

8. Making soap

Soap is important in preventing the spread of disease by helping people keep themselves, their clothes and their surroundings clean. In some places, soap is unavailable or expensive. This Technical Brief gives some practical guidelines on a cheap, easy way to make soap on a small scale, using ingredients which are available locally.

The principle

Soap is made by combining oils and fats with an alkali. The alkali breaks down the oils and fats into smaller molecules which are soluble in water. This process is called saponification. The resulting soap molecules have a hydrophilic (water-loving) head and a hydrophobic (water-fearing) tail. The hydrophobic tails of soap molecules surround dirt and grease, forming micelles which are suspended in water. This allows dirt and grease to be washed away.

Basic recipe

4 parts oil / 3 parts alkali / 2.5 parts water / 13 parts ash
 -3 0 parts oil / 3 parts alkali / 2.5 parts water / 13 parts ash
 -1.2 parts oil / 5 parts alkali

Choosing oils and fats

Choose oils and fats that are readily available and of good quality. Avoid rancid oils and fats. The following are some common oils and fats used in soap making:

- * Olive oil
- * Coconut oil
- * Palm oil
- * Tallow



24 parts oil / 3 parts alkali / 2.5 parts water / 12 parts ash
 32 parts oil / 3 parts alkali / 2.5 parts water / 12 parts ash
 *

Category	Composition	Type of Soap	Ratio of caustic soda: oil
3 parts oil / 3 parts alkali / 2.5 parts water / 13 parts ash	4 parts oil / 3 parts alkali / 2.5 parts water / 13 parts ash	3 parts oil / 3 parts alkali / 2.5 parts water / 13 parts ash	1
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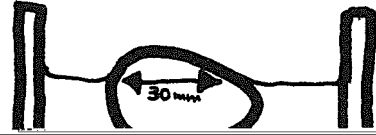
Making soap

Alkalis

To make caustic potash



5 gallon/19 litre wooden barrel



The lye is the

Strength of alkali

4.53 2.5
4

Water

1. Measure 150 ml (1/2 cup) of water into a measuring cup.
2. Add 150 ml (1/2 cup) of water to the mixture.
3. Stir (1 minute).

4. Add 150 ml (1/2 cup) of water to the mixture.

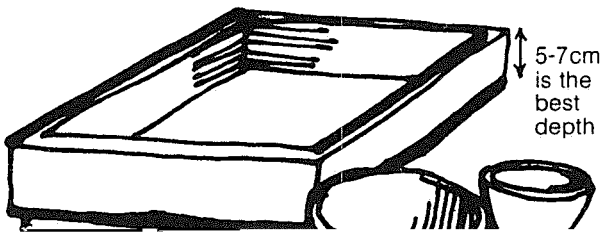
5. Stir (1 minute).
6. Add 150 ml (1/2 cup) of water to the mixture.
7. Stir (1 minute).
8. Add 150 ml (1/2 cup) of water to the mixture.
9. Stir (1 minute).

Equipment

1. A large bowl or bucket.
2. A measuring cup.
3. A whisk or spoon.

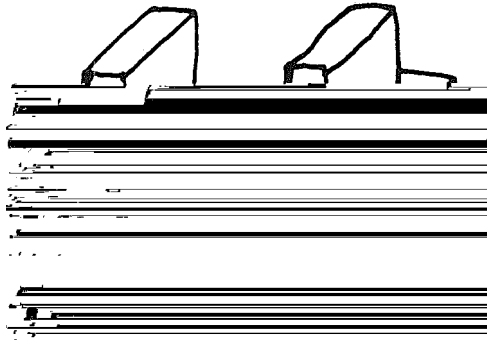
Method

1. Add 150 ml (1/2 cup) of water to the mixture.
2. Stir (1 minute).
3. Add 150 ml (1/2 cup) of water to the mixture.
4. Stir (1 minute).

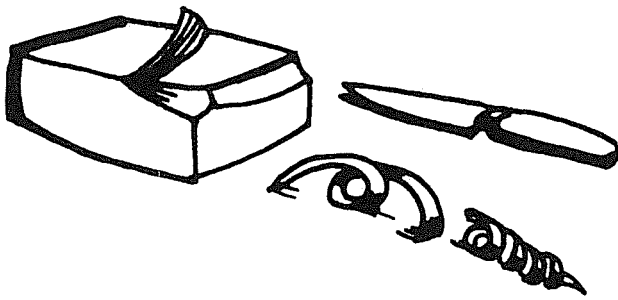


Making soap

- 1. The soap is made in a mold.
- 2. The soap is cut into bars.



- 3. The soap is packed in a box.
- 4. The soap is ready for sale.



Perfume

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- 8. The soap is ready for sale.
- 9. The soap is ready for sale.
- 10. The soap is ready for sale.

For more information

1. *Small-scale soap-making: a handbook*, ...
2. *The preparation of soap*, ... 101 ...
3. *Soap manufacture by the cold process*, ...
4. *Make your own soap: an aid to extension and village workers in Ghana*, ... 3 ...
5. *VITA Village Technology Handbook*, 1 15 ... 2220 ...
6. ... 1 3 ...
7. ...



Problems?

- 1. The soap is made in a mold.
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Using dirty or rancid fat

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