

# Preparation of a Lipstick

Tested with

**OV 625 Digital** (Code F20900475) and **D20-S20C-P-R20C Dispersing tool** (Code A00000478),

**AREX 5 DIGITAL system with Probe** (Code SA20500580) and **Magnetic stir bar Ø6x35 mm** (Code A00001056)



## Introduction

Lipsticks differ from the simplest lip balms mainly due to the presence of pigments within the mixture of which they are composed, oils and waxes. Besides oils and waxes, other ingredients such as emollients, pigment dispersants, preservatives and fragrances are widely used. Some products with specific purposes may incorporate some specific additives, such as UV protective agents. However, even though these products have different applications, the main components forming the structure maintain fundamentally similar relationships. Therefore, generally, for the production of lipsticks and lip balms the ratio between oil, wax and possibly the pigment (which is typically replaced by sunscreens or other active ingredients) is: oil (50-70%) – wax (20 -30%) – pigment (5-15%).

## Rotor/Stator working principle

The high-speed rotation of the rotor within the stator exerts a suction force, drawing liquid and solid materials towards the centre of the dispersing tool. The centrifugal force of the rotor allows larger particles to come into contact with the stator, resulting in a decrease in their size. The motion is continuous and constant throughout the mixing cycle and the new, smaller particles are ejected from the dispersing tool and new material is reintroduced maintaining the mixing cycle. The sample is thus subjected to a mechanical shear force which allows it to be homogenised, emulsified, suspended or rapidly disintegrated.

## Experimental settings and analysis procedure

### Phase A

Shea Butter	30%
White ozokerite resin	19%
Octyldodecanol	30%
Olivem 1000	6%

### Phase B

D&C Red 7:Octyldodecanol (1:4)	15%
--------------------------------	-----

### Phase A preparation (Image A)

- The ingredients are heated to 80-85°C and stir with the [AREX 5 Digital](#) until they melt.

### Phase B preparation (Image B)

- Disperse the dye in the oil phase (Octyldodecanol) for 5 minutes at 20,000 rpm.

### Dispersion of Phase B in Phase A

- Perform this process with the OV 625 Digital for 3 minutes at a speed of 20,000 rpm.

### Final step (Image C)

- Place the new phase into the appropriate molds to create the lip stick.



Image A



Image B



Image C

## Conclusion

The [OV 625 Digital](#) enables to achieve excellent results in an extremely short time, avoiding the formation of phase agglomerates, and reducing current consumption and environmental noise, whilst ensuring high product quality, repeatability and ease of use.