygiene, water cleaning, cosmetics, and in dishwashing tablets. HEDP is a chelator that binds calcium and other divalent metal ions.*

### **Do I have to adhere to a specific irrigation protocol?**

- *No. The mixture of Dual Rinse® HEDP and sodium hypochlorite can be used during instrumentation and as a final irrigant.*

### **Can I mix Dual Rinse® HEDP with an EDTA solution?**

- *Theoretically yes. However, this is unnecessary, as HEDP replaces EDTA.*

### **Can I mix Dual Rinse® HEDP with chlorhexidine (CHX)?**

- *No!  
Chlorhexidine (CHX) is a biguanide, which precipitates at high pH. Dual Rinse® HEDP was specifically designed to be used in conjunction with a sodium hypochlorite (NaOCl) solution. If you are looking for a mild disinfecting solution, it is better to use a diluted sodium hypochlorite rather than a CHX solution. Just add pure water to your NaOCl solution. NaOCl is a better disinfectant than CHX, especially against micro-organisms organized in biofilms. In addition, sodium hypochlorite solutions dissolve necrotic tissue remnants and the biofilm matrix.*

### **Are there any negative interactions between Dual Rinse® HEDP and calcium hydroxide?**

- *Quite the contrary. HEDP is stable in an alkaline environment and binds calcium. In the presence of HEDP, more hydroxyl ions are liberated from the calcium hydroxide in aqueous suspension. Hence, the effect of calcium hydroxide is sped up. Furthermore, a solution containing Dual Rinse® HEDP can be used to rinse the root canal system after a calcium hydroxide dressing in order to get a clean canal.*

### **Can I still use my laser, sonic or ultrasonic activation device for the combined NaOCl Dual Rinse® HEDP irrigant?**

- *Yes.*

### **Can I still heat my NaOCl solution when it is mixed with Dual Rinse® HEDP?**

- *No. Heating of NaOCl solutions containing Dual Rinse® HEDP is contra-indicated, as it triggers their interaction.*

## Can I throw the whole capsule directly into the irrigating solution?

- *No. The capsule needs to be opened and then the powder that is contained therein can then be dissolved in a sodium hypochlorite (10ml). To do that, fill the solution into the measuring cup, add the powder, and stir using a sterile spatula. This combined solution can then be drawn back into a 10-ml syringe.*

## For how long do I need to mix the Dual Rinse® HEDP powder with the irrigating solution?

- *The solution with the added powder should be stirred using a spatula. After less than 2 min, the powder should be completely dissolved, and the mixed solution can be drawn back into a 10-ml syringe.*

## **Does the concentration of the sodium hypochlorite (NaOCl) solution matter?**

- *The more concentrated the NaOCl solution, the more aggressive and reactive it becomes. In endodontics, solutions in the range of 0.5% and 3 % are recommended. Anything more concentrated is not supported by the current literature. However, interactions between NaOCl solutions of up to 5 wt% with Dual Rinse<sup>®</sup> HEDP have been investigated. The more concentrated the NaOCl solution, the earlier and the faster it starts to react with Dual Rinse<sup>®</sup> HEDP.*

## Can I use Dual Rinse® HEDP to irrigate before a revascularization procedure?

- *Yes; but before a revascularization procedure Dual Rinse® HEDP must be mixed with sterile water or with a sterile physiological saline solution. Do not mix the Dual Rinse® HEDP with NaOCl as a final irrigant (you can still use that combination during instrumentation). NaOCl is a proteolytic agent and destroys tissue factors that are necessary for the homing (attraction and differentiation) of pluripotent cells in the root canal system. See the protocol for a revascularization on our homepage “From Pros for Pros”.*

## Can I use 2 capsules rather than one?

- *In principle yes. When 10 ml of a sodium hypochlorite (NaOCl) irrigant are added, the resulting combined solution will then have a slightly stronger demineralizing effect. We recommend using 2 capsules per 20 ml of NaOCl solution in case it is intended to irrigate with higher volumes.*

## How do I save money by using Dual Rinse® HEDP?

- *First, Dual Rinse® HEDP saves time, because the irrigant does not have to be changed. And time, as we all know, is money! Then, by not having to use a second irrigant, I save one syringe (retail price approx. 20 cents) and one irrigation tip (retail price approx. 70 cents) and the EDTA (retail price approx. 70 cents per 5 ml).*

### **Can I store the mixed solution and/or use it for multiple treatments?**

- *No. Sodium hypochlorite is highly reactive. We did everything to not interfere with the NaOCl. However, after one-hour NaOCl starts to react with HEDP. Hence Dual Rinse® HEDP has to be mixed freshly before each individual treatment, and the resulting combined solution must not be used for more than one root canal treatment.*

Exception: *if you use a NaOCl solution of less than 3%, then the combined solutions can be prepared with a cooled NaOCl solution from the refrigerator, and filled syringes can be stored for the course of one working day in the refrigerator.*



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