SUPER CRITICAL FLUID EXTRACTION PLANT

**A Superior and Economical World Class Technology for Quality Natural Products**

The current global trends show a growing preference for products from natural sources. Also there is an increasing concern for safe, eco – friendly and pollution free manufacturing processes. SCFE technology provides a ready and total solution to these challenges. Its superiority over the conventional technologies of extraction, especially for natural products in the food and pharmaceutical industry is well recognized.

SCFE is a two step process which uses a dense gas as a solvent e.g., Carbon Di Oxide (CO2) for Extraction, above its critical Temperature (31O C) and critical pressure (74 bar). The feed generally ground solid is charged into the extractor. Supercritical CO2 is fed to the extractor through a high pressure pump (100 – 500 bar). The extract laden CO2 is sent to a Separator (60 – 120 bar) via a pressure reduction valve. At reduced temperature and pressure conditions, the extract precipitates out in the Separator. The Extract Free CO2 stream, leaving the separator is then recycled to the extractor.

CO2 PUMP

SEPARATOR

EXTRACT

EXTRACTOR

PRESSURE REDUCTION VALVE

FEED

Advantages of SCFE

* Extract with delicacy and freshness close to natural
* High potency of active components
* Longer Shelf life of extract
* No residual solvent
* Simultaneous fractionation of extracts

Commercial Applications

* Extraction of Natural Products such as Oils and Oleoresins, Flavors, Fragrances, Color, Preservatives, Pesticides & Herbal Medicines
* De – Caffeination of Tea/Coffee
* Production of Micro and Mono particles

Commercial Status

* World’s 1st State of the art Super Critical Textile Dyeing plant supplied to SASMIRA, Worli
* Lab Scale SCFE plant supplied to IIT, Bombay

CO2 as a Solvent

* Generally regarded as safe (GRAS) for food products
* Inexpensive
* Easily Available
* Non toxic, Non flammable and Inert to most materials