

SUPPLEMENTARY INFORMATION

PHASE BEHAVIOR OF MONOGLYCERIDES IN VEGETABLE AND MINERAL OIL

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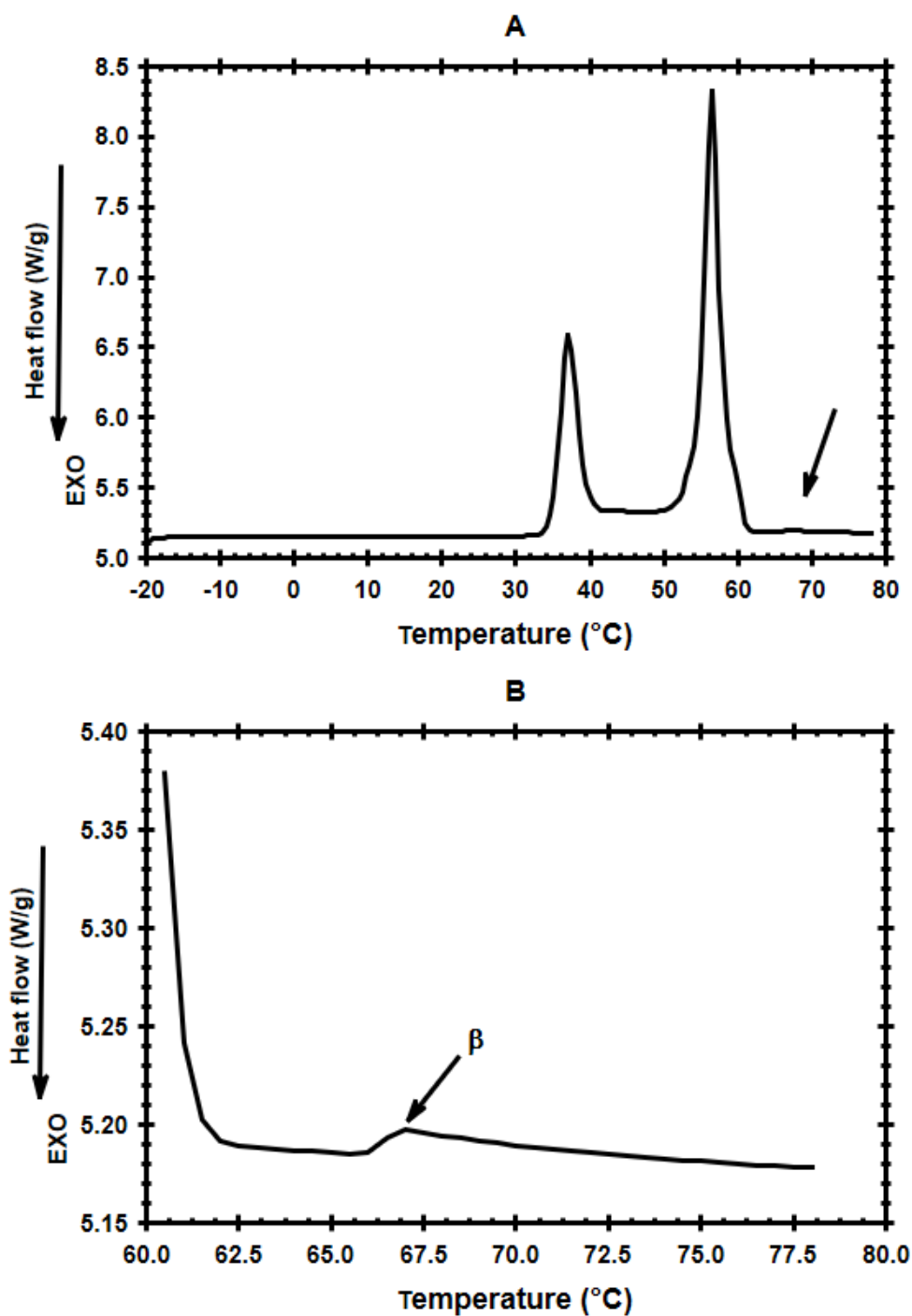


Figure 1SM. Heating thermogram for neat C14 (A); the arrow indicates the melting of the β phase with a T_M of $67.11\text{ }^{\circ}\text{C} \pm 0.14\text{ }^{\circ}\text{C}$. The insert (B) shows a magnification of the thermogram to point out the melting of the β phase (indicated with an arrow).

