Taking a Reliable Impression

Checklist for Impressions

- ❑ Alginate material rolled over the edge of the tray (adds strength for retention)
- ❑ Proper depths showing all gingival tissue margins
- ❑ Midlines are represented clearly in the impressions
- ❑ Muscle definition is visible
- ❑ Molars in distal segment are fully captured
- ❑ Smooth anatomical contours

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An accurate impression is critical to ensure good appliance fit and minimal chair-side adjustment. An appliance that fits the model it was made on but not the patient indicates that distortions may have occurred in the impression-taking or model-pouring procedures.

Selecting an Impression Tray

Trays are made of metal, plastic, or Styrofoam and are either disposable or can be sterilized. They may have perforations, mesh liners, or grooves to retain the impression material. Metal and plastic trays without retentive features must be painted with an adhesive to prevent the impression material from separating.

A metal rim lock tray offers retention as well as excellent adaptation. Perforated trays, although retentive, do not provide the same force of alginate adaptation around the dentition because the material flows through the vents before adaptation, minimizing detail of the teeth and tissue. If choosing a vented tray, select a style with smaller perforations. The rim lock tray offers more resistance so the material can adapt properly, reducing porosity (air bubbles) and resulting in crisp anatomical detail.

Once the tray style has been identified, the tray size that best fits the patient is selected. The tray should be large enough to avoid impinging the soft tissue or interfering with the dentition, and should cover the last tooth in the arch or retromolar pad areas. However, it should not be so large that excess impression material is needed to fill the void between the tray and oral anatomy.

Selecting an Alginate Impression Material

Once the impression tray has been selected, the next consideration is the type of impression material to be used. Alginate (irreversible hydrocolloid) is the most common material used to make impressions.

Some considerations in selecting an alginate material are accuracy, dimensional stability, setting time, taste, and compatibility with the gypsum or stone.

For patients with a sensitive gag reflex, a fast-set alginate is advised such as Kromopan™. An irreversible hydrocolloid, Kromopan changes color during each stage of impression-taking, requires minimal time in the patient's mouth, and remains dimensionally stable for 48-100 hours prior to pouring. Kromopan features a unique tri-color changing process indicating the correct time for spatulating (purple), loading the tray (pink), and placement of tray (white).

The shelf life of alginate is approximately one year, if stored in a cool, dry environment. An unusually thinner mix is a sign of potential contamination or outdated material, which will cause model distortion and lead to poor appliance fit.

Preparation

Before the alginate is poured into a mixing bowl, the material should be rolled or tumbled within the container to fluff the powder and mix the ingredients. Kromopan does not require fluffing. Ratios of powder to liquid can vary depending on material types. Follow the manufacturer's instructions.

Step 1: Mixing

Pour measured water into a clean mixing bowl and then add powder. To mix, use an alginator or mix by hand. If using an alginator, follow the manufacturer's recommended instructions. If hand-mixing, rapidly mix with a spatula, pressing the mixture against the side of the bowl. Mixing time is approximately 1 minute. At this point, the mix should be a smooth, creamy consistency that does not fall from the spatula.

If using Kromopan, measure the powder first (A) into the bowl and then add the water (B). Use a wet spatula for mixing. Mixing time is approximately 40 seconds by hand and the mixture will turn purple (C). When the mixture is pink, it is ready to load into the tray.


A


B

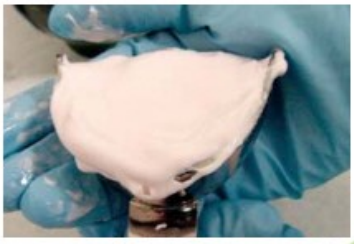

C

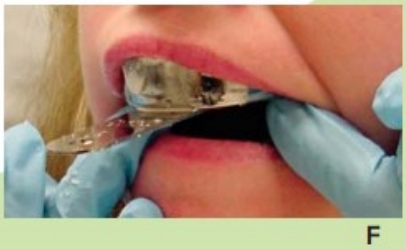

D

Step 2: Loading Tray and Placement

If the tray does not have a rim lock edge or enough perforations, rope (periphery) wax can be added around the edge of the tray. It will increase patient comfort and the ridge of wax will help hold the alginate to the tray edges.

Load the alginate mix into the tray (D). The mixture will turn white (E) when it is ready to insert into the patient's mouth. Insert the tray and press onto the dentition (F). The patient's lips must be pulled slightly outward to allow the impression tray to seat between the oral anatomy and the lips (upper or lower). For Kromopan, setting time in the patient's mouth is approximately 10-20 seconds. For standard alginate, setting time is approximately 2 minutes.


E


F

Step 3: Removal

Hold the tray handle with one hand. With the other hand, gently loosen the tray along the top edge around the arch (G). When you feel the tray release, gently pull the tray straight down (upper) or up (lower) away from the teeth.


G

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Step 4: Rinse and Disinfect

Once removed, lightly rinse the impression with tap water and shake off excess moisture. Spray the impression with a disinfectant and drain. Do not allow the disinfectant to lay in the impression longer than the recommended “kill time” as the solution can erode the alginate. Rinse and wrap in a wet paper towel until the work models are poured. For best results, the model should be poured within 30 minutes after the suppression is obtained.

If using Kromopan, disinfect, rinse (H), and shake off excess water. Place in a sealable plastic bag (I). Do not use wet paper towels or cotton rolls as the Kromopan impressions could distort and become brittle. Models can be poured up to 48-100 hours after the impression is obtained.

