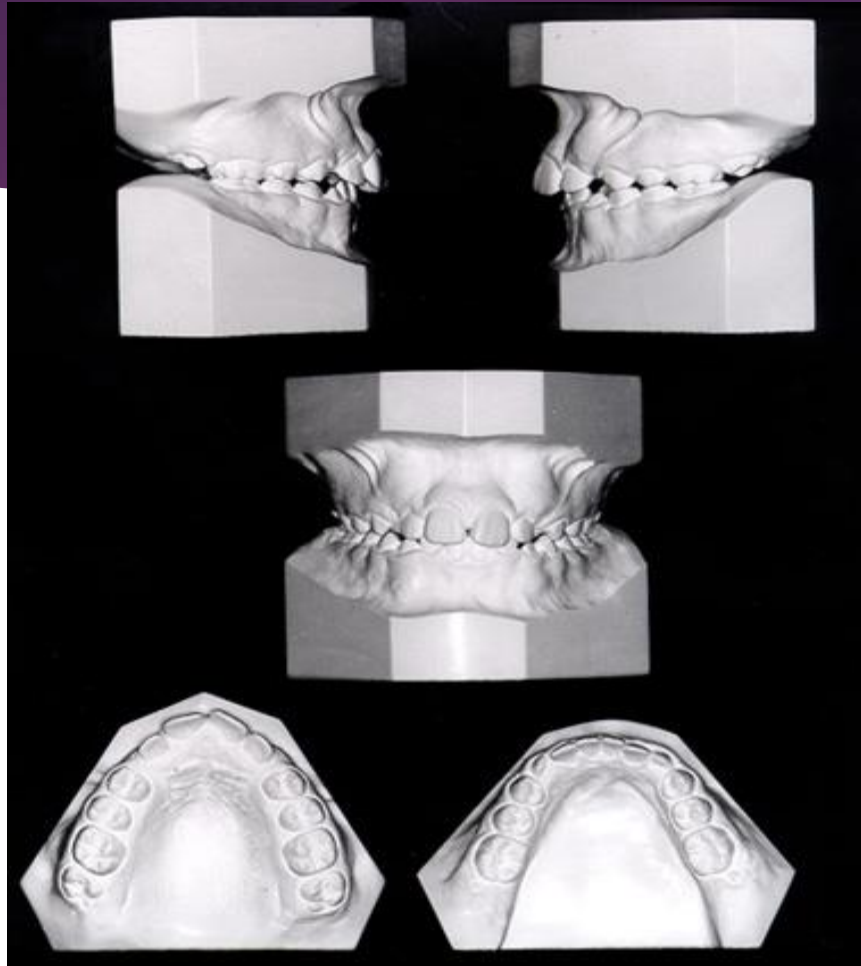


Alginate

IRREVERSIBLE
HYDROCOLLOID

PROFESSOR MASINO





Alginate Impression Materials

- ▶ The most widely used elastic impression material
- ▶ High degree of accuracy
- ▶ Frequently used for working models, study model, tooth brushing demonstration model

Compositions

► Base:

Sodium / Potassium Alginate: 15 to 20%
of the powder

Calcium Sulphate: Reacts with sodium
alginate to form calcium alginate

Sodium Phosphate (retarder) : Controls
the setting time

Compositions

► Base:

Coloring agents

Flavor additives

Quaternary ammonium

compounds / chlorhexidine
(self-disinfection)

Compositions

- ▶ Fillers:
Diatomaceous
earth
50%



Types

- ▶ Normal set: with 1 % retarder
- ▶ Fast set: with less than 1% retarder



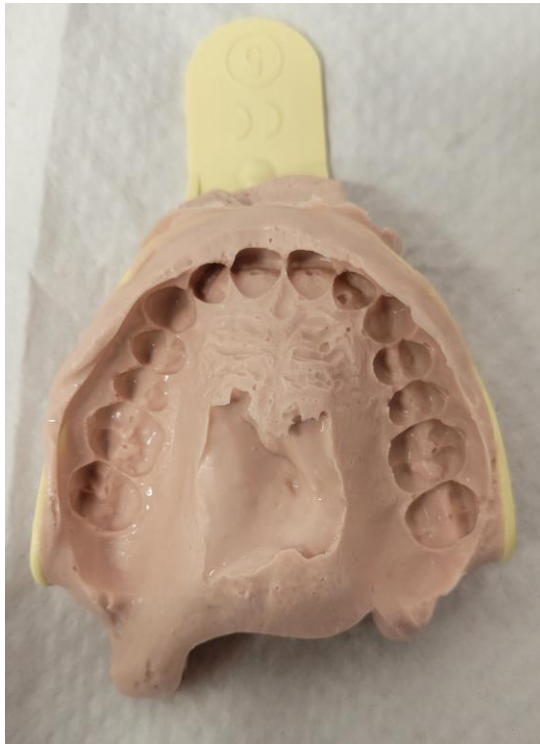
Acceptable Impression

- ▶ No voids
- ▶ Principal anatomical features are present
- ▶ Absence of distortion
- ▶ Absence of rips or tears

