

Dortmund Data Bank

Explorer Version

Accessing NanoORC Data

Data provided by the EU project NanoORC (<https://www.nanoorc.mek.dtu.dk/>) included.
Further information can be found at the Journal of Molecular Liquids 333 (2021) 115140



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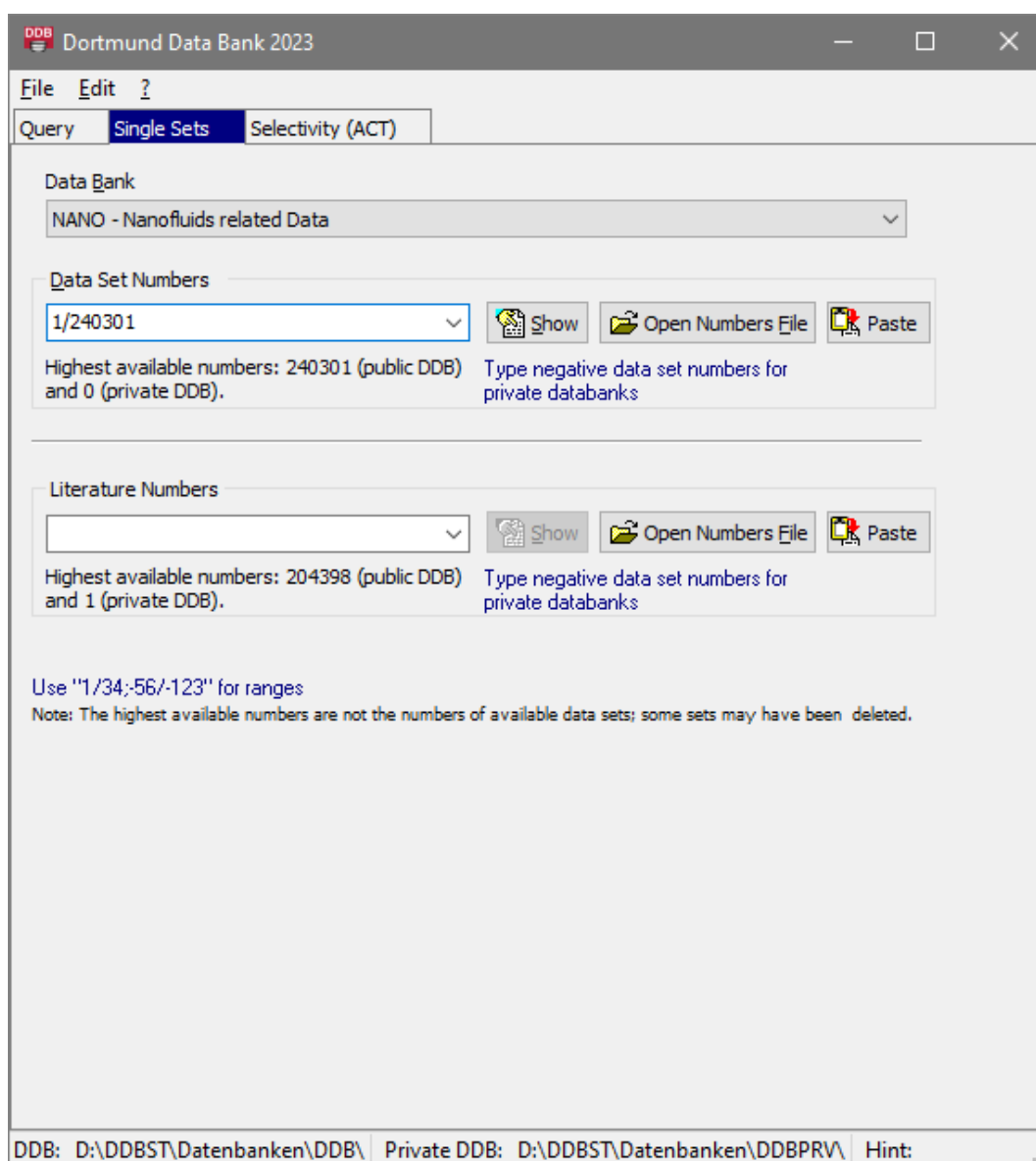
www.ddbst.com

How to access the NanoORC Data

The data from the paper "Benchmark Database Containing Binary-System-High-Quality-Certified Data for Cross-Comparing Thermodynamic Models and Assessing their Accuracy".

Can be accessed in several ways:

1. By performing a complete search via the program *Dortmund Data Bank* as shown on the screenshot below:



2. All related components are tagged with the keyword "nanofluid". This allows a search via the program *Components*:

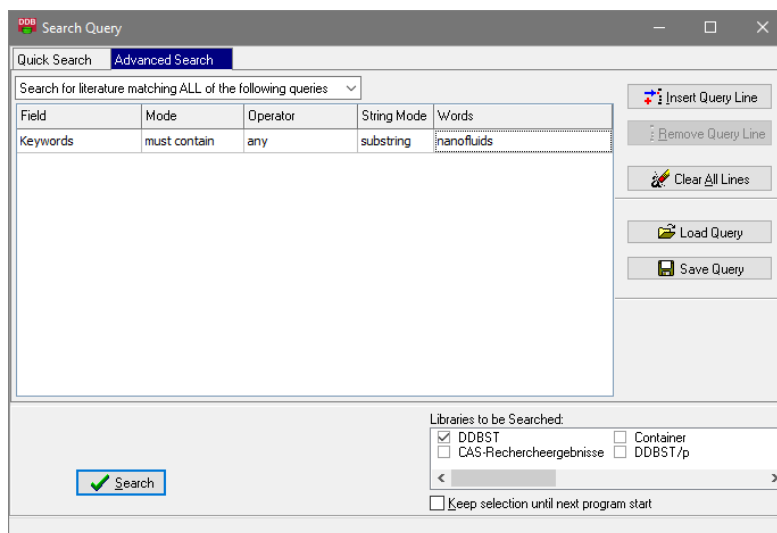
The screenshot shows the DDB Components 2023 application window. The search category is set to "nanofluid". The main table displays a list of components with columns for Component#, Loc, Name, and Formula. The right-hand pane shows the detailed properties for the selected component, Titanium dioxide.

Comp#	Loc	Name	Formula
3299	0	Titanium dioxide	O2Ti
4496	0	Aluminum oxide	Al2O3
4556	0	Magnesium oxide	MgO
4558	0	Zinc oxide	OZn
4769	0	Silver	Ag
6476	0	Silicon dioxide	O2Si
7662	0	Titanium	Ti
9280	0	Cerium oxide	CeO2
17382	0	Cobalt oxide	Co3O4
18285	0	Copper oxide	CuO
18377	0	Magnetite	Fe3O4
20464	0	Tin oxide	O2Sn
23951	0	Antimony pentoxide	O5Sb2
55801	0	Cellulose	
75817	0	Graphene Nanoplatelets	(C)n
75818	0	Multi-Walled Carbon nanotube	(C)n
75824	0	Single-Walled Carbon nanotube	(C)n
75825	0	Graphene monolayer	(C)n
75934	0	CNC	(C6H10O5)

Property	Value
Identification	
Name	Titanium dioxide
Alternative name	Titandioxid
Formula	O2Ti
CAS registry number	13463-67-7
Location	0
Component number	3299
Additional component numbers	
Synonyms	
Component classes	
Atomic	
Molecular weight [g/mol]	79.8788
Dipole momentum [Debye]	
Van der Waals volume (UNIQUEAC-r)	
Van der Waals area (UNIQUEAC-q)	
Phase change	
Critical temperature [K]	
Critical pressure [kPa]	
Critical volume [cm ³ /mol]	

DDB: D:\DDBST\Datenbanken\DDB\ Private DDB: D:\DDBST\Datenbanken\DDBPRV\

3. Besides the components, also the references have been tagged. Opening the literature management program *LITERATURE* or using the “Reference/s Selection” form the DDB main program and doing an “Advanced Search” as follows:



will result in a literature list containing the Keyword “nanofluids”:

The screenshot shows the 'DDB Search Results [1]' window with a table of search results:

Number	Title	Authors	Publication Year	Pages	Volume	Issue	Jourr
141604	Characterization and measure...	Cabaleiro D.; Pastoriza-Gallego M.J.; Pin...	2013	405 - 415	58		J. Che
141745	Transport and thermal proper...	Ferreira A.G.M.; Simoes P.N.; Ferreira A...	2013	80 - 92	64		J. Che
145102	Experimental Measurements o...	Longo G.A.; Zilio C.	2013	1288 - 1307	34		7 Int. J
145335	Preparation, characterization,...	Moghaddam M.B.; Goharshadi E.K.; Ent...	2013	365 - 372	231		Chem
147976	Estimation of the viscosity of ...	Atashrouz S.; Pazuki G.; Alimoradi Y.	2014	43 - 48	372		Fluid

At the bottom of the window, it shows 'Datasets: 213' and 'Search for Data of selected References'.

The “DDB” – button opens a query result window containing the data stored for the marked entry:

The screenshot shows the 'DDB Query Result [1] <MPVT, MTCN, NANO, VIS, X>' window. The main table displays detailed data for the selected entry:

Set No.	Source	Pts.	Comp's	#DDB	Tmin [K]	Tmax [K]	Pmin [kPa]	Pmax [kPa]	Comment	Quality	PubYear	Reference
[192318 0 0]	DDB	59	2	C8 1,2-Ethanediol C174 Water	278	363	100	45000	Nanofluids_A,VIS,RHO,TCN			[141604] Cabale...
[192361 0 0]	DDB	160	3	C8 1,2-Ethanediol C174 Water C4558 Zinc oxide	278	363	100	45000	Nanofluids_A,RBO		2013	[141604] Cabale...
[192362 0 0]	DDB	20	3	C8 1,2-Ethanediol C174 Water C4558 Zinc oxide	283	343	100 (const.)		Nanofluids_A,RHO,VIS,TCN		2013	[141604] Cabale...

At the bottom, it shows 'Data Set: 192362 Source: 0 (Public DDB) Counter: 0' and '1 data set/s marked.'

Final Comments

The explorer version is a limited version of the Dortmund Data Bank and the DDB software package and is intended only for test purposes and to show the possibilities of the full versions. In case of any questions, comments or requests please don't hesitate to get in touch with us using support@ddbst.com or the contact form on our web site www.ddbst.com.