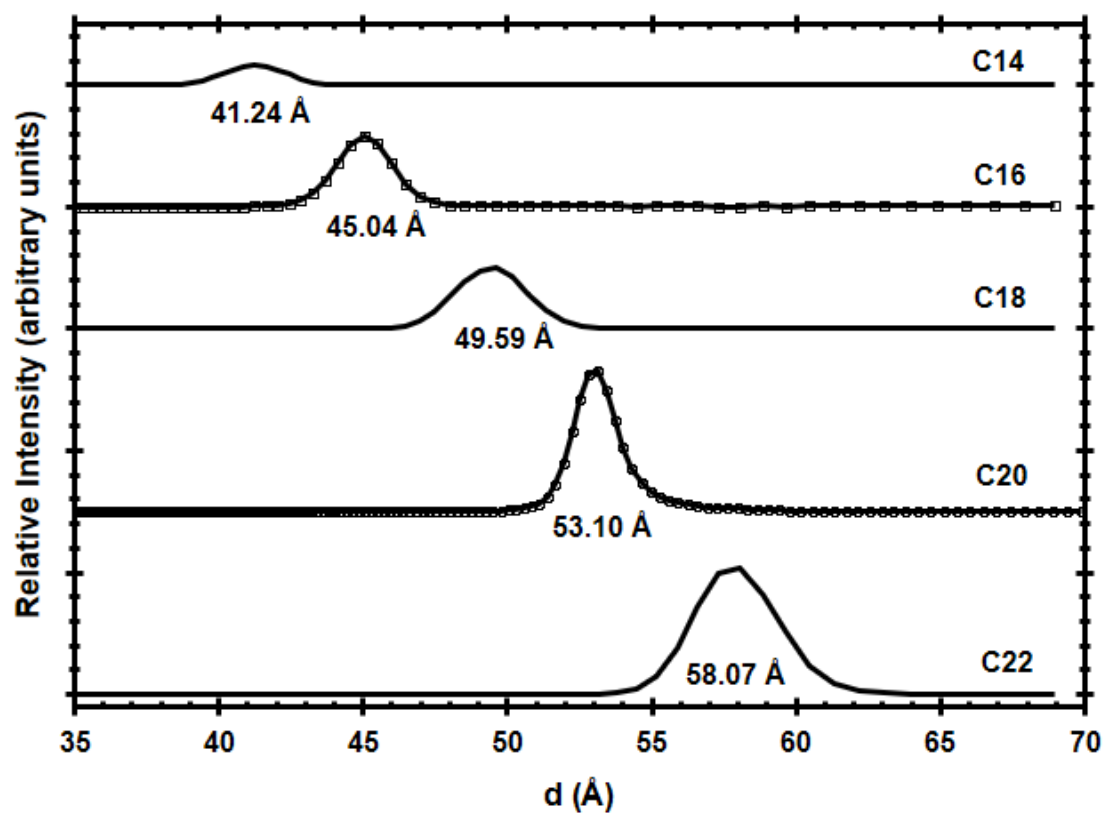


Figure 2SM. Small angle X-ray diffractograms for the neat C14 to C22 obtained at 5°C. The value below the diffraction peaks indicates the corresponding d (d_{SAX}). The d_{SAX} was associated with the longitudinal stacking of the bilayers of stacked monoglycerides.

