

## CONTENTS

	Page
1. How to Formulate	1
- Dilute	1
- Perfume	1
- Colour	2
2. How to thicken liquid soap	2
3. Stability Guidance	3
4. Microbiology Guidance	3
5. Product Safety	3
6. Storage	3

## 1. HOW TO FORMULATE

### Diluting Liquid Crystal Concentrate

Liquid Crystal Concentrate requires diluting with water, we recommend 25 – 40 % Liquid Crystal Concentrate. The temperature of the water should be between 20-40DegC.

### Perfuming Liquid Crystal Concentrate

Trials in our laboratories have shown that most perfumes can be used successfully.

**Note:** The choice of perfume may impact:

- Ease of use and solubility
- Stability of the soap at low temperatures
- Colour and clarity of the soap

Fragrances levels of 1% or less usually give an acceptable odour and rarely cause stability problems. The clarity of the product tends to improve after a period of standing.

## Colouring Liquid Soap

Liquid Soap can be made in almost any colour by adding colourants.

Add a small amount of colour to the base and build until the desired colour is reached. Both powder and liquid colourants can be used. If having trouble dissolving powdered dyes into the liquid soap base, dissolve the powder into a small amount of water prior to addition. Though this may affect the viscosity.

It is advised that a 3% maximum of additives to be added to the base including 1% maximum for fragrance. Levels of 3% or more may affect colour and clarity of soap at low temperature.

## 2. HOW TO THICKEN LIQUID CRYSTAL CONCENTRATE

It is important to add the additives before salt thickening as if this is done afterwards the base may not thicken as desired.

Sodium Chloride (common salt) should be used to thicken the diluted base. Start adding salt solution at 0.2% increments until the desired thickness is reached. Stir thoroughly until salt is dissolved. After each addition leave the base to stand for 5 minutes as the viscosity will build. 2% salt addition is the maximum as the base will start to thin after this point.

- Dilute Liquid Crystal Concentrate
- Add additives (fragrance, colour etc)
- Add salt at 0.2% increments.

Depending on additives added to Liquid Crystal Concentrate, different levels of salt will be required to thicken.

### 3. STABILITY GUIDANCE

During the development of this base our standard stability testing protocol was successfully conducted, this included monitoring for a 12-week period under the following conditions: Ambient (light & dark), Fridge (5°C), Oven (40°C)

Once the base has been used to formulate a final finished product, via the addition of additives, fragrance, or salt thickening, we highly recommend that additional stability is conducted to verify the final product.

### 4. MICROBIOLOGY GUIDANCE

Soap base has an alkaline pH, this naturally creates a hostile environment for microbes. Soaps with alkaline pH>9 present an environment unfavourable for the growth of microorganisms. As a result, preservation is not usually required.

To verify this risk theory (BS ISO 29621:2010), we have conducted microbiological challenge testing on representative soap bases to ensure the robustness of the bases.

Once the base has been used to formulate a final finished product, via the addition of additives and fragrance, we highly recommend that additional microbiological challenge testing is conducted to verify the final product.

### 5. PROUCT SAFETY

Our product bases have been formulated to comply with the Cosmetic Product Regulation (EU) No.1223/2009.

Once the base has been used to formulate a final finished product, via the addition of additives and fragrance, a final Cosmetic Product Safety Report (CPSR) will be required for sale in the EU/UK.

## 6. STORAGE

Optimum storage conditions 5-30°C

For base shelf-life, see delivery certificate of analysis (CofA).

For more info, tips and troubleshooting tricks on our soap bases, visit our website  
[www.stephensonpersonalcare.com](http://www.stephensonpersonalcare.com)