



NUTRI PHARMACEUTICALS RESEARCH, INC.

Methodology For O2P Determination of Peroxide Value & Fatty Acids Content By GLC Area %

Our O2P™ product (Oil in powder form) is determined under a modified Method first for its peroxide value and secondly after the oil is extracted via solvent recovery using a GLC official method for the determination of fatty acid (isomers) by area present. The modified method is necessary for the valid determination of peroxide value or lipid oxidation taking place. Therefore, acid hydrolysis of the oil powder must take place first to rid of any interference caused by the MATRIX ingredients present. After the oil powder is hydrolyzed, the oil is then extracted with ether / chloroform while replacing any air with N₂. The solvent used is evaporated and the recovered oil is then set up for PEROXIDE VALUE determination based on USP REDOX METHOD or the A.O.C.S. OFFICIAL METHOD CD-8-53 / JA 8-87, equally the same procedure.

The GLC method primarily used for determination of FATTY ACID (isomers) by AREA PERCENT stems from a procedure supplied by Henkel. It will quantitate the fatty acids present in the oil after prior esterification. The fatty acid methyl esters formed are recovered via solvent extraction. The extract is then injected into a GLC system using capillary column to separate the many isomer components, which with a response obtained is compared to a standard containing the known fatty acids. This standard is a mix of fatty acids (isomers) in their methyl ester forms. The calculation is based on the individual peak area of isomer divided by the TOTAL PEAK AREA, which is equal to % FATTY ACID.

NOTE:

Prior to O2P (Oil in powder form) determination of Peroxide value, the resultant powder is subjected to ACID HYDROLYSIS. This is when the sample is digested in 25% HCL solution under low heat with a reflux condenser and flow of N₂. The Ether solvent is then evaporated and oil is recovered for Peroxide value determination based on A.O.C.S.