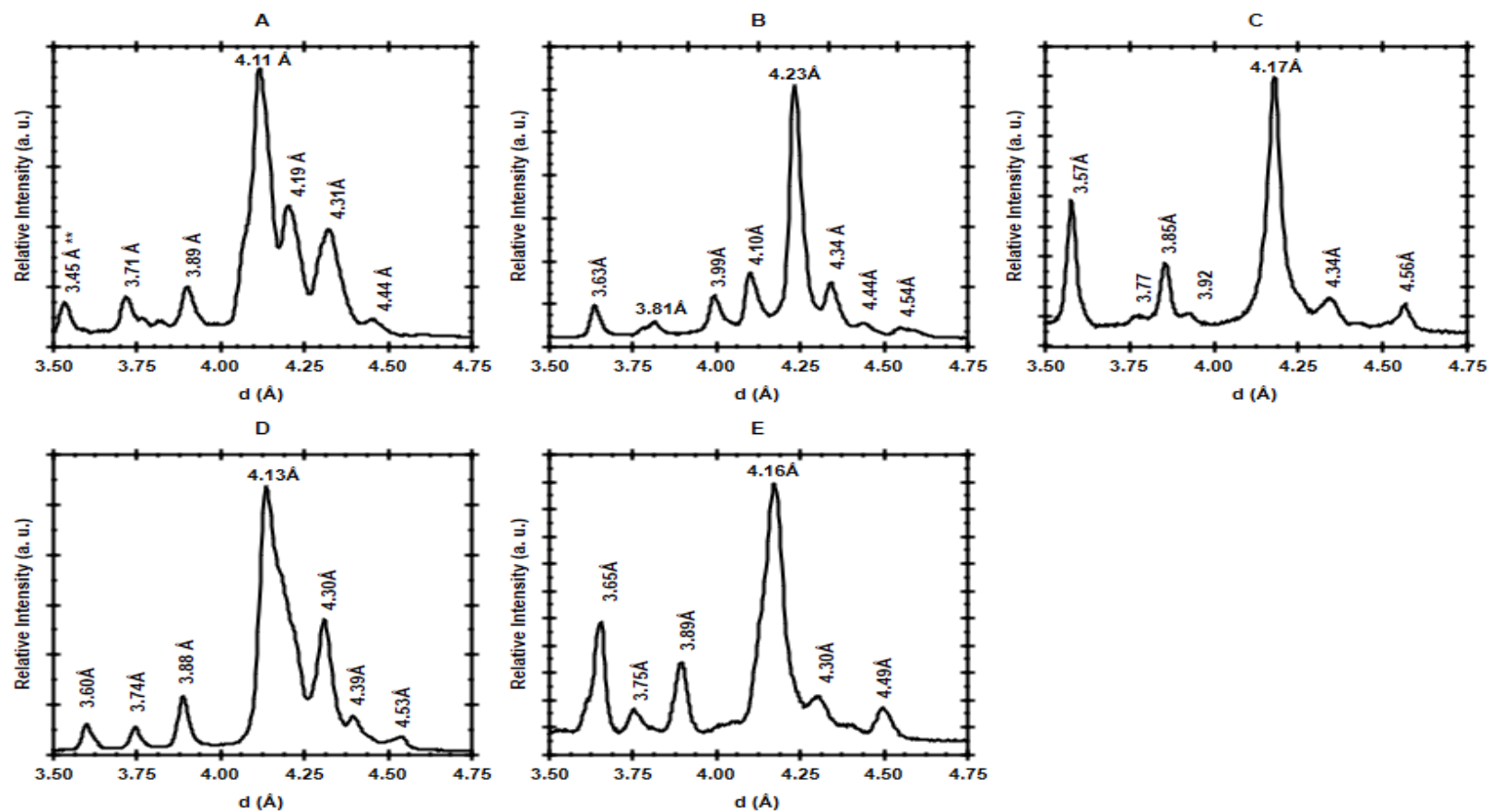


Figure 3SM. Wide angle X-ray diffractograms for the neat C14 (A), C16 (B), C18 (C), C20 (D), and C22 (E) obtained at 5°C. The values indicate the d value associated with the diffraction peaks. a. u. = arbitrary units of the diffraction light intensity.