H

I

Packing Impressions for the Laboratory

Haven Ortho does not recommend sending alginate impressions directly to the Laboratory.

If impressions are routinely sent directly to the Lab. Kromopan impressing material is recommended due to its long-last dimensional stability.

if alginate impressions are used, lightly pack the void of the impression with damp (not soaked) paper towels. Then, wrap the entire impression with damp paper towels and place in a sealable plastic bag. Do not include the prescription paperwork in the same plastic bag.

Prior to placing the seal bag (containing the wrapped impression) in the shipping box, completely surround the bag with packing material to secure it during shipping. Fill all voids in the box. Make sure the impression cannot move during shipping. To prevent distortion or damage, the impression should not be exposed to extreme temperature conditions (hot or cold).

Products Featured in this Section

- **Impression Trays**
  Metal or plastic upper and lower impression trays
- **Alginate**
  2 scoops, and 1lb. of alginate.
- **Hygienic Mixing Bowls**
  Size varies
- **Spatula**
- **Alginate Mixer**
  or by hand

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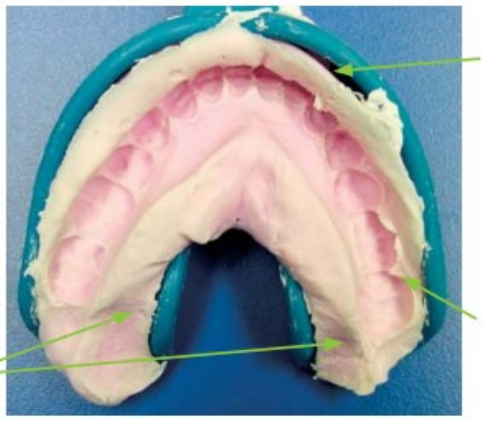
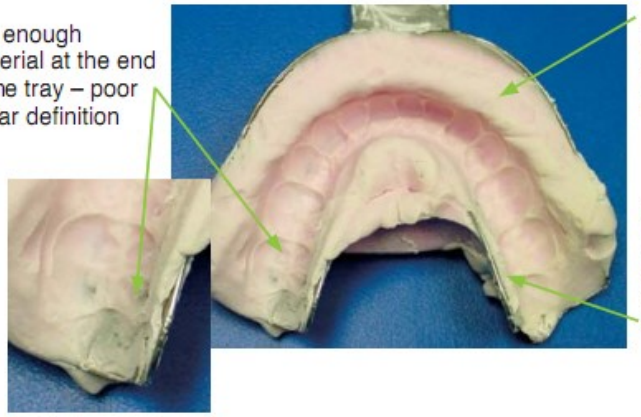
Examples of impressions that could result in a poorly fitting appliance and increase your chair-time.



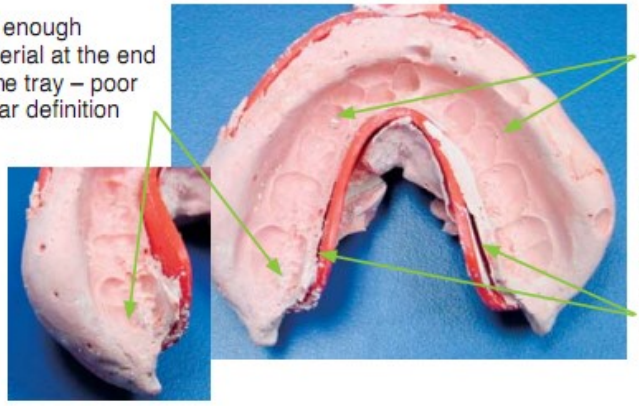
Technician's notes:

- The plastic tray may not have been sprayed with a silicone adhesive prior to use.
- Alginate begins to shrink as soon as it comes out of the mouth. It should be poured within 30 minutes after the impression is taken.
- Incorrect tray size, not wide enough at molar.
- The tray may have been taken out too soon and the material did not set.
- Will require a call to the doctor's office from the Laboratory.



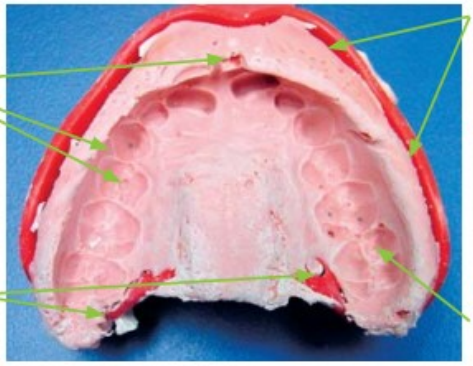
Technician's notes:

- Can be caused by incorrect tray size.
- The tray may not have been seated properly in the patient's mouth – the dentition must be centered anteriorly and posteriorly prior to seating.



Technician's notes:

- The tray may not have been seated properly in the patient's mouth – the dentition must be centered anteriorly and posteriorly prior to seating.
- The plastic tray may not have been sprayed with a silicone adhesive prior to use.
- Alginate begins to shrink as soon as it comes out of the mouth. It should be poured within 30 minutes after the impression is taken.



Technician's notes:

- Air bubbles can be caused if the material is not properly spatulated or if the alginate/water ratio measurements were inaccurate.
- The plastic tray may not have been sprayed with a silicone adhesive prior to use.
- Alginate begins to shrink as soon as it comes out of the mouth. It should be poured within 30 minutes after the impression is taken.