

Chapter 11

ENTROPY AND ENTROPY OF FORMATION OF GAS

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ABSTRACT

Results for entropy and entropy of formation of gas are presented for major organic and inorganic chemicals. The chemical formula and molecular weight are also given. The results are displayed in easy-to-use tabulations which are especially applicable for rapid engineering usage with the personal computer or hand calculator. The organic chemicals encompass hydrocarbon, oxygen, nitrogen, halogen, silicon, sulfur and other compound types.

INTRODUCTION

Properties such as entropy and entropy of formation are useful in ascertaining the thermodynamics of operations encountered in the chemical processing and petroleum refining industries. As an example of such usefulness, the heat effects and equilibrium yields of chemical reactions require knowledge of the thermodynamics of the chemical reactions. Other uses include ascertaining the thermodynamics of chemical explosions.

ENTROPY AND ENTROPY OF FORMATION

The results for entropy and entropy of formation are given in Tables 11-1 and 11-2 for organic and inorganic compounds. The values apply to the ideal gas at 298.15 K. The entropy is the absolute entropy. The entropy of formation is ascertained from the appropriate thermodynamic relations for the formation of the compound from the elements. The tabulations are based on data source publications for organics (1-37) and inorganics (1-61). The tabulations are arranged by chemical formula to provide ease of use in quickly locating data.

REFERENCES – ORGANIC COMPOUNDS

- 1-34. See **REFERENCES - ORGANIC COMPOUNDS** in **Chapter 1 CRITICAL PROPERTIES AND ACENTRIC FACTOR**
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REFERENCES - INORGANIC COMPOUNDS

- 1-56. See **REFERENCES - ORGANIC COMPOUNDS** in **Chapter 1 CRITICAL PROPERTIES AND ACENTRIC FACTOR**
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58. Daubert, T. E., CHEMICAL ENGINEERING THERMODYNAMICS, McGraw-Hill, New York, NY 1985).
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