



Lab. de Formulación, Interfases,
Reología y Procesos

Tel: ++58(0)274-2402954 fax 2402957
<http://www.firp.ula.ve>



WHAT IS FORMULATION ? ¿ MAGIC, ART OR SCIENCE ?

The concept of **Formulation** deals with the **knowledge** and **know-how** necessary to develop and manufacture a commercial product characterized by its **use value** according to its specification listing.

A formulated product is made by associating and mixing various raw materials from natural or synthetic origin, which could be classified in two kinds: **active substances** that perform a principal action in the product, and **formulation auxiliaries** whose secondary functions allow or facilitate the preparation of the commercial product, boost its performance or help to conserve it.

Formulation essentially deals with all industries which transform matter, from the raw materials to the very end products which are ready for consumer use.

Chemical industries are quite related to formulation issues since they manufacture most active substances as well as auxiliaries. Many chemical compounds, known under the generic name of **chemical specialties** are commercialized more for the functional properties they confer to the final product (color, texture, aspect, taste, viscosity, or any particular capacity such as film forming, UV filtration, skin hydration, bactericide etc...) than for their chemical or physical characteristics (molecular structure, purity, density, boiling point etc).

Specialized industries which manufacture the final commercial product deal with even more complex formulation issues. They often associate several raw materials to attain a specialty product ready to use (to wash the hair, to protect or decorate a surface, to make a fabric water repellent etc ...). This end product ought to gather the ease of handling with the result sought by the consumer. Formulation industries are found in numerous and various different business areas such as pharmaceuticals (medicine) and paracheimistry (phytosanitary, cosmetics, perfumes, personal hygiene products, soaps and detergents, and products used in maintenance, photography, data support, paints and varnishes, dyes, glues and adhesives, lubricants, explosives..) as well as in industries which use formulation just to condition their goods such as in agroindustry, foods, fuels, pulp and paper, textiles, plastics, rubbers, cements, glass, ceramics ...

As a matter of fact formulation concerns essentially all applications of chemical products, either natural or synthetic. Its main objective is to find the **best compromise between performance, customer satisfaction, comfort and safety** at a minimum cost. This is a permanently changing issue which shifts with the people income, welfare, age, country, customs etc..., This variety and flexibility is by the way the main realm of competition between businesses.

Managing all these concepts requires a very wide variety of expertises and the integration of multidisciplinary teams. This is why formulation is still a young and immature domain, in which the knowledge and know-how is not yet fully organized. This is also one of the main reason why there are very few experts and there is no standard teaching program to prepare specialists.

However many things are getting methodically ordered and structured and the time is ripe to say that formulation is no longer an art, and that it is evolving into a science.

See mor in the following chapter: Jean-Marie M. Aubry & Gilbert Schorsch. *La Formulation – Présentation Générale. Techniques de l'Ingénieur, Traité de Génie des Procédés, Chap. J2-110 (1999)*



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