



# TOOHPASTE FORMULATION

TP- 0011215

## FORMULATION :

| Ingredient                                  | Function                 | Weight (%)     |
|---|--------------------------|----------------|
| 1. Sorbitol (70%)                           | Humectant/Sweetener      | 43.0           |
| 2. Deionized water                          | Diluent                  | Balance to 100 |
| 3. Silica                                   | Abrasive                 | 14.5           |
| 4. Glycerin                                 | Humectant                | 9.6            |
| 5. Sodium Lauryl Sulfate<br>(EMAL P/G/N)    | Surfactant/Foaming Agent | 1.0-2.0        |
| 6. Sodium Monofluorophosphate <sup>a)</sup> | Anti-Caries Agent        | 0.08           |
| 7. Xanthan Gum                              | Binder                   | 0.43           |
| 8. Carbopol 974P NF Polymer <sup>b)</sup>   | Binder                   | 0.35           |
| 10. Sodium Saccharin                        | Sweetener                | 0.2            |
| 11. Sodium benzoate                         | Preservative             | 0.1            |
| 12. Flavour, color                          |                          | q.s.           |

<sup>a)</sup> F content should be 100 ppm as max dosage.

<sup>b)</sup> This material could be changed to the other binder if there is difficulty in getting it.

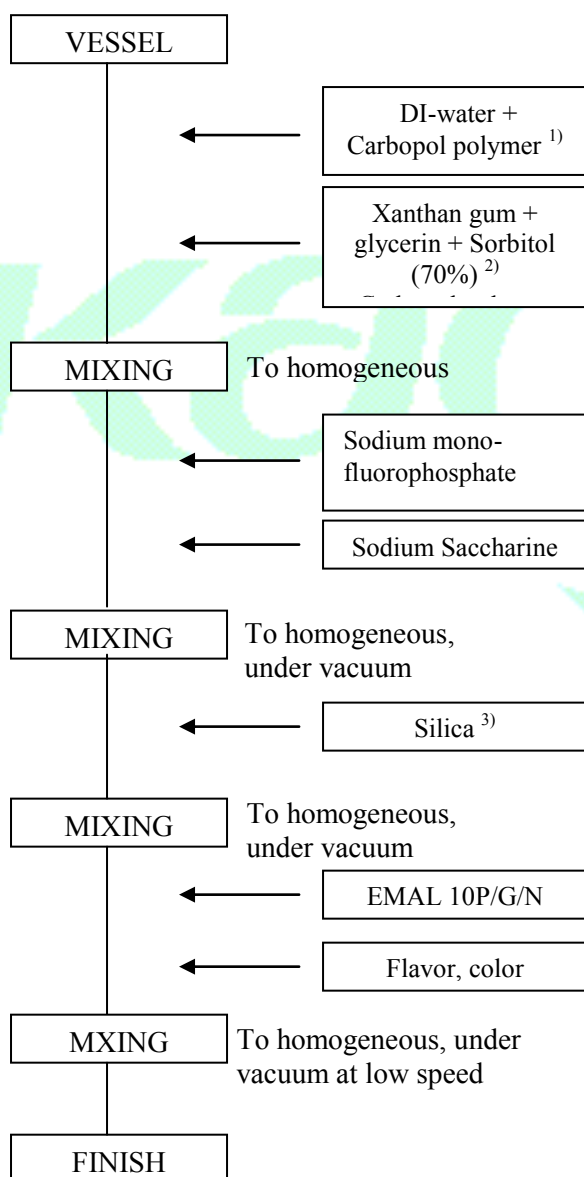
## PRODUCT PROPERTIES :

|   |                   |
|---|-------------------|
| - Appearance                                | : Translucent gel |
| - pH (10% solution)                         | : 5.3             |
| - Viscosity<br>Brookfield RVT, 25°C, 20rpm) | : 28000 cPs       |

**Note :** The viscosity and the pH of formulation may be adjusted upward with addition of a neutralizing base. It can be use NaOH (18%) and/or Na<sub>3</sub>PO<sub>4</sub>.

## PROCEDURE :

1. Disperse Carbopol polymer into the water. Mix slowly for around 15 minutes to hydrate.
2. Pre-wet xanthan gum into glycerine and then hydrate with sorbitol (70%). Mix well for around 15 minutes to thicken and smooth the dispersion.
3. Combine Carbopol polymer and xanthan gum dispersion and mix for around 10 minutes until smooth and homogeneous.
4. Add sodium monofluorophosphate and sodium saccharine into the combined phase. Mix well for around 10 minutes under vacuum to remove the entrapped air.
5. Add silica. Mix slowly for 1 minute to incorporate the abrasive into the gel base. Mix more rapidly under vacuum to disperse the silica.
6. Transfer / add EMAL 10 P/G/N into with any color and flavor to mixing vessel. Mix at low speed under vacuum until homogeneous.



<sup>1)</sup>. Disperse Carbopol polymer in DI-water. Mix slowly for around 15 min.

<sup>2)</sup>. Pre-wet xanthan gum into glycerin and then hydrate with sorbitol. Mix well for around 15 min.

<sup>3)</sup>. Mix slowly 1 minute for incorporate the abrasive into the gel phase. then mix more rapidly to disperse the silica.