Choksi Laboratories Limited

Particle Size Analysis – Cosmetic & Personal care industry

The cosmetic and personal care industry has an extremely diverse range of products. These include; anti perspirants, hair sprays, toothpaste, facial products (lipstick, mascara, eye shadow etc.), nail varnish, emery boards, moisturizers (body lotions, hand creams) and exfoliants to name but a few. In all these products, the particle size is a key indicator of its final performance. The shelf life (which will depend on the particle charge (zeta potential) may also be of interest.

Toothpaste

Toothpaste generally consists of an abrasive material and a whitener, normally these are minerals such as calcium carbonate and titanium dioxide. The particle size distribution of these will determine the color of the toothpaste, its mouth feel and how effective it is in plaque removal.

Lipstick

The color density of lipstick is influenced by the type and particle size distribution of the pigments used. The degree of gloss or frosting is achieved by varying the particle size distribution – greater frosting is achieved by a wider particle size distribution. Color bleeding or feathering is influenced by the amount of fines in the product, which also affect the staying power.

Mascara

Filaments (threads of silk) are present in some mascaras. They give body and added length to the eyelash. Agents are also added to hold the curl without flaking. Tight particle size control of the substrate helps the formulators to achieve these aims; a larger particle size distribution of the agents makes flaking more likely.

Eye Shadow

When formulating an eye shadow, you require a product that is permanent and in some cases the particle size can influence the degree of frosting. Generally a good eye shadow may be defined as one, which exhibits a fine size distribution. This means it is more likely to blend into the skin, be more durable and prevent creasing in the fold of the eyelid.

Foundations, concealers and blushers

The particle size of a foundation should not be so small as to block up the pores but not so large that the fine lines in the face are accentuated. Particle size analysis is particularly important in the analysis of fumed silica (one of the major ingredients in soft gels and creams). The smaller the size, the greater the surface area the less material required for the desired viscosity. If the particle size of a blusher is too large it will not spread well.

Moisturizers

Moisturizing products need to rapidly absorb into the skin. Liposomes are often used. The size of such products are generally less than 200 nm.

Exfoliants and Emery Boards

These generally contain abrasive agents such as ground apricot kernel. A larger size distribution is required here in order to abrade the dead skin. In more sensitive areas of the body such as the face, a finer particle size is often used. The particle size distribution of the abrasive used in emery boards is also important, as the size will influence the degree of abrasiveness.

Nail Varnish

The particle size distribution influences the setting time and how chip proof and durable the nail varnish is. If the particle size is too large flaws will appear in the nail varnish commonly known as streaks.

Contact info@choksilab.com for all your particle size analysis requirements.

Extract from Malvern's Particle Size Analysis Download Library.