Acceptable Impressions



Not Acceptable Impressions



Selection of Trays

- ▶ Borders should be approximately $\frac{1}{4}$ " away from teeth and soft tissues
- ▶ Posterior border of the tray should extend far enough to include the maxillary tuberosity or the retromolar pad
- ▶ Patient should not feel pain or excessive pressure

Stock Trays for Alginate Impressions

► Metals / Plastics



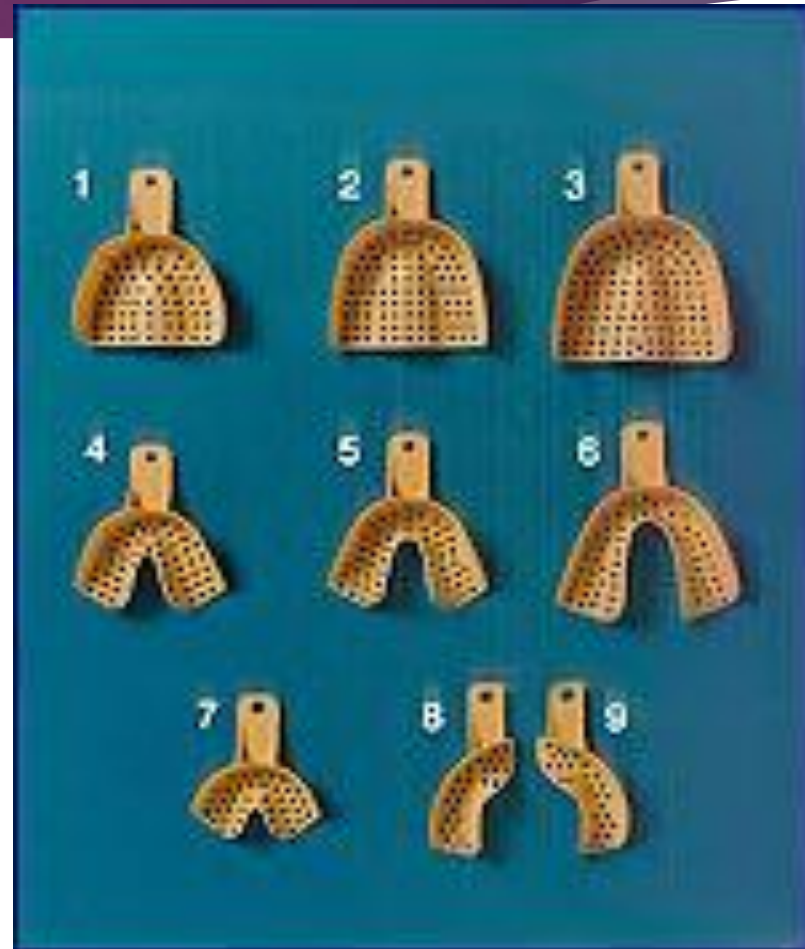
Stock Trays for Alginate Impressions

- ▶ Perforated, non-perforated, or Rim-lock



Stock Trays for Alginate Impressions

- Sizes: whole arch, one-half arch / quadrant tray



Water contents and temperature during mixing the alginate

- ▶ Too much water: a runny, slow-setting, weakened mix
- ▶ Too little water: a stiff, fast-setting, hard-to-manipulate mix
- ▶ Cooler the water: set slower
- ▶ Warmer the water: set faster

Factors for Accuracy

- ▶ Depends on careful proportioning of powder and water, and correct mixing techniques
- ▶ The way the impression is removed from the teeth (**quick-snap action**)

Key Terms

- *Syneresis* = Loss of water by evaporation if not kept in 100% humidity
- *Imbibition* = Absorption of water (swelling)
- *Beading the Tray* = A strip of soft utility wax is applied around the periphery of each tray

Taking the Alginate Impression

- ▶ Try in the trays BEFORE taking the impression.
- ▶ While trying in the trays, Explain to the patient that they should NOT bite down on the tray during the impression
- ▶ Have both the alginate and water pre-measured
- ▶ Evaluate if the tray must be modified with rope wax to capture all critical anatomy

Measuring Alginate

- ▶ Before scooping the alginate, make sure to “fluff” the alginate container, meaning flip container upside down
- ▶ Take a heaving scoop, “chop” the top of it with the alginate spatula and then flatten the scoop with the spatula.

