DDBST
DORTMUND DATA BANK
SOFTWARE & SEPARATION
TECHNOLOGY

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DDB 2012 – Biodiesel Package

Data Bank Subset for Biodiesel Related Compounds (DDB-Biodiesel)

Yearly 170 Gt of biomass is produced by photosynthesis worldwide. Biomass means mainly fat and oil (predominantly triglycerides), carbohydrates (sugar, starch, cellulose, chitin) and lignin. Today only 3 % of the biomass is used as food, fuel or as construction material, e.g. for furniture, etc.

In particular because of the shortage of oil and gas and the problems caused by CO_2 it seems obvious to use these natural resources as raw material in chemical industry or as energy source.

So for example in chemical industry fat and oil are converted to fatty acids by hydrolysis or fatty acid esters (biodiesel), e.g. FAME manufactured by transesterification. Fatty alcohols can be produced by hydrogenation of fatty acids. For the development of the most economical production process, a reliable knowledge of the thermophysical pure component and mixture properties of the compounds involved is required. These are the different glycerides (tri-, di-, mono glycerides), glycerol, fatty acids, fatty acid alkyl esters, fatty alcohols, the different alcohols used for the transesterification reaction (methanol, ethanol, i-propanol, butanol, ..).

A great part of the required data are stored in the Dortmund Data Bank (DDB). A detailed description of the Biodiesel Package can be downloaded from www.ddbst.com (Products – Special Applications – Biodiesel Related Data). Besides for Biodiesel production and processing, these data are of great value also for other applications like e.g. natural oil extraction and purification.

The amount of biodiesel related data stored in the DDB are given in the table below. Please request an offer to obtain the latest numbers.

Data Bank	Number of Data Sets (Points)	Number of Data Points
Vapor-liquid equilibria	1861	18935
Liquid-liquid equilibria	1157	9791
Solid-liquid equilibria	2301	21390
Activity coefficients at infinite dilution	120 (2273)	3336
Excess enthalpies	721	11887
Mixture densities	1531	21761
Mixture viscosities	603	7443
Further mixture properties	2386	12605
Pure component properties	7124	29068
Total	**20059**	**136755**

The above mentioned data bank for biodiesel related data is available for internal company-wide use within your company for a price of 18750 € in form of ASCII files (site license) (PC-version 9375 €).

However for the efficient use of these data we would recommend the software package DDBSP. DDB-Biodiesel including basic parts of DDBSP is available for 10750 € as an indefinite single PC version. Yearly updates are available for 12.5% of the price of the previous year version. Within an auto-continuation agreement, updates are delivered as soon as they become available where the price increase is limited to 2.5% / year. The software package allows to retrieve the data using several search options (components, systems, literature), has graphical data representations, has copy and print capabilities, and allows data export to PPDX and Aspen INP files.

Furthermore with the help of the software package the user can define new components or store his own experimental data. At the same time with the software package the required basic data for the compound used, such as name, formula, CAS registry number, Antoine constants, critical data, acentric factor, density, van der Waals properties, melting point and heat of fusion, dipole moment etc. are delivered.

For further information, please go to www.ddbst.com or contact support@ddbst.com.