The quantities for primary emulsions (in parts) are summarised in the key points box.

Wet gum method

The proportions of oil, water and emulsifying agent for the preparation of the primary emulsion are the same as those used in the dry gum method. The difference is in the method of preparation.

Using this method the acacia powder is added to the mortar and then triturated with the water until the gum is dissolved and a mucilage formed. The oil is then added to the mucilage drop by drop whilst triturating continuously. When nearly all the oil has been added the resulting mixture in the mortar may appear a little poor with some of the oil appearing to be absorbed. This can be rectified by the addition of slightly more water. The trituration continues until all the oil has been added, adding extra small amounts of water when necessary. When all the oil has been added triturate until a smooth primary emulsion is obtained.

In the main, this method has fallen out of favour as it takes much longer than the dry gum method. It should be noted that there is less chance of failure with this method provided the oil is added very slowly and in small quantities. It also means that the reasons for failure when using the dry gum method (outlined above) have been eliminated.

General method of preparation of an emulsion using the dry gum method

It is relatively easy for an emulsion to crack, resulting in a failed product. Remember that the key points opposite are critical when preparing emulsions.

The preparation of an emulsion has two main components:

1. preparation of a concentrate called the primary emulsion
2. dilution of the concentrate.

KeyPoints

The ratio of oily phase to aqueous phase to gum in a primary emulsion

Type of oil	Oil	Aqueous	Gum
Fixed	4	2	1
Mineral	3	2	1
Volatile	2	2	1

Tips

Accurate weighing and measuring of the components in the primary emulsion are important when making the primary emulsion to prevent the emulsion breaking down on storage or dilution.

KeyPoints

Clean, dry equipment
All equipment should be thoroughly cleaned, rinsed with water and carefully dried before use, particularly measures, mortars and pestles.

Accurate quantities
Accurate quantities are essential. Check weighing/measuring technique and minimise transference losses; for example, allow oil to drain from measure.

Have all ingredients ready
Correct rate of addition is important. Ingredients for the primary emulsion should all be weighed and measured before starting to make the product.