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URL  http://phys4entrydb.ba.imip.cnr.it/EquiTHETA/
EquilTheTA is an efficient computational SaaS tool for the calculation of thermodynamic properties, in the framework of statistical thermodynamics, and of transport properties, with high-order Chapman-Enskog method, for gas mixtures and plasmas. The EquilTheTA tool results from the long-term cooperation among researchers of CNR IMIP and of Università della Basilicata in projects focused on the characterization of thermal plasmas for aerospace applications and ICP torches.

EquilTheTA is a web access application with friendly interface, OS independent, characterized by unique features:

- extended and accurate core databases of physical & chemical data for atomic & molecular species
- highly-reliable in wide ranges of pressure and temperature
- efficient and accurate equilibrium solver, exploiting innovative algorithms for the automatic creation of the reaction scheme
- high-performance transport module, with automatic reduction of the number of species
- simplified and advanced simulation interfaces customized for both non-expert and skilled users
- graphical rendering of results exportable as images in different std formats
- results downloadable in table-format (tab-delimited text files)

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EquilTheTA is a fundamental tool for users of advanced plasma-based technologies or for researchers in plasma science and natural phenomena:

- gas discharges (ICP, arc)
- laser-induced breakdown spectroscopy (LIBS)
- space vehicle or meteor atmospheric entry
- plasma-assisted combustion
- plasma treatment & processing
- plasma actuators
- microelectronics
- lamps

Thermodynamic quantities and transport coefficients can be regarded as fundamental data having significant fallout in applied science and different technological applications. They are of paramount importance for plasmas, not only in equilibrium conditions. Numerical codes reliably evaluating these data can assist the designing and optimizing phases of plasma-based devices.