The most common problem associated with the use of maxillofacial prostheses are the degradation of their color and physical properties over time. These changes are mainly attributed to their exposure to Ultra-violet radiation, humidity, cleansing agents, body fluids, adhesives and sometimes, cosmetics. Silicone prostheses therefore need to be re-made periodically. It is, therefore important to enhance the life of silicone prostheses by preventing/minimising their degradation. This can be achieved by stabilization of the elastomers.

To study the effect of UV stabilizers (UV absorbers and Hindered amine light stabilizers) on the color change of silicone elastomer subjected to weathering.

Color change in a silicone mix can be due to degradation of the pigments or the silicone elastomer itself.

**Objective**

To study the effect of a UV stabilizers (UV absorbers and Hindered amine light stabilizers) on the color change of silicone elastomer subjected to weathering.

**Materials and Methodology**

- **Silicone:** Z004 1: 1 platinum based system (Technovent Ltd., UK)

- **UV stabilizers:**
  - Chimassorb 81 (BASF, India)
  - Uvinol 5050 (BASF, India)

**Color testing:** Spectrophotometer: Vita shade 3D master (Vident) using the CieLab system measuring the L,a,b values

**Weathering:** Environmental chamber and UV chamber

- The samples were heat cured at 80 degrees Celsius for 45 mins
- The material was manipulated and packed in the mold
- The surfaces of the samples were cleaned with acetone to remove any unwanted particles and the color was measured again
- Weathering in a UV chamber for 18 hours
- Weathering in an Environmental chamber for 72 hours
- Samples were measured (L,a,b values) using a spectrophotometer

**Comparison between the 2 Stabilizers**

- UV stabilizer 1 showed significantly lesser color change than UV stabilizer 2

**References:**

- Dave A. Tipton and J. West Lewis Effects of a hindered amine light stabilizer and a UV light absorber used in maxillofacial elastomers on human gingival epithelial cells and fibroblasts, J. Prosthet Dent Sep 2008