

## **FACT SHEET:**

# **For New Zealand Cosmetic Teeth Whitening Association Registered Teeth Whitening Practitioners**

*Authorised by the New Zealand Cosmetic Teeth Whitening Association [NZCTWA] with the professional support of the Dentists, Chemists, Local Authorised Trainers and Global Teeth Whitening experts of NZCTWA Member Vendors including the World's foremost Teeth Whitening authority Beyond Dental and Health and its Dentist Founder Dr. Jenny Shen DDS, and Research Director Tara Erickson*

## **HYDROGEN PEROXIDE VS. CARBAMIDE PEROXIDE:**

### **WHAT'S THE DIFFERENCE?**

*(Source: Beyond WhiteSpa client information fact sheet)*

The two most common active ingredients in teeth whitening are hydrogen peroxide and carbamide peroxide (sometimes called urea peroxide). While the two are very closely related, there are several differences that should be highlighted in explaining why certain manufacturers use hydrogen peroxide and others use carbamide peroxide.

Hydrogen peroxide is "pure" hydrogen peroxide. In other words, it is not combined with any other chemicals. During use, it breaks down into water and oxygen while penetrating through the tooth enamel and breaking apart the longer carbon chain molecules that cause visible stains in the teeth. This oxidizing process is what causes the "whitening" effect.

Carbamide peroxide is hydrogen peroxide dissolved in urea crystals. As a result of the combination of hydrogen peroxide and urea, it is less powerful, weight-by-weight, than "pure" hydrogen peroxide. Although carbamide peroxide still has hydrogen peroxide as the active ingredient, it has to undergo one more step before it can whiten.

This extra step means that carbamide peroxide will act more slowly and will need to be on the teeth for longer.

Hydrogen peroxide is highly reactive and is effective for only about 30-60 minutes once it has been released from its suspended phase. By adding urea, it becomes more stable and can be stored for longer periods. However, it then only releases about 50% of its active ingredient in the first two hours. The rest is released over the next 4 to 6 hours.

In general, hydrogen peroxide products are used for 20-minute in clinic cycles use and carbamide peroxide is generally used for longer periods using trays without light activation. (Such as overnight trays)

In order to provide the most rapid and effective whitening treatment, most in-chair whitening gels contain hydrogen peroxide as the active ingredient. This shortens our treatment times, but it also means that following the proper storage\* instructions for the whitening gels is very important.