The GPA Data Bank, 5th Edition

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The GPA Data Bank, 5th Edition, delivers over 35 years of GPA research data for immediate, productive use in process simulation tools. Included is a completely re-mastered thermophysical property database with 220+ Research Reports and Technical Publications and data fitting, correlation, and phase equilibrium software applications. The GPA Data Bank is now over twice the size of previous versions and includes a significant amount of new VLE data for low-boiling hydrocarbons never before available in previous versions of the GPA Data Bank published by Penn State (1st Ed.-1983, 2nd Ed.-1990, 3rd Ed-1993) and Oklahoma State University (4th Ed.-2000). The GPA Data Bank, 5th Edition, was jointly development by EPCON International (developer of the popular API Technical Data Book) and DDBST (developer of the popular Dortmund Data Bank and co-founder of the UNIFAC consortium). The result is a thermo software/data that can readily used to improve gas processing operations.

The GPA Data Bank Explorer provides electronic access and searching capabilities for all 195 GPA Research Reports and 30 GPA Technical Publications. The 10 included software programs are loaded from a convenient Outlook style navigation pane with two categories of software to choose from. The GPA Data Bank Explorer provides 37 years of GPA research in a convenient, intuitive software interface developed over 10 years in the API Technical Data Book software product. The 3-phase flash engine provided accurately determines the 3rd liquid phase vital for compressor operations and pipeline transportation applications. Developed over a 10 year period by the API Technical Data Committee - the 3-phase flash outperforms major simulators in five key areas important for hydrocarbon system design and operations. The GPA Data Bank with the stored pure component properties and the comprehensive GPA VLE, LLE, and VLLE mixture data allows for fitting reliable model parameters. Fit GPA data to gE-models or equations of state, for the development of group contribution methods and for fitting the required interaction parameters for process simulation. It is especially helpful for the critical examination of model parameters prior to process simulation. For the development of reliable group contribution methods with a broad range of applicability nearly all available information covering a large temperature and the whole concentration range for a variety of compounds very different in size can be used.

The ARTIST software provides estimation of pure component properties using the molecular structure. It incorporates a large number of different group contribution methods for a multitude of different properties. Using a special coding scheme for molecular structures, ARTIST is able to take into account the chemical neighborhood of the individual groups thus implementing chemical know-how. To ensure the correctness of the algorithm, the program has already been tested for years during the development of the well known UNIFAC and modified UNIFAC methods.