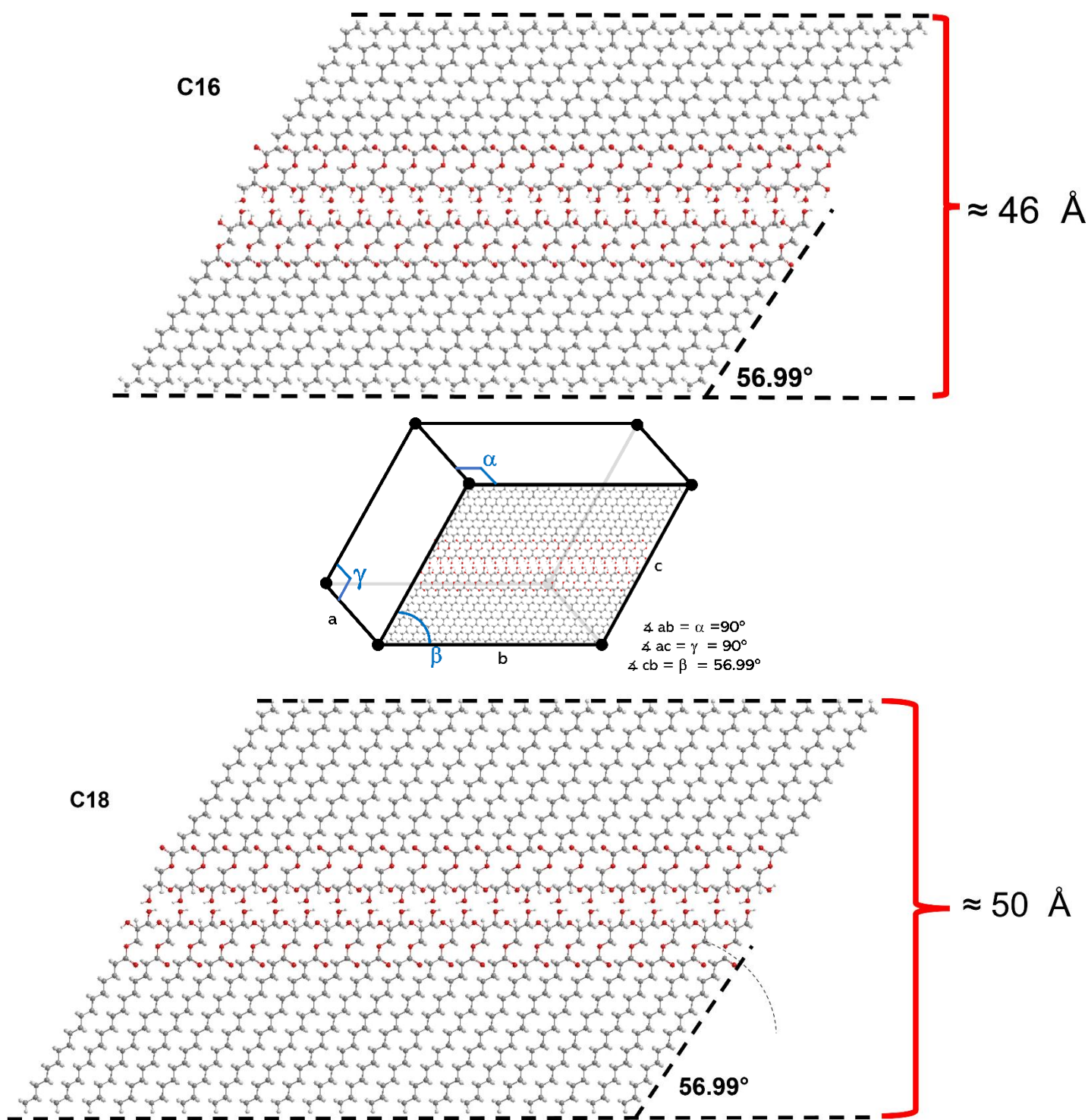


Figure 4SM. Molecular models for the C16 and C18 in monoclinic arrangement. The models were developed with Chem Draw Professional V 17.1.0.105(19) and Chem3D Ultra V 17.1.0.105 (PerkinElmer Informatics, Inc., Waltham, MA, USA) considering the d_{SAXS} for the corresponding MG (Fig. 2SM) and the γ value of 56.99° determined as described in the text. The red circles are oxygen atoms of the ester bond and the primary and secondary -OH groups of the monoglyceride. White and gray circles are the hydrogen and carbon atoms, respectively, of the esterified fatty acid. The insert represents the monoclinic unit cell and the corresponding angle values.

