DDBST
DORTMUND DATA BANK
SOFTWARE & SEPARATION
TECHNOLOGY

DDBST Dortmund Data Bank Software & Separation Technology GmbH
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DDB 2011
Dortmund Data Bank Online Search

Checking for the Availability of Thermophysical Data

The Dortmund Data Bank

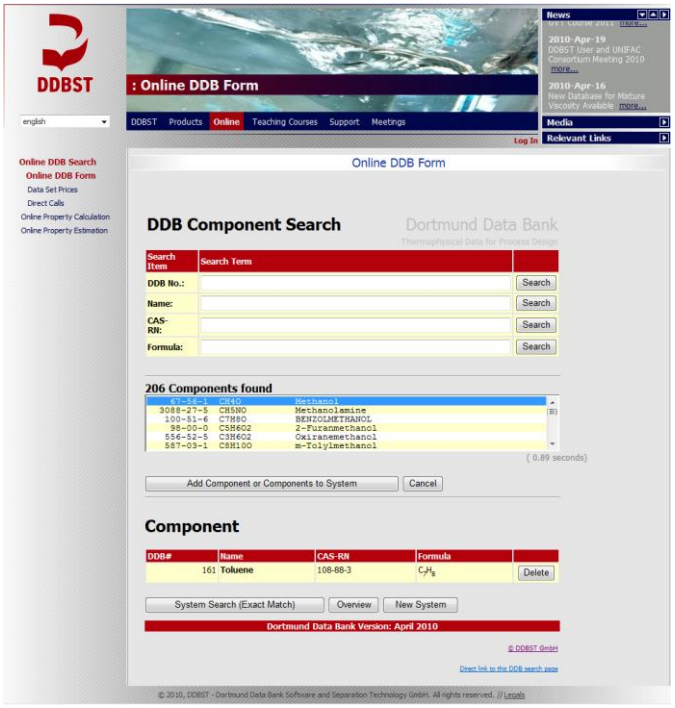
The Dortmund Data Bank (DDB) is a factual data bank for thermodynamic and thermophysical data compiled from primary sources like scientific publications, theses, company reports, deposited documents, and private communications. Only experimental data from the original publications are stored and all sources are available at DDBST GmbH.
Besides the easily accessible thermophysical properties from scientific literature (J. Chem. Eng. Data, J. Chem. Thermodyn., Fluid Phase Equilib., Thermochim. Acta, and Int. J. Thermophys.) DDB contains a great part of data not available via the open literature (systematic measurements for the development of predictive tools, private communications, confidential data from industry, BSc., MSc and PhD theses, … from all over the world). These data will not be provided by online-services and are not made available to competitors of DDBST GmbH. The DDB offers vast amounts of information for a wide variety of applications in chemical engineering, environmental protection, and plant safety. It is especially valuable for the design of separation processes, e.g. distillation, extraction, absorption, crystallization, evaporation, ...
Besides covering the most common components the DDB contains data for e. g. ionic liquids, biofuel components, amines used in gas treating, polymers, electrolytes, and more.

Distribution Channels

The DDB is distributed as an in-house data bank together with a software package (DDBSP) for data retrieval, visualization, regression and export to other applications like spreadsheets or chemical process simulators. In addition, this software package includes many state-of-the-art property estimation models for pure component and mixture properties like UNIFAC, mod. UNIFAC, PSRK, VTPR, COSMO-RS(OI), COSMO-SAC as well as process synthesis tools and further utilities.
As a second distribution channel, the Dortmund Data Bank is used within our consulting services, either in form of simple data deliveries but more often in combination with advanced services like data regression (e. g. for g^E models like Wilson, NRTL and UNIQUAC or pure component vapor pressure equations like simple or extended Antoine, Wagner, heat capacity polynomial parameters, parameters for a variety of DIPPR and PPDS equations). Data are also bundled with specific available or custom-tailored software tools. In many cases, data are delivered together with property estimation results. In addition, missing data can be measured at our partner organization LTP GmbH.
Major parts of the Dortmund Data Bank except e.g. adsorbent/adsorptive equilibria as well as many data supplied by the Gas Processors Association) are also included in DETHERM (i-systems.dechema.de).

