

What You Should Know About Deformulation Services



What is De*for*mu*la*tion (n)?

1. The Separation, Identification and Quantitation of ingredients in a sample
2. A Chemistry-Based Reverse Engineering Process used to determine the components of a commercial preparation of a formulation

The Deformulation Process

Scientists use analytical techniques such as solvent extractions, chromatography, and electrophoresis to separate a formulation down to its raw components. Next, organic and inorganic chemical testing methods such as FT-IR, NMR, GC/MS, LC/MS, SEM/EDXA, and ICP are used to identify the chemical class of major and minor components. Testing instruments are often equipped with spectral libraries and matching software, allowing for a definitive determination of chemical composition.

A deformulation analysis can be performed on a wide range of products, including food, beverages, perfumes, pharmaceuticals, nutraceuticals, medical devices, cosmetics, cleaners, plastics, polymers, rubber, metals, and a wide range of consumer and specialty products...

Analytical Techniques Utilized in Deformulation Analyses:

- Liquid Chromatography/Mass Spectroscopy (HPLC, LC/MS)
- Gas Chromatography/Mass Spectroscopy (GC/MS)
- Fourier Transform Infrared Spectroscopy (FT-IR)
- Nuclear Magnetic Resonance (NMR)
- Ultraviolet/Visible Spectroscopy (UV/VIS)
- Atomic Absorption Spectroscopy (AAS)
- Induced Coupled Plasma (ICP)

Product Innovation for Entrepreneurs

Analytical Services help entrepreneurs make the jump from initial idea to finished product. Whether your goal is to create a best-selling eco-friendly cleaning product, a breakthrough anti-aging lotion, or any other new product. Trust Avomeen's scientists and their decades of

reformulation experience to help take your innovative concepts and build them into prototypes and products that can be shown to investors, distributors, and manufacturers. Avomeen has strict internal security procedures and confidentiality agreements that protect its clients' inventions and we ensure that our clients retain the full rights to the final products we create for them.

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Formulation Development:

Industry: Cosmetics

Problem: Needed new innovative product

Solution: An entrepreneur approached our scientist with an idea to develop a natural skincare/anti-aging treatment. He was also provided samples of three different products currently on the market. The ingredients in the commercial products were deformulated, identified, and quantified using instrumentation such as FT-IR and LC/MS. Our formulation scientists then developed a product using all-natural ingredients, which was of higher quality than any current products on the market.

