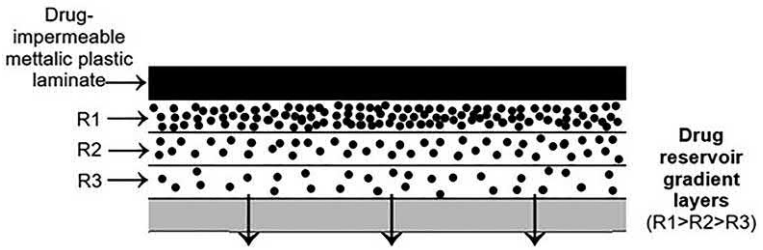

FIG. 5 Adhesive dispersion type.

varied at an increased manner to shape a gradient of drug reservoir along the multi laminate adhesive layers (Fig. 5).

5.3. Matrix-Diffusion Controlled TDDS

In drug, the reservoir is prepared by dispersing the drug particles homogeneously in a hydrophilic or lipophilic polymer matrix. The formulated drug reservoir matrix is moulded on a medicated disc which has a distinct surface area and thickness. The drug reservoir matrix is formed by incorporating the drug and the polymer in the same solvent and molding by solvent evaporation in a high temperature/vacuum condition. The final drug reservoir which is prepared by the above method is attached to the occlusive base plate in a compartment made-up of a drug impermeable plastic backing/laminate. The adhesive layer of the polymer is then coated around the circumference of the disc [18].

5.4. Micro Sealed Dissolution Controlled System or Micro Reservoir Type

This structure is a mixture of the matrix and reservoir diffusion type of DDS. Here, the drug particles are initially suspended in an aqueous solution of a water-soluble polymer. The resulting drug suspension is later dispersed homogenously in a lipophilic polymer like the silicone elastomer by high shear mechanical agitation to produce distinct microspheres of the drug [18].

5.5. Micro Structured Transdermal System

Individual silicon needles approximately 150 μm in length are prepared. Needles with hollow centers are produced through which drugs can be administered. They are applied on the surface of the skin to let the needles pierce the epidermis, thus amplify skin permeability and allow efficient drug delivery. They are suitable for incorporation vaccines and protein-peptide drugs [19, 20].

6. EVALUATION OF TRANSDERMAL DDS

6.1. Physicochemical Properties

6.1.1. Weight variation test

Ten patches randomly and weigh them individually, and then the average weight is calculated.

6.1.2. Transdermal film thickness

The thickness of the films is measured using digital screw gauge at three different places, and the mean is calculated.

6.1.3. Drug content

Take a random patch and cut a specified area of it and dissolve it in a suitable solvent of the specified volume. The solution is later filtered through a filter medium. The drug content is analyzed by either UV or HPLC technique [21].

6.1.4. Percentage of moisture in the TDDS

The formulated films are weighed individually and placed in a desiccator containing calcium chloride for a period of 24 h at room temperature. The weights of the films are recalculated after 24 h, and the percentage of moisture content is obtained.

6.1.5. Uptake of moisture

Films are evaluated for its weights and are placed in desiccators for 24 h at room temperature. Later on, in desiccators containing a saturated solution of KCl, the weighed film is placed to get exposed to 84% relative humidity, until a constant weight is achieved.

6.1.6. Tensile strength

The transdermal film is placed between the linear iron plates. Here one end is attached to the iron screen was as the other end is connected to a freely suspended thread over a pulley which is attached to a pan, later on, the weights are added to this pan. The elongation of the film is measured by the help of a pointer. The weight at which the film breaks is noted.