Dortmund Data Bank (DDB) and the Integrated Program Package (DDBSP)

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The work on the Dortmund Data Bank (DDB) was started in 1973. The main goal was the development of thermodynamic models for the prediction of the real mixture behavior (phase equilibria, excess properties). Since 1989 DDB and the Integrated Software Package are continuously updated and extended by DDBST GmbH in Oldenburg, Germany. DDB today comprises more than 4.6 Mio. data tupels for more than 35 000 compounds from more than 60 000 references. DDB contains a great part of data not available via the open literature (systematic measurements for the development of predictive models, private communications, confidential data from industry, BSc, MSc, diploma and PhD theses, … from all over the world). DDB grows by nearly 8 % per year. The data input is mainly done at DDBST GmbH with support from colleagues from China, Japan, Korea, Estonia, Russia, .. The data quality is ensured by a number of different approaches (e.g. various graphical representations). Especially the development of estimation methods for pure component and mixture data leads to the identification of low quality or questionable data. Predictive models developed using the DDB include: - UNIFAC and mod. UNIFAC for sub-critical non-electrolyte mixtures - PSRK and VTPR equations of state for sub- and supercritical pure components and mixtures. Both models have been extended to cover also electrolyte solutions. - LIFAC for sub-critical electrolyte solutions. - COSMO-RS (Ol) - Pure component property estimation methods for normal boiling point, vapor pressure, critical data, … . - …where the further development of the predictive thermodynamic models UNIFAC, modified UNIFAC and PSRK is supported by a consortium of more than 45 companies from all over the world. The integrated DDB software package (DDBSP) contains highly developed process synthesis tools for fitting recommended model parameters simultaneously to a comprehensive data base, evaluation of existing model parameters prior to process simulation, the selection of suitable solvents for azeotropic or extractive distillation, extraction, absorption, ... , etc.