Elastomers

•Often called rubber materials since they have properties similar to rubber.

•Clinical uses:

•Bridges, Implants. Partial dentures complete dentures and Indirect esthetic restorations.

Elastic impression materials

Alginate

Common uses:

•Diagnostic cast (study model)

•Primary impression for complete denture

•Partial denture framework

•Custom trays for fluoride or bleaching

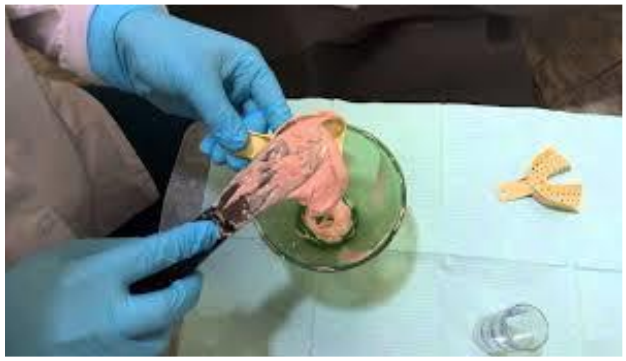
•Setting reaction/working time

Setting reaction occurs when the powder is mixed with water:

- Working time: total time from the start of mixing to the final time at which an impression tray can be fully seated without distortion

–Regular set: 2 3 minutes

–Fast set: 1.25 2 minutes



Important considerations to ensure the accurate impression

•2 4 mm bulk material in tray

•Allow extra 1 2 minutes after setting to improve tear strength

•Stored in a moist environment to avoid loss of water and deformation

•Disinfect in less than 10 minutes to avoid dimensional instability.

Setting time: elapsed time from the start of mixing until impression material becomes firm enough to resist permanent deformation.

•Regular set: 2 5 minutes, Fast set: 1 2 minutes

Advantage

•Simplicity of manipulation.

• little discomfort to the patient.

•Short chair time.

•Accurate reproduction of undercut area

Disadvantage

•Not accurate in the reproduction of hard objects as rubber impression Materials.

•Affect hardness of the surface of stone (potassium sulfate).

•Poor dimensional stability.

•Setting time dependent on operator handling.

Polysulfides

•Dispensing & Composition

•Supplied in two tubes as base and catalyst, equal lengths are mixed. Light, regular, heavy viscosities.

Uses

•Crown and bridge impressions

•Partial and complete denture impressions

Properties of clinical interest

- **Setting time: 8 14 minutes**

•Higher tear strength than hydrocolloids

•Accuracy improves if an impression is poured within 30 minutes

•very unpleasant taste and odor

•Can be irritant to oral mucosa

•need to Use tray adhesive

•Used with custom trays

Silicon rubber

•Condensation silicon

•Additional silicon

•Developed as an alternative to Polysulfides

•Has more desirable qualities in comparison:

–Easy mix

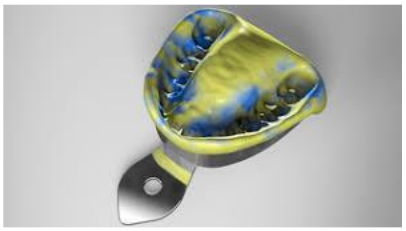
–Better taste and odorless

–Shorter setting time (5- 7 minutes).

Dispensing & composition

- **Light, regular, and heavy viscosities and putty**
- **Dispensed as a cartridge with 2 chambers (pastes), or two putty system**

Advantage



•Adequate working and setting time.

•Pleasant odor.

•Adequate tear resistance.

•Good elastic properties (used in case of severe undercut).

Disadvantage

•Should poured immediately.

•Poor dimensional stability.

•Poor self-life.

•expensive

<u>Polyethers</u>

•Also been used for crown and bridge and over-denture work since they are very accurate and also more hydrophilic than other silicon.

Dispensing & composition

•Dispensing same as other rubber materials (2 tubes)

•In addition, it's supplied in pouches of base and catalyst placed in mechanical mixer.

<u>Properties</u>

•Stiff , difficult to remove from undercuts

•Short working and setting times

•Setting time 3 5 minutes

•Sensitive to moisture and temperature

•More hydrophilic (must not be stored in water or disinfectant)

•accurate

Thank you