DDBST
Dortmund Data Bank
Software & Separation
Technology

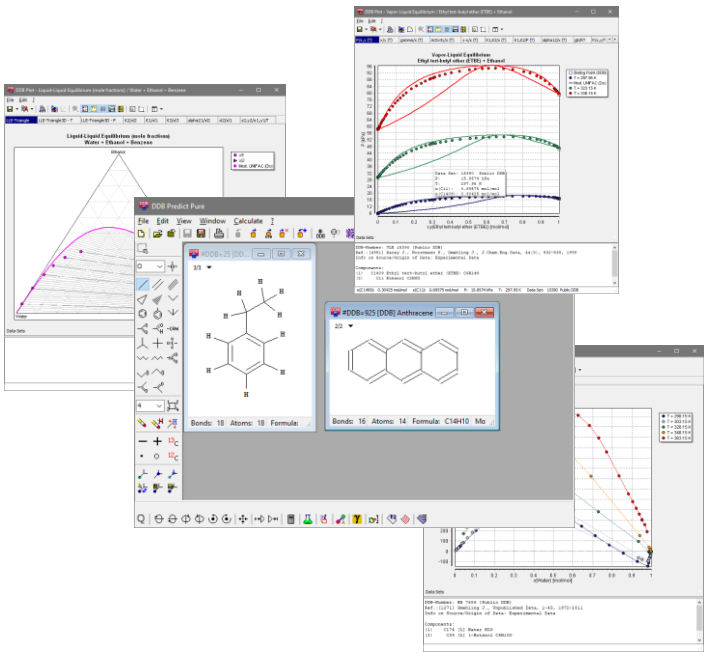
DDB Educational Version 2025

Teaching Physical Properties for Process Design and Simulation Using DDB

DDB Educational Version is designed to be used for lectures and exercises and to give teachers and students nearly all the possibilities of the full Dortmund Data Bank and the integrated software package. To achieve this for a small fraction of the price of the commercial version, some of the very complex and advanced features were left out and the experimental data banks are limited to 30 common components and their mixtures. Additionally, all free data (components and properties) from the Explorer Version are included.

Nevertheless, this makes more than 94,500 real world data sets from the open literature and private communications available for examination, regression and graphical representation. Additionally, all free data (components and properties) from the Explorer Version are included.
Using a large number of group contribution methods (like Joback, Ambrose, Benson, UNIFAC) or COSMO-RS (Ol) for pure and mixture properties (like VLE or LLE), data can easily be estimated from molecular structure. Just draw the molecule using our convenient structure editor *Predict Pure* and click the property you need.

The package comes with extended documentation and course material (PowerPoint© slides).



Use this product to

- incorporate modern methods and data into teaching
- have your students examine real world experimental data
- let them get acquainted to experimental scattering and reliability of data
- get hands on experience with a large variety of estimation methods
- teach them to use the most sophisticated tool for physical property estimation, which is also used by many companies worldwide
- let them explore thermodynamic relationships between different types of data (e. g. pure component vapor pressures and enthalpy of vaporization)
- let them explore the performance of thermodynamic models for the simultaneous description of different types of data (VLE, h^E, ...)
- Search, regress, estimate, visualize, ... physical property data to be used in design projects

Major Data Types Volume

Abbrev.	Description	Datasets	Data points
VLE	Vapor - liquid equilibria	5,390	85,900
HPV	Vapor - liquid equilibria (normal boiling point of a component below 0°C)	5,400	46,750
ELE	Vapor - liquid equilibria for systems containing electrolytes	1,100	12,400
LLE	Liquid - liquid equilibria	3,200	23,350
ACT	Activity coefficients at infinite dilution (binary systems)	3,550	3,550
ACM	Activity coefficients at infinite dilution	170	1,100
GLE	Gas solubilities	2,100	9,300
EGLE	Gas solubilities (electrolyte containing systems)	550	3,400
SLE	Solid - liquid equilibria	1,200	11,250
ESLE	Salt solubilities	1,700	7,600
AZD	Azeotropic / zeotropic information	5,800	5,800
...	...		

Major Features

- Ideal software package for teaching thermodynamics
- Contains a very large amount (approx. 93,000 data sets) of experimental pure component and mixture data from thousands of original references stored in the DDB plus all free data from the Explorer Version (components and properties)
- The data bank is nearly complete for the components and mixtures included
- Simple to use Windows software for data retrieval, plotting, regression and estimation
- Basic data from the famous DDB (Antoine constants, critical data, acentric factor, density, UNIQUAC r and q values, CAS-RN), thousands of molecular structures and COSMO-RS sigma profiles for 27 components
- Calculation of VLE, h^E, azeotropic compositions, ... using correlative (Wilson, NRTL, UNIQUAC, ...) or predictive (UNIFAC, mod. UNIFAC, PSRK, VTPR) methods
- Fast automatic pure component property estimation using 20 well known group contribution methods
- Automatic fragmentation of molecules into structural groups for a large number of group contribution methods including UNIFAC and mod. UNIFAC (Do)
- Utilizes a user-friendly Windows graphical user interface
- Exports data to Microsoft Excel™

Available Pure Component Data

	Data Sets	Data Points
Vapor Pressure	8,700	40,300
Critical Data	730	740
Viscosity	7,850	43,250
Density	18,400	130,650
Melting Point	2,000	2,950
Heat Capacity	2,900	29,550
Enthalpy of Vaporization	650	2,400
Enthalpy of Fusion	320	350
Enthalpy of Sublimation	85	210
Thermal Conductivity	2,800	27,000
Surface Tension	1,500	5,950
Entropy (various)	200	600
Speed of Sound	4,150	25,100
G-Function	90	1,570
...		
Total	**49,500**	**311,850**

Components Included

Acetone, Ethanol, Ethyl Acetate, Benzene, Trichloromethane, Cyclohexane, n-Hexane, Methanol, Water, Carbon Dioxide, Methane, Sodium Chloride, 1-Butanol, NMP, iso-Propanol, Acetonitrile, Nitrogen, Potassium Chloride, Naphthalene, Sulfolane, Hexen-1, Hexadecane, p-Xylene, m-Xylene, Diethyl ether, Acetic Acid, Glycol, Butadiene, Butyl Acetate, Tetrahydrofuran Additionally, all free data (components and properties) from the Explorer Version

Educational Version – Features

Pure component and mixture **data** for 30 common components + all free data (components and properties) from the Explorer Version.

Includes data **retrieval** and **graphical representation** for all data banks.

Data Bank Add-On for Fitting and Plotting: Extended parameter **fitting**, **prediction** and **graphical representation** for VLE, h^E, LLE and azeotropic data. Includes **g^E models**, **equations of state** and **electrolyte** models.

Mixture Data Bank Add-On - Prediction Methods: Prediction of mixture data using **UNIFAC**, **mod. UNIFAC (Do)**, **PSRK**. Extended graphical representations for multicomponent mixtures.

Predict Pure: Pure component property **estimation from chemical structure** for 20 group contribution methods (like Joback and Benson), graphical editor for molecular structures, **structure data base** (approx. 86,800 structures). Includes also data input editors for experimental data.

Licenses

- One-year license for a single workstation
- 10 concurrent user classroom license
- 20 concurrent user classroom license

Changes and errors possible regarding all information.