Measuring the Water

- ▶ Room temperature Water
- ▶ Use the Water Measuring Cup
- ▶ One Scoop of Alginate per one Unit of Water
- ▶ Add Powder to Liquid

Spatulation

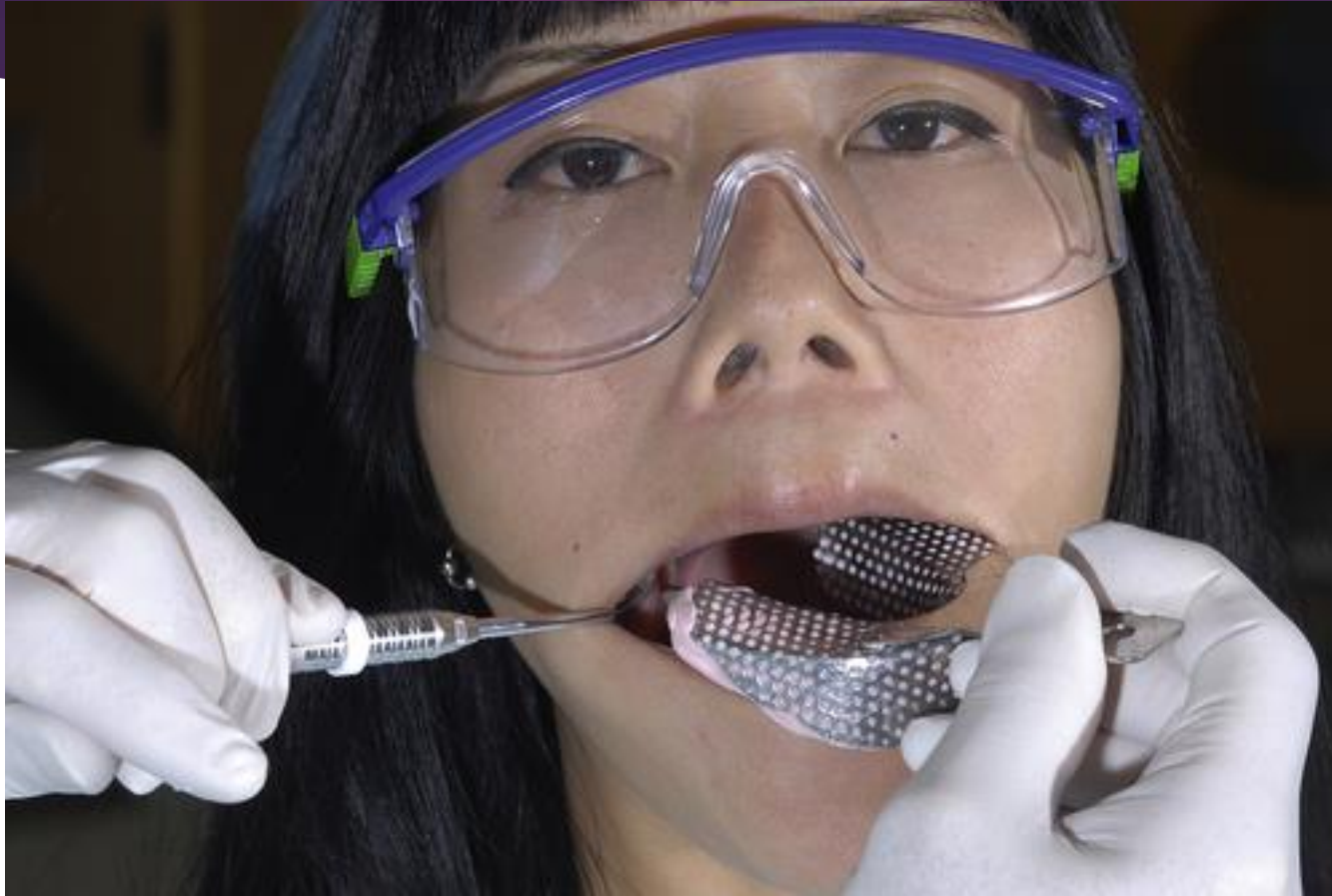
- Mixing quickly causes the material to set faster
- Mixing more slowly will give you more working time
- Fill the tray from posterior to anterior

