

# PHASE EQUILIBRIA OF THE BINARY SYSTEM CARBON DIOXIDE + DIMETHYL SULFOXIDE AT HIGH PRESSURES

M. C. Volpe, L. Sesti Osseo, E. Reverchon

University of Salerno, Faculty of Engineering, Department of Chemical and Food  
Engineering, Via Ponte Don Melillo 1, 84084 Fisciano-Salerno, Italy  
Phone: +39 089 964025, fax: +39 089 964057, e-mail address: [mcvolpe@unisa.it](mailto:mcvolpe@unisa.it)

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## Abstract

The aim of the present work is to provide essential information on high-pressure phase equilibria of a binary system that is taking a growing interest in different supercritical fluids applications, like extraction, chromatography and crystallization.

High-pressure vapor-liquid equilibrium data were measured for the binary system carbon dioxide + dimethyl sulfoxide at different temperatures ranging from 321.15 K to 353.15 K and pressures up to 20 MPa.

The phases boundaries have been determined using the synthetic method in a Variable Volume View Cell. The mixture critical points have been also determined at the different temperatures.

The system shows an interesting behavior at temperatures above 338.15 K, where a critical line discontinuity is observed and the liquid-vapour curve presents a plateau. The thermodynamic behavior is discussed with the aid of the Soave-Redlich-Kwong equation of state, and global phase diagrams.