



# Home Soap Making

An updated, safety-focused guide to cold process and transparent soap

## SAFETY FIRST

Sodium hydroxide (lye/NaOH) can cause severe skin and eye burns. Do not work without safety goggles, chemical-resistant gloves, long sleeves and strong ventilation. Keep children and pets away from the work area.

## Essential Safety Rules

- Always add lye slowly to cold water; never pour water onto lye.
- Use heat-resistant stainless steel or suitable plastic; never use aluminum.
- Do not inhale lye fumes. Prepare the solution away from your face in a well-ventilated area.
- Ethanol is highly flammable. Do not use it near flames, sparks or cigarettes; use only controlled electric heat.
- Before following a recipe, verify all quantities with a reliable lye calculator using the actual oils selected.
- If lye contacts the eyes or skin, rinse immediately with plenty of room-temperature water for at least 15-20 minutes and seek medical help.

## A Safer Option for Beginners

For first-time soap makers, pre-saponified melt-and-pour bases are safer than working directly with lye.

# 1. Cold Process Soap

This formula combines the source documents with updated wording and safety guidance.

| Ingredient              | Amount    |
|-------------------------|-----------|
| Olive oil               | 214 g     |
| Palm oil                | 150 g     |
| Coconut oil             | 114 g     |
| Sodium hydroxide (NaOH) | 66 g      |
| Cold water              | 180 g     |
| Fragrance oil           | 10-15 ml  |
| Soap colorant           | 4-5 drops |

## Required Equipment

- 0-100 °C thermometer, precision scale, safety goggles and gloves
- Stainless steel mixing bowl, heat-resistant lye container, stick blender or spatula
- Silicone mold or a suitable lined mold, plus a towel

## Procedure

- Prepare the mold. Silicone molds do not need lining. Put on protective equipment and ventilate the area.
- Slowly add the measured lye to the measured cold water while stirring. Cool the hot solution safely to 38-45 °C.
- Melt and combine the oils, then bring them to 38-45 °C.
- When the temperatures are similar, slowly add the lye solution to the oils while mixing.
- At light trace, when the mixture becomes creamy and leaves a faint trail, add fragrance and color.
- Pour into the mold, cover and wrap with a towel. Check firmness after 16-24 hours.
- After unmolding, cure in a ventilated place away from direct sunlight for 4-6 weeks. Verify pH and product safety before use.

## 2. Transparent Soap

This ethanol-based method is advanced and requires careful control because of fire and chemical-burn risks.

| Ingredient               | Amount  |
|--------------------------|---------|
| Coconut oil              | 138 g   |
| Palm oil                 | 138 g   |
| Castor oil               | 117 g   |
| Sodium hydroxide (NaOH)  | 72 g    |
| Cold water               | 153 g   |
| Glycerin                 | 94.2 g  |
| Granulated sugar         | 101.4 g |
| Ethanol (96%)            | 232.8 g |
| Water for sugar solution | 78 g    |

### Procedure Summary

- Prepare the molds. Wear protective equipment, ventilate the area and turn off every flame and spark source.
- Slowly add lye to cold water and cool the solution to 49-54 °C.
- Melt the oils and bring them to 49-54 °C. Slowly add the lye solution and blend until trace forms.
- Add glycerin. During the ethanol stage use only controlled electric heat and never leave the container unattended.
- Dissolve the sugar separately in hot water. Add it in a controlled manner and process carefully until transparency develops.
- Add fragrance and very little color, then pour into the mold. Surface bubbles may be treated only with a fine alcohol mist in a safe, spark-free area.
- After complete cooling, unmold and leave in a ventilated area until the alcohol odor dissipates and the product stabilizes. Verify pH and safety before use.

**Important:** Do not use this method in a home environment where children are present. Ethanol vapor ignites easily; never use an open-flame stove.

# Checklist and Sources

## Before You Begin

- The recipe and lye amount have been recalculated and verified.
- Goggles, gloves and long sleeves are ready.
- The work area is ventilated; children and animals are kept away.
- No aluminum equipment is present; all containers are heat- and chemical-resistant.
- For the ethanol method, all flames and spark sources are turned off.
- Plenty of running water is immediately available for emergencies.

## Sources

This guide combines and updates two earlier Bosnali Soap documents supplied by the user. The following references were used to verify safety guidance:

CDC/NIOSH - Sodium Hydroxide Pocket Guide: <https://www.cdc.gov/niosh/npg/npgd0565.html>

CDC - Occupational Exposure to Sodium Hydroxide: <https://stacks.cdc.gov/view/cdc/19348>

OSHA - Ethanol and flammable-liquid safety: <https://www.osha.gov/otm/section-4-safety-hazards/chapter-5>

Poison Control - Home soap-making safety: <https://www.poison.org/articles/is-it-safe-to-make-soap>

## Bosnali Soap Oil and Chemical Products Industry and Trade Ltd.

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