Chapter 22
Patch Test Concentrations and Vehicles for Testing Contact Allergens
Patch testing is a sound, relatively safe and reasonably reliable method of identifying contact allergens in patients with contact dermatitis. It has been clearly shown that patch testing is necessary in the majority of patients with eczema [1]. The technique of patch testing is described in Chap. 10.

All patients are tested with the European standard series, containing the most frequent contact allergens in European countries (Table 22.1). Often, standard series patch testing is not enough, and additional allergens or potential allergens are tested, based on the patient’s history and clinical examination. Examples are products and chemicals to which the patient is exposed occupationally or in his home environment. Test series containing the most frequent allergens in certain products (preservatives, fragrances, dental materials, plastics and glues, medicaments) or in certain occupations (hairdressing, pesticides, oil and cooling fluid) are very helpful. Approximately 300 patch test materials are commercially available from Hermal (Reinbeck Hamburg, FRG) and Chemotechnique (Malmö, Sweden).

For other chemicals and products, the investigator must decide how to apply them as a patch test. Chemicals usually need to be diluted, and it is of the utmost importance to use an appropriate patch test concentration and vehicle to avoid both false-negative and false-positive (irritant) reactions. The most useful reference source for documented test concentrations and vehicles of chemicals, groups of chemicals and products is the book Patch Testing [2]. Other useful lists are provided in recent textbooks on contact dermatitis [3–5].

When chemicals or products for which insufficient information is available to decide on a test concentration and vehicle are to be patch tested, the following advice from the International Contact Dermatitis Research Group and the North American Contact Dermatitis Group may be followed [6]:

**Vehicle:** A test substance should be miscible with or soluble in the vehicle. The best all-purpose vehicle is petrolatum. The materials to be tested can sometimes be dissolved in water, alcohol, methyl ethyl ketone or acetone; otherwise petrolatum is used.

**Concentration:** To avoid irritant reactions, an open test with different concentrations should be used first. If the result is negative, a patch test can