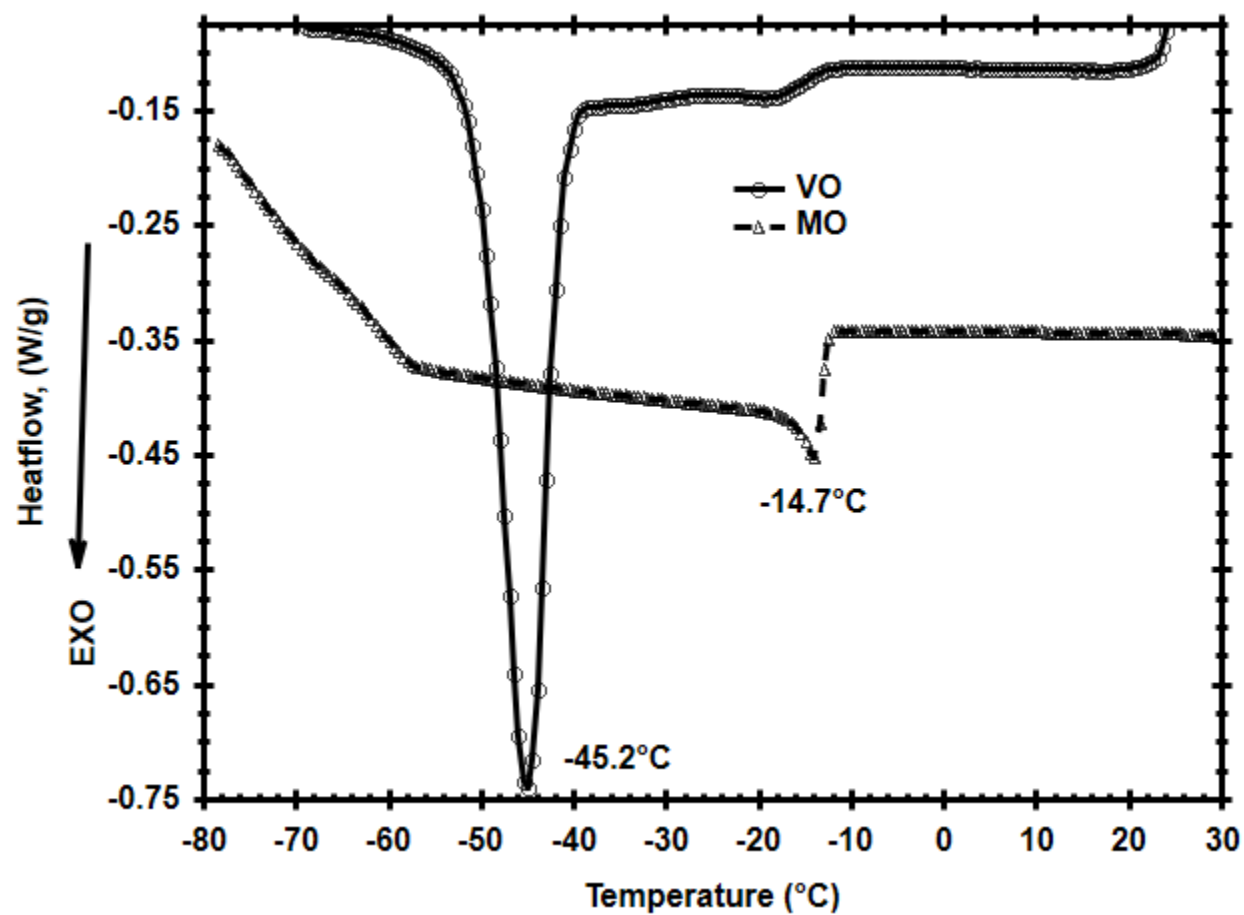


Figure 5SM. Cooling thermogram for the safflower oil high in triolein (VO) and the mineral oil (MO). The values indicate the corresponding crystallization temperatures (T_{Cr}).

