

EFFECTIVE DATE	N P A n a l y t i c a l L a b o r a t o r i e s	METHOD CODE
REVISED: 01/05/26	LABORATORY TEST METHOD SUMMARY	FFAF
REPLACES: 02/14/25	FREE FATTY ACIDS (ANIMAL FAT)	PAGE 1 OF 1
KEY WORDS: Free Fatty Acids, Fat Quality, Titratable Acidity		

1. SCOPE AND PURPOSE:

This method measures free fatty acids in crude and refined vegetable and marine oils, animal fats, and acidulated soap stocks. There is no assurance that matrices other than those listed can be assayed using this method.

2. PRINCIPLE:

- 2.1. A portion of fat is dissolved in hot, neutralized ethanol, with a phenolphthalein indicator. The solution is quickly titrated with a standardized sodium hydroxide solution to the pink phenolphthalein end point. Percent free fatty acids in the fat, as oleic acid, is calculated from the volume of standardized base required to neutralize the sample.
- 2.2. Using a 5 g sample, the lowest confidence level of this method is 0.2% free fatty acids expressed as oleic acid. The lowest confidence level will vary with sample matrix and the corresponding fatty acid used to express the results.
- 2.3. Known Interferences - Exposing samples to excessive temperatures during handling and analysis may cause an increase in free fatty acid content.

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 and Recommendations of the AOCS, Method Ca 5a-40
- 4.2. Official Methods of Analysis of the AOAC International, Method 940.28