Inserting the Impression

- ▶ Ask the patient to open
- ▶ Use a mouth mirror or finger to retract one corner of the mouth.
- ▶ Place the side of the alginate tray just posterior to the contralateral corner. This allows it to be cleanly inserted

Inserting the Impression

- ▶ Before pushing the tray against the teeth, make sure it is properly lined up
- ▶ An easy way to make sure the impression is properly aligned is to see if the handle lines up with the patient's nose
- ▶ Gently push the tray down against the teeth.
- ▶ Seat the tray from back to front



Taking the Impression

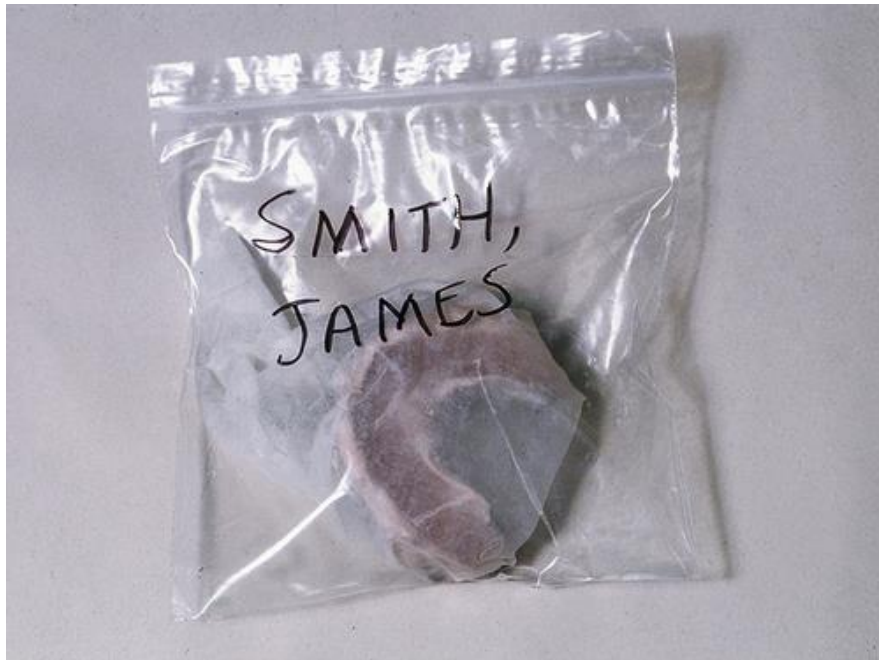
- ▶ Gently Place your fingers on top of the alginate tray to hold it in place
- ▶ Gently pull the lip out around the side of the tray
- ▶ Have the patient stick out their tongue

Removing the Impression

- ▶ Explain to the patient that there will be suction and a noise that may follow.
- ▶ Try to get a finger under the posterior buccal corner of the impression tray and lift. If this does not work, you can try the other side.
- ▶ You can also try to get a finger under the impression on each side, but usually the patient's mouth is not big enough for this.

Disinfecting the Alginate

- ▶ Spray the alginate impression thoroughly with Cavicide or Optim Spray
- ▶ Rinse the disinfectant spray off with water
- ▶ If impression will not be poured right away, wrap impression in a wet a paper towel. Store in a sealable plastic bag or headrest cover.



ALGINATE VIDEO

<https://youtu.be/Dllar7shMdY?si=VGTZaQC39li7hqlm>

Troubleshooting the Alginate Impression

- ▶ Do not lean the patient back during the impression
- ▶ If the patient is starting to gag, gently lean their head forward and tell them to breathe through their nose
- ▶ Give the patient a paper towel to hold just in case they start drooling or a bowl in case they may vomit
- ▶ If the patient has a gag reflex, you can use warmer water. This will shorten the setting time and make it easier for patients with a gag reflex

Troubleshooting the Alginate Impression

- ▶ Especially if your patient has a gag reflex, try to talk to them and distract them while you are taking the impression. Having the patient lift their legs can help also.
- ▶ For Maxillary Impressions, don't load material onto the palate area
- ▶ You can let your patient know how much time is remaining until it can be removed