In one aspect, there is provided a method for obtaining a pharmaceutical composition characterized in that it consists of solubilizing S modafinil in a fluid in the supercritical state, and then after expansion of said fluid, recovering said S modafinil by causing it to be absorbed at the surface by an inert support appearing as granules.

In another aspect, there is provided a pharmaceutical composition obtained according to the method as disclosed herein.

From among these supercritical fluids, mention may be made of CO2: the technology of supercritical CO2 is based on the solvent power of CO2 which may be modulated at will depending on the pressure and temperature conditions applied to it.

In the supercritical state (more than 74 bars and 31°C), CO2 has very particular properties. The obtained fluid is characterized by great diffusivity (of the order of that of gases), which gives its good capability for diffusion, and a high density which provides it with a significant transport and extraction capacity.

A method for extraction with supercritical CO2 operates in a closed circuit. It includes pressurizing units (pumps) and a temperature-setting unit (exchangers) in order to bring CO2 above its critical point.

The product to be treated is placed in an extractor crossed by the supercritical CO2 flow. Molecules which are soluble in supercritical CO2, therefore extractable, are not very polar compounds with a low molecular mass.

The supercritical fluid has several advantages as compared with a liquid fluid:

- a great diffusivity coefficient and a small viscosity coefficient;
- an absence of surface tension, which increases the penetration power of the supercritical fluid.

A supercritical fluid has another advantage as compared with other solvents: its solubility changes depending on whether its temperature or its pressure is varied. Thus it is possible to ensure that it be a solvent for certain substances at a given moment and not at all, at the next instant. This facilitates recovery of the substance which has been dissolved.

Thus, it has been realized that modafinil has acceptable solubility in CO2 as shown by the figure below.

