

# Separating Media

All plaster impressions before being poured and all other set plaster surfaces when separating from other surfaces, must be treated to prevent the two surfaces from sticking together. The materials used for these purposes are called the separating media.



## Definition

Separating media are those substances which are used to separate two surfaces from each other.

Separating media help to separate

- ↗ Plaster surface to acrylic surface
- ↗ Plaster surface to plaster surface
- ↗ Plaster surface to metal surface
- ↗ Plaster surface to impression material surface

Classification

### 1. Oily and greasy substances

- a) Vaseline
- b) Liquid paraffin
- c) Grease in crude form
- d) Mineral and vegetable oil

These substances when applied, absorb onto the plaster surface and thus aid in separation

### Disadvantage

- ↗ They weaken the plaster surface
- ↗ Cannot be uniformly and evenly applied on the plaster surface

Details of impression cannot be copied precisely due to loss of surface details

### Uses

Used when great accuracy is not required e.g. Flasking of denture, Articulating the model, Separation of model from base during repair works

## 2. Solution separating media

In this group of separating media the solutions used are: the spirituous solution of sandarac and shellac, acetone solution of celluloids, volatile solution of different waxes, (as for example, paraffin wax), 6% solution of sodium silicate ( $NaSiO_3$ ), and solution of sodium alginate (cold mould seal or alginate mould seal)

When the spirituous solution of sandarac and shellac are dissolved in equal parts of distilled water, a saturated solution is prepared. Some colouring agents as for example, aniline dyes are added to it so as to distinguish it from white plaster. These solutions are applied very evenly and uniformly all over the surface required. When dried, they form an impermeable layer, thus separating the two surfaces. Usually two coatings are necessary. One coating is applied which is allowed to dry completely and the second coating is applied which is allowed to dry completely and the second coating is applied over this. This separating medium gives nice glaze to plaster surfaces and accurate details can be copied. Sometimes instead of this, shellac and borax solution is also used. This solution is also prepared by one ounce of finely powdered borax in one ounce of distilled water and equal parts of shellac is added to make a saturated solution is also prepared by one ounce of finely powdered borax saturated solution. The disadvantage of this solution is that it adds up on the surface of plaster and even an uniform layer will not be obtained.

The volatile solution of waxes and acetone solution of celluloid are also used in a similar way forming a thin uniform (impermeable) layer on the plaster surface and this aiding in separation.

Solutions forming an impermeable layer over plaster surface:

- a. Spirituous solution of sandarac and shellac
- b. Acetone solution celluloid
- c. Volatile solution of different waxes(eg. Paraffin wax)
- d. 6% solution of sodium silicate
- e. Solution of sodium alginate(cold mould seal or alginate mould seal)

### **Alginate mould seal (solution of sodium alginate)**

It is the most commonly used separating medium at present. It used to separate the plaster surface from the acrylic surface (denture base) during the procedure of packing. Chemically, it is a solution of sodium alginate in distilled water with colouring agents added to it (the usual colour is pinkish). It is obtained in thick concentration and has to be diluted with warmed distilled water. One proprietary name is 'cold mould seal'. When sodium alginate solution is applied on the plaster surface, the sodium salts come in contact with calcium sulphate of plaster forming calcium alginate which is precipitated on the plaster surface into a thin impermeable layer (thin paper like). It is effective on the cold surface and it does not heap up on the plaster surface hence the name is cold mould seal. With this an even and uniform thickness can be obtained. It is used in almost every kind of denture work and also for making models from impression plaster. This is also a quite effective separating medium.

It is also applied in two coatings one coating is applied first and after drying it completely the second coating is applied on this. Application is done by hair brush or cotton. Camel hair brush is the best.

### **Sodium alginate/ cold mould seal**

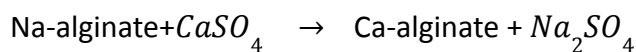
## the most commonly used separating media

#### Composition

1. Na- alginate
2. Distilled water
3. Colouring agent (pinkish)

#### Uses

1. Separate plaster surface to acrylic surface
2. Separate plaster surface from metal surface
3. Separating model (plaster) from soluble plaster (impression plaster)



When sodium alginate is applied on the plaster surface the sodium salt come in contact with the  $\text{CaSO}_4$  of plaster  $[(\text{CaSO}_4) \cdot 2\text{H}_2\text{O}]$  forming Ca- alginate, which is precipitates on the plaster surface into thin impermeable layer and separate the two surfaces

#### Application

This is applied in 2 coatings

The first coating is applied and allowed to dry

The second coating is applied on the first coating



Application is done by camel hair brush or cotton  
Applied in only one direction

#### Disadvantage

If used in hot surface it will heap up

They do not lump up on the cold plaster surface that's why they are called cold mould seal

### 3. semi- solid separating media:

- Soap solution
- Dilute water glass solution

These substances cause physical effect and chemically combine with the surface layer of the plaster and somewhat alter the surface.

There is little or no dimensional change if these substances are applied on the plaster surface



#### **Mechanism of action**

- ❖ Soap solution is readily absorbed into the plaster surface
- ❖ Oleates in the soaps are broken down into hydroxide and free oils
- ❖ When absorbed, oils acts as separating media

#### **Disadvantage**

Weakens the plaster

For this reason soap solutions are most commonly used for making models from impression plaster

#### **Solid separating media:**

The substance which have no chemical and physical action on plaster surface

- Tin foil
- Wet cellophane paper

#### **Tin foil**

- Tin foil is used in 0.001 mm thickness
- It is adapted and thoroughly burnished on the plaster surface
- Care should be taken so that it does not fold up or wrinkle

- Used basically during packing of base material(acrylic resin) to prevent the liquid (monomer) from getting absorbed in plaster
- Tin foil reduces water absorption of acrylic denture base materials during curing
- Cellophane paper
- Should be thoroughly wet in water before spreading it over and adapting on the surface of plaster

Vaseline

It is one of the oily and greasy substances which is commonly used in dentistry for different purposes.

- To separate tissue surface to impression material surface during impression taking
- To separate the plaster to plaster surface during flasking and articulating the model
- To separate plaster surface to acrylic surface during packing
- To separate acrylic resin from tooth and tissue surfaces

### **Solution separating media**

#### Preparation

1 ounce of finely powdered borax

1 ounce of distilled water

1 ounce of separation solution like sandarac and shellac with some colouring agent(aniline dye)

Spirituos solutions of sandarac and shellac are dissolved in equal parts of distilled water and form a saturated solution . Colouring agents are added to distinguish from white plaster surface

#### **6% solution of sodium silicate**

This separating media is only effective on hot plaster surface

Hence known as separating media of hot surfaces

If applied on cold surfaces it will

- Add up and form lumps on surfaces
- Sticky to the cold surfaces

They have to be applied in two layers

