

What is CO2 extraction useful for?

Flora and fauna related raw materials contain various substances necessary for the production of vitamins, medicines, perfumes, and cosmetics.

Some substances are used in the chemical industry, in the production of leather, varnishes, paints and electronic products.

All these substances are of different nature and different solubility in different solvents.

For example, when extracting tannins from the bark, resinous and aromatic substances do not allow all tannins to dissolve into the solution; they may even change the properties of tannins in the solution as a tanning agent. The purification of the solution is quite expensive.

Waxes, aromatic and resinous substances, in the production of arabinogalactan and dihydroquercetin from larch wood, contaminate the finished product and require multi-stage purification.

Chlorophylls, waxes and resins pass into the solution when extracting CBD and terpenes from hemp with use of alcohol, which also requires additional purification.

Staged extraction can be used in the production of instant drinks such as instant coffee. Roasted beans are pre-extracted with liquid carbon dioxide to extract the roasted coffee aroma, then the residues after extraction are extracted with hot water using application of conventional technology, and are mixed with the previously extracted aroma. As a result, there is no loss of aroma and an instant coffee with a freshly brewed aroma is produced.

Our technology allows multi-stage extraction every time when producing the required substances without the need for purification.

After multi-stage extraction, there is a purified form from the result of all the impurities powder of plant raw materials that have a very developed adsorbent surface remaining, which can be used for the production of high-quality cellulose or sorbents.

Why do we prefer liquid subcritical extraction?

The temperature used in the process is as low as 20 -28 C, which makes it possible to obtain practically unchanged aromatics.

Compared to supercritical carbon dioxide extraction, liquid (subcritical) carbon dioxide extraction, by virtue of its properties as a solvent, extracts better terpenes range than fatty oils, and the extracts are more concentrated.

The energy consumption for our extraction is lower than for supercritical extraction.

Also, there is a possibility of renewable energy sources use for the process - the hit of the sun and the cold of bore water.

There is practically no waste with a reasonable organization of the process, and impact on the environmental is minimal.

We have the opportunity to conduct preliminary research, trial extractions, design, and manufacture the necessary equipment to organize a complete process for the production of extracts, beginning from the preparation of raw materials and concluding with the release of finished products containing CO2 extracts.

CO2 extraction process diagram