The Online DDB Search

Online DDB Search has been developed to enable a world-wide access to the contents of the Dortmund Data Bank. The site allows checking for the availability of thermophysical data free of charge and in addition it offers qualified consulting beyond just data delivery upon request.



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DDB Online Search is explicitly not a web shop and it is not possible to buy data through this service directly. DDB Online Search is designed as an information source only and request will always be answered by one of DDBST's employees.

Supported Data Banks

Online DDB Search covers the complete list of data types stored in the Dortmund Data Bank including phase equilibrium data (VLE, LLE, SLE, azeotropic data), gas and salt solubilities, activity coefficients at infinite dilution, octanol-water partition coefficients, volumes, densities, critical data of mixtures, and a large variety of data for salts, polymers, adsorbents and organic pure components.
The DDB currently contains nearly 193,000 pure component data sets with nearly 1,290,000 data tuples. For mixtures more than 385,000 data sets with 2,755,000 data tuples are available (Version 2010).

Typical Outputs

A typical output includes details about the data types, the temperature and pressure ranges, and the number of sets and points (where available).

This first example below shows all available data for the binary mixture of ethanol and methanol.

The second example shows all data for the pure component 1,3-dichloro-2-butene where only a few data are available.

Terms and Conditions of Use

Prices

DDBST GmbH provides Online DDB Search free of charge. Please take a look at the price lists for data sets, complete or partial data banks and software for further information.

Copyright

Online DDB Search results can be distributed freely and no copyright is reserved for the search results as long as they are distributed together with a link or reference to the DDB or Online DDB Search.

System/Mixture

Dortmund Data Bank
Thermophysical Data for Process Design

DDB#	Name	CAS-RN	Formula
11	Ethanol	64-17-5	C_2H_6O
110	Methanol	67-56-1	CH_4O

Mixture Data

Databank		Sets	Points	Temperature Range	Pressure Range
Vapor-Liquid Equilibria	VLE	57	812	273-433 K	2-1735 kPa
Heats of Mixing	HE	5	33	298-323 K	n.a.
Activity Coefficients at Infinite Dilution (Pure Solvents)	ACT	8	8	298-424 K	n.a.
Heat Capacities of Mixtures/Excess Heat Capacities	CPE	3	21	298-441 K	101 kPa (const.)
Azeotropic Data	AZD	46	46	273-433 K	40-1013 kPa
Solid-Liquid Equilibria	SLE	1	7	144-175 K	n.a.
Densities and Volumes of Mixtures/Excess Volumes	VE	50	657	273-338 K	100-40000 kPa
Mixture Viscosities	VIS	19	202	273-338 K	101 kPa (const.)
Total		**189**	**1786**		

Some free data for this system can be found in o

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Dortmund Data

Component

Dortmund Data Bank
Thermophysical Data for Process Design

DDB#	Name	CAS-RN	Formula
1409	Ethyl tert-butyl ether (ETBE)	637-92-3	$C_6H_{14}O$

Pure Component Data

Property	Number of Points	Number of Sets	Temperature Range	States	Number of Sets
Viscosity	6	2	293-303 K	Liquid	2
Vapor Pressure	365	35	278-485 K	Vapor-Liquid	35
Critical Data	1	1	(hidden)	Critical Point	1
Liquid Density	476	60	255-473 K	Liquid	60
Melting Point	1	1	(hidden)	Solid-Liquid	1
Molar Heat Capacity (cP)	27	7	273-333 K	Liquid	7
Heat of Vaporization	1	1	298-298 K	Vapor-Liquid	1
Surface Tension	2	2	297-298 K	Liquid	2
Std. Heat of Formation	2	2	298-298 K	Gas/Vapor	1
				Liquid	1
Gibbs Energy of Form.	1	1	298-298 K	Gas/Vapor	1
Speed of Sound	1	1	298-298 K	Liquid	1
Molar Saturation Heat Capacity	32	1	277-341 K	Liquid Phase of VLE	1
COSMO-RS σ Profile	**available**				

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Dortmund Data Bank Version: April 2011

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