

## Oral Care Formulations

### Refresh Transparent Gel Toothpaste

Formula# M300-3010E

Material# 878352

A gel toothpaste with capsules containing fruity, breath-freshening flavor.

Ingredients (Trade Name)	INCI Name	% w/w	Supplier
<b>Phase A</b>			
Sorbitol	Sorbitol 70% Solution	66.00	Solvo Chem
Distilled Water	Aqua/Water	QS to 100	In-House
<b>Phase B</b>			
Sodium Saccharin	Sodium Saccharin	0.3	Merck
FD&C Blue 1	CI 42090	0.0004	BASF
<b>Phase C</b>			
<b>Blanose™ 7M8SF Sodium Carboxymethylcellulose (CMC)</b>	<b>Cellulose Gum</b>	<b>0.90</b>	<b>Ashland</b>
Polyethylene Glycol (PEG 400)	PEG 400	2.00	Merck
<b>Phase D</b>			
Zeodent* 113	Silica	9.00	Huber
Zeodent *165	Silica	9.00	Huber
<b>Phase E</b>			
Sodium Lauryl Sulfate	Sodium Lauryl Sulfate	2.00	Merck
<b>Phase F</b>			
Peppermint Flavor STU1503520	Flavor	1.20	Takasago
<b>Phase G</b>			
<b>Captivates™ HC 5773 encapsulates</b>	<b>Aqua/Water [and] Caprylic/Capric Triglycerides [and] flavor [and] Gelatin [and] Acacia Senegal Gum [and] CI 77891 [and] Potassium Sorbate [and] Mica [and] Xanthan Gum</b>	<b>0.75</b>	<b>Ashland</b>
<b>Total</b>		<b>100.00</b>	

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### Lab processing procedure

1. Add water and sorbitol to the mixer.
2. Add Phase B ingredients and mix for 10 minutes at 600 rpm.
3. Disperse 7M8SF CMC into PEG-400 and add it slowly to above premix under agitation. Mix it for 15 minutes at 800 rpm.
4. Transfer the premix to Ross mixer.
5. To the premix, add silica and mix briefly with no vacuum until the particles are wetted out. Then mix for 15-20 minutes at 80 rpm, under vacuum.
6. Add the sodium lauryl sulfate and mix for 5 minutes at 10 rpm, with no vacuum. Mix for additional 5 minutes at 10 rpm under vacuum.
7. Add the flavor and mix for 10 minutes at 10 rpm, under vacuum.
8. Add Captivates™ HC 5773 encapsulates and mix for 2 minutes at 10 rpm, under vacuum.

### Typical Properties

<b>Appearance:</b>	Light blue transparent gel with white capsules
<b>pH:</b>	6.5 – 6.8
<b>Viscosity:</b>	170,000 – 200,000 cP (Brookfield RVT/Helipath Spindle F/20 RPM/1 minute/25°C)

This formula has passed 3-months accelerated stability test and a 28-day preservative efficacy test. However, the preservative system and flavor have not been optimized.

\*Third party trademark

Version 1.0 Oct 2016

