

BIBLIOGRAPHICAL INFORMATION CONTAINED IN THE JOINT-TDB

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Chemical system is selected as the main structure unit of the Joint Thermodynamic Data Base created on Internet by Khodakovsky, Osadchii in collaboration with a group of scientists [1]. According to the number of incorporated chemical elements all systems can be divided into one-, two-, three-, and n-component systems. The order of arrangement and the names of those systems are determined by the accepted thermochemical sequence of the chemical elements.

Towards the end of 2008 the Joint TDB incorporated information for 3700 chemical systems. In order to store and to treat the experimental thermodynamic information the Joint TDB is structured so that the same set of files is developed for each chemical system. One of these files is a "biblio.doc" file. "Biblio.doc" file contains, where possible, complete bibliographical information for a chemical system. The lack of limitation on the body of information contained in the computer storage permits to change the program generation of a bibliographical reference for its simple copying in the case that it is repeated.

According to their phase state chemical systems can be homogeneous and heterogeneous as well, so thermodynamic information for homogeneous subsystems is grouped together into subdirectory, the names of which incorporate additional designations in brackets (they are by default missing for heterogeneous systems):

aq - aqueous ions and neutral species in standard condition (at infinite dilution);

aq_sol - thermodynamic data for aqueous solutions of terminal concentration;

gas - thermodynamic characteristics for a gaseous phase;

solid_sol - thermodynamic characteristics for solid solutions;

kinetik_data - kinetics data for chemical reactions.

For instance, the thermodynamic data on the palladium ions hydrolysis are given in the "O_H_Pd/aq" subdirectory. For each of the mentioned above subsystems in a particular chemical system separate bibliographical files are developed.

Thermodynamic information for each chemical system (or subsystem) is grouped in the files:

refersub - thermodynamic values recommended for the substances by basic reference books;

rearefer - thermodynamic values recommended for chemical reactions;

litersub - the literature data correlation for the substances;

realiter - the literature data correlation for the chemical reactions.

The thermodynamic information in the files is given in the chronological order. Rules for recording references are based on the updated version accepted by the Working Group of the CODATA National Committee in 1987.

- At formatting references the following procedure is used: alignment on width, the 3 cm, ledge and intervals (before reference - 6 pt, after - 0 pt, interlinear - single).
- Each reference should contain an author's code and, where possible, complete (comprehensive) reference.

Formation of the reference begins with indication of the names of all authors in English or Russian in the same order as in the publication. The name of each author is accompanied by the initials standing next to that. Then the title of the publication, in English or Russian, which ends with a point with a sign "two oblique strokes": //. Next is a name of edition, a volume, a section, the issuance number, pages, year (in brackets). A brief reference (an author's code) is an abbreviated reference used in texts and tables. The reference code includes:

- Year of the publication issue - for the 20th and the 21st centuries two last figures of the year are used, and for the 19-th century the year is completely indicated; for Russian publications the year is indicated at the end of the reference code.
- The first three letters of the author name or the first two the authors' names, separated by the inclined stroke; capital letters are used only for 20th century. For the 21st century only the first letter of

the authors name is capital, and the second and the third ones are small letters.

- When the codes formed according to the mentioned above rules coincide, an extra numeral designation is used, for example, 78JON/BRA, 78JON/BRA_2.

At the end of the reference the source of the bibliographical information is indicated: PDF-, DOC-files, reprints, photocopies etc., as well as (as may be required) the name of a directory (subdirectory) in which the corresponding file is stored.

The computer bibliographical database contains PDF- and DOC-files of the papers on inorganic and physical chemistry from various scientific journals and corresponding references. The computer base of bibliographical information was supplemented by continuous monitoring of scientific journals containing thermodynamic information. This search was performed on Internet on the sites of leading publishing houses of the World (Elsevier Ltd., Springer Berlin, Blackwell-Synergy etc.), as well as of the International and National Scientific Societies. A substantial part of PDF-files was given to us by authors of the papers. Besides, the collections of PDF-files of papers at the disposal of others organizations, were given to us, with the understanding that they are only used in education, science, and not in commerce (according to copyright of the publisher on this production). The tab. 1 gives the results of monitoring of part of the scientific journals.

Table 1

Results of the scientific journals monitoring

	The Journal Name	Years	The Number of PDF-files
1.	Chem. Reviews	1949 - 2008	123
2.	Inorg. Chem.	1962 – 2008	456
3.	J. Amer. Ceram. Soc.	1985 – 2008	14
4.	J. Amer. Chem. Soc.	1920 - 1965	1753
5.	J. Chem. Thermodyn.	1969 - 2008	15
6.	J. Chem. Eng. Data	1959 - 2008	675
7.	J. Phys. Chem	1920 - 1995	1162
8.	J. Phys. Chem. Ref. Data	1972 - 2008	80
9.	J. Solid State Chem.	2006 - 2007	3
10.	J. Solution Chemistry	1972 - 2008	512
11.	Thermochimica Acta	1999 - 2008	5
12.	Amer. Mineralogist	1997 - 2008	263
13.	Chemical Geology	1995 - 1999	14
14.	Contrib. Mineral. Petrol.	1977 - 2008	24
15.	Geochim. Cosmochim. Acta	1995 - 2008	50
16.	Phys. Chem. Minerals	1977 - 2008	102
1-16.	In total		5191

Towards the end of the 2008 Joint-TDB incorporated PDF-files of 5300 papers.

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Reference

Khodakovskiy I.L., Osadchii E.G. et al. Consistency procedure and forms of presentation of experimental thermodynamic information in the joint database // Vestn. Otd. nauk o Zemle RAN, No 1` (26), 2008. Moscow, IPE RAS, 2008.

URL: http://www.scgis.ru/russian/cp1251/h_dgggms/1-2008/informbul-1_2008/mineral-37e.pdf

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