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Thermophysical properties of fluids. I. Argon, ethylene, parahydrogen, nitrogen, nitrogen trifluoride, and oxygen.

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**ABSTRACT**

The thermophysical properties of argon, parahydrogen, nitrogen, nitrogen trifluoride and oxygen are presented. Properties are given in tables and a standard set of equations is described. The tables list pressure, density, temperature, internal energy, enthalpy, entropy, heat capacity at constant volume, heat capacity at constant pressure, and sound velocity. Also included are viscosity, thermal conductivity, and dielectric constant, for some the fluids. The equation and related properties of this report represents a compilation from the cooperative efforts of two research groups: the NBS Thermophysical Properties Division and the Center for Applied Thermodynamic Studies of the University of Idaho.

Key words: argon; critically evaluated data; density; ethylene; heat capacity; parahydrogen; nitrogen; nitrogen trifluoride; oxygen; thermodynamic properties; thermophysical properties.