1. SCOPE AND PURPOSE:

1.1. The method, **MOKF**, measures moisture in foods, pet foods, animal feeds, molasses, liquid supplements, grains, and other food and feed ingredients. The method, **MOF**, measures moisture in industrial, animal, and vegetable oils and fats and high fat products. It is normally used for molasses and molasses-containing products and products containing appreciable amounts of preservatives or other additivies that would volatilize with available oven moisture methods.

1.2. There is no assurance that matrices other than those listed can be assayed using this method.

2. PRINCIPLE:

2.1. The sample is extracted in methanol (**MOKF**) or is extracted in a chloroform/methanol solution (**MOF**) and an aliquot is titrated with Hydranal® reagent. Water in the sample and iodine in the Hydranal® reagent promote oxidation of sulfur dioxide to produce sulfuric acid. When no more water remains in the reaction mixture, the excess of free iodine acts as an electrode depolarizer, triggering the titration endpoint. Milliliters of Hydranal® reagent titration is converted to percent moisture using a titer factor determined from titration of a known quantity of water.

2.2. To ensure the stability of the titer value and identify any potential system contamination or rapid degradation of the Composite 5 solution, the Hydranal Test Solution 5 is run periodically. Additionally, a QC check of pure water is performed to assess system performance.

2.3. Using a 5 g sample (**MOKF**) or using a 10 g sample (**MOF)**, the lowest confidence level of this method is 0.1 % moisture.

2.4. Known Interferences - Mercaptans, peroxides, alkalies, ketones, aldehydes, most acids, and any powerful oxidizing or reducing agents will increase the analytical result.

3. PRECISION:

Records of method precision based on Method Validation and/or known control summaries are located in the QA Master file for this test method. Assay precision may vary with test matrix and analyte level. Terms used to describe method precision are defined in NPSOP3000, *Validation of Quantitative Chemical Tests*.

4. REFERENCES:

4.1. Official Methods of Analysis of the AOAC International, Method 984.20

4.2. Official Methods and Recommended Practices of the AOCS, Method Ca 2e-84.

4.3. Official Methods of Analysis of the AOAC International, Method 991.02

4.4. Water Determination by Karl Fischer Titration Monograph, Metrohm