### Preparation of the primary emulsion

1. Measure the oil accurately in a dry measure. Transfer the oil into a large dry porcelain mortar, allowing all the oil to drain out.
2. Measure the quantity of aqueous vehicle required for the primary emulsion. Place this within easy reach.
3. Weigh the emulsifying agent and place on the oil in the mortar. Mix lightly with the pestle, just sufficient to disperse any lumps. Caution: overmixing generates heat, which may denature the emulsifying agent and result in a poor product.
4. Add all of the required aqueous vehicle in one addition. Then mix vigorously, using the pestle with a shearing action in one direction.
5. When the product becomes white and produces a clicking sound, the primary emulsion has been formed. The product should be a thick, white cream. Increased degree of whiteness indicates a better-quality product. Oil globules or slicks should not be apparent.

### Dilution of the primary emulsion

1. Dilute the primary emulsion drop by drop with very small volumes of the remaining aqueous vehicle. Mix carefully with the pestle in one direction.
2. Transfer emulsion to a measure, with rinsings. Add other liquid ingredients if necessary and make up to the final volume.

## Worked examples

### Example 4.1

### The preparation of a magistral formulation from a doctor's prescription

You receive a prescription in your pharmacy with the following details:

| | |
|---|---|
| **Patient:** | Mrs Fiona Archer,<br>34 Whittington Terrace, Astonbury |
| **Age:** | 40 |
| **Prescription:** | Cod liver oil 30% v/v emulsion |
| **Directions:** | 10 ml tds ac |
| **Mitte:** | 200 ml |

1. **Use of the product**
   Used as a source of vitamin A and D. Also contains several unsaturated fatty acids (*Martindale* 31st edn, p 1357).