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Dryer et al.

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(54) **SYSTEM AND METHOD FOR THE DETERMINATION OF MIXTURE AVERAGED MOLECULAR WEIGHT OF COMPLEX MIXTURES**

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(58) **Field of Classification Search**
None
See application file for complete search history.

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(57) **ABSTRACT**

An apparatus and method for determining the average molecular weight of a complex mixture from a plurality of test samples of the complex mixture are disclosed. The method includes a) providing a chamber having two fixed conditions and one variable condition selected from three state variables of temperature, pressure and volume; b) introducing a test sample of known mass into the chamber; c) setting operating conditions of the state variables such that the test sample will be fully vaporized into a gaseous state without decomposition or chemical reaction; and d) measuring the change of the variable condition after full vaporization of the test sample is achieved. Steps b-d are repeated for several test samples having different masses. The average molecular weight of the complex mixture is determined as a linear gradient (slope) of the relationship for the change of variable condition as a function of test sample mass.

18 Claims, 7 Drawing Sheets

