7.3.2.5 Alginates in Two Pastes Form

Traditionally, alginate is supplied as powder to be mixed with water. The amount of the powder alginate is determined by the manufacturer's specifications. Conventional alginates, however, have the tendency to release dusts during manipulations [24]. Equally concerning, Kaur *et al.*, [5] noted that the inconsistency of dispersing the right amount of powder, separation of the alginate compositions, as well as contamination of the alginate powder during storages pose serious setbacks to its use for dental impressions. In attempting to address the above-mentioned drawbacks, alginates in the form of two pastes were introduced [17]. The newly modified two pastes form of alginates has two parts, namely: (1) the base pastes and (2) the reactor or catalyst.

The base paste is made up of soluble alginate, water, and fillers such as carrageenan, pullulan, xanthene gellan gum, guar gum, and gum Arabic. According to Srivastava *et al.*, [9], the listed fillers mainly function to prevent the separation of components of alginate paste. On the other hand, the catalyst contains calcium salt mixed with a viscous liquid that is nonreactive toward calcium salts such as liquid paraffin, fatty acids, or aliphatic alcohol in the form of a paste. More so, polybutene is added to stabilize the reactor paste while a basic material such as magnesium hydroxide is used as a pH-stabilizing agent. The advantage of two-paste alginate over the conventional form of alginate is that it allows convenient mixing of the alginates, either manually or with mechanical mixing units [9].

7.3.2.6 Tray Adhesive Alginates

In dental practice, impression trays are used to load the alginate after mixing to form a paste. The poor retention of conventional alginates to impression trays has necessitated the use of perforated trays. In recent years, manufacturers have introduced tray adhesive materials in the form of liquid and sprays. These materials are reported to contain conjugate of polymers and solvent such as polyamide or diethylenetriamine polymer, ester gum, and rosin in isopropyl alcohol [9]. A combination of isopropyl with ethyl acetate is also utilized as tray adhesives [5]. The application of tray adhesives is reported to improve the bond strength between the alginate material and the trays [35].

7.4 The Art of Impression Taking Using Alginates

While alginate impression material has remained one of the most important materials in restorative dentistry, it is, however, far from being the