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# THERMAL SCIENCE

## International Scientific Journal

**Marko Popović**

EQUATION OF STATE IN FORM WHICH RELATES MOL FRACTION AND MOLARITY OF TWO (OR MORE) COMPONENT THERMODYNAMIC SYSTEM CONSISTED OF IDEAL GASES, AND IT'S APPLICATIONS

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Most people would face a problem if there is a need to calculate the mole fraction of a substance A in a gaseous solution (a thermodynamic system containing two or more ideal gases) knowing its molarity at a given temperature and pressure. For most it would take a lot of time and calculations to find the answer, especially because the quantities of other substances in the system aren't given. An even greater problem arises when we try to understand how special relativity affects gaseous systems, especially solutions and systems in equilibrium. In this paper formulas are suggested that greatly shorten the process of conversion from molarity to mole fraction and give us a better insight into the relativistic effects on a gaseous system.

**KEYWORDS**

[Mol fraction](#), [Molarity](#), [ideal gas](#), [equation of state](#), [special relativity](#)

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