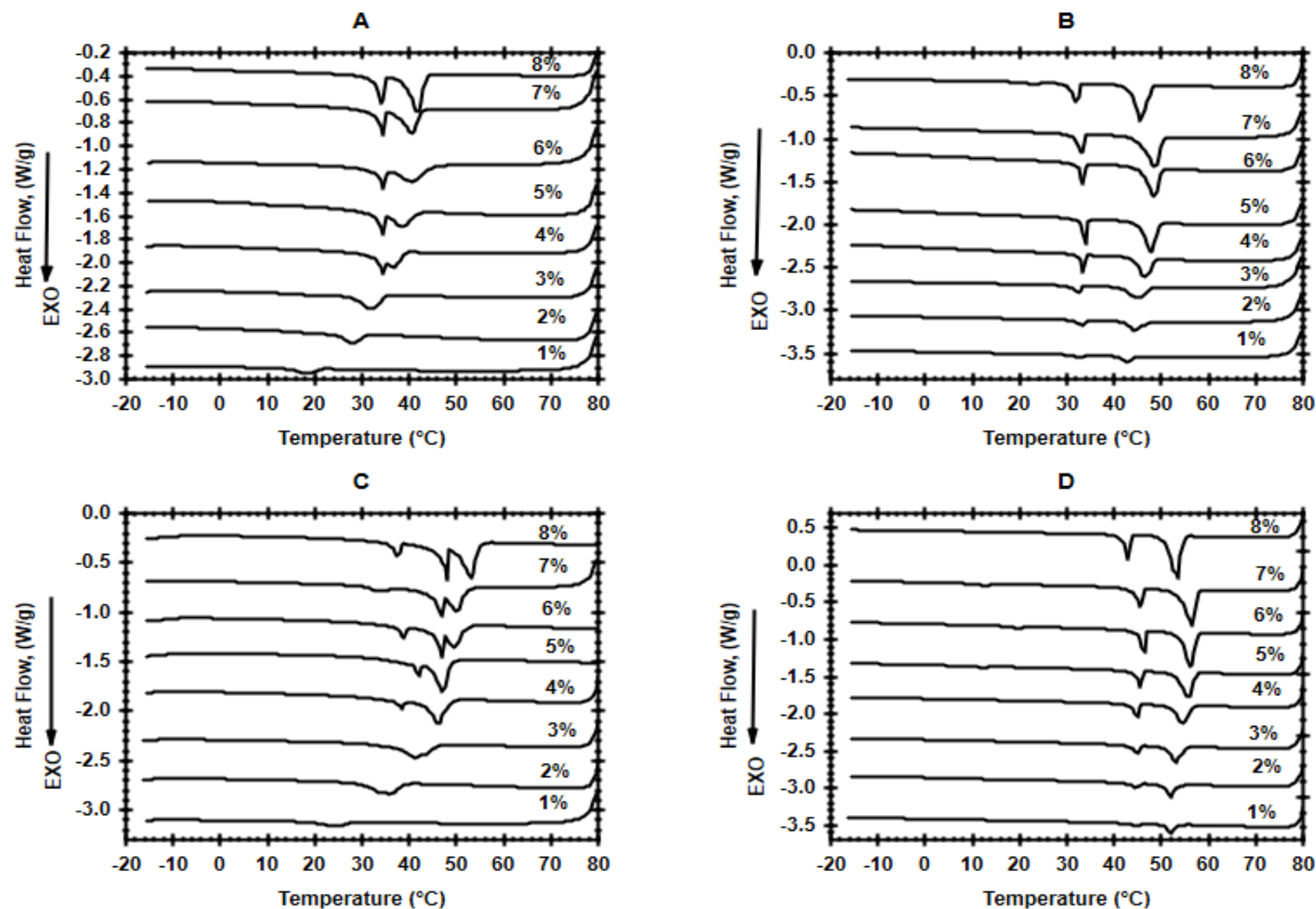


Figure 6SM. Cooling thermograms for C16 and C18 at 1% to 8% in the safflower oil high in triolein (A and C, respectively) and in mineral oil (B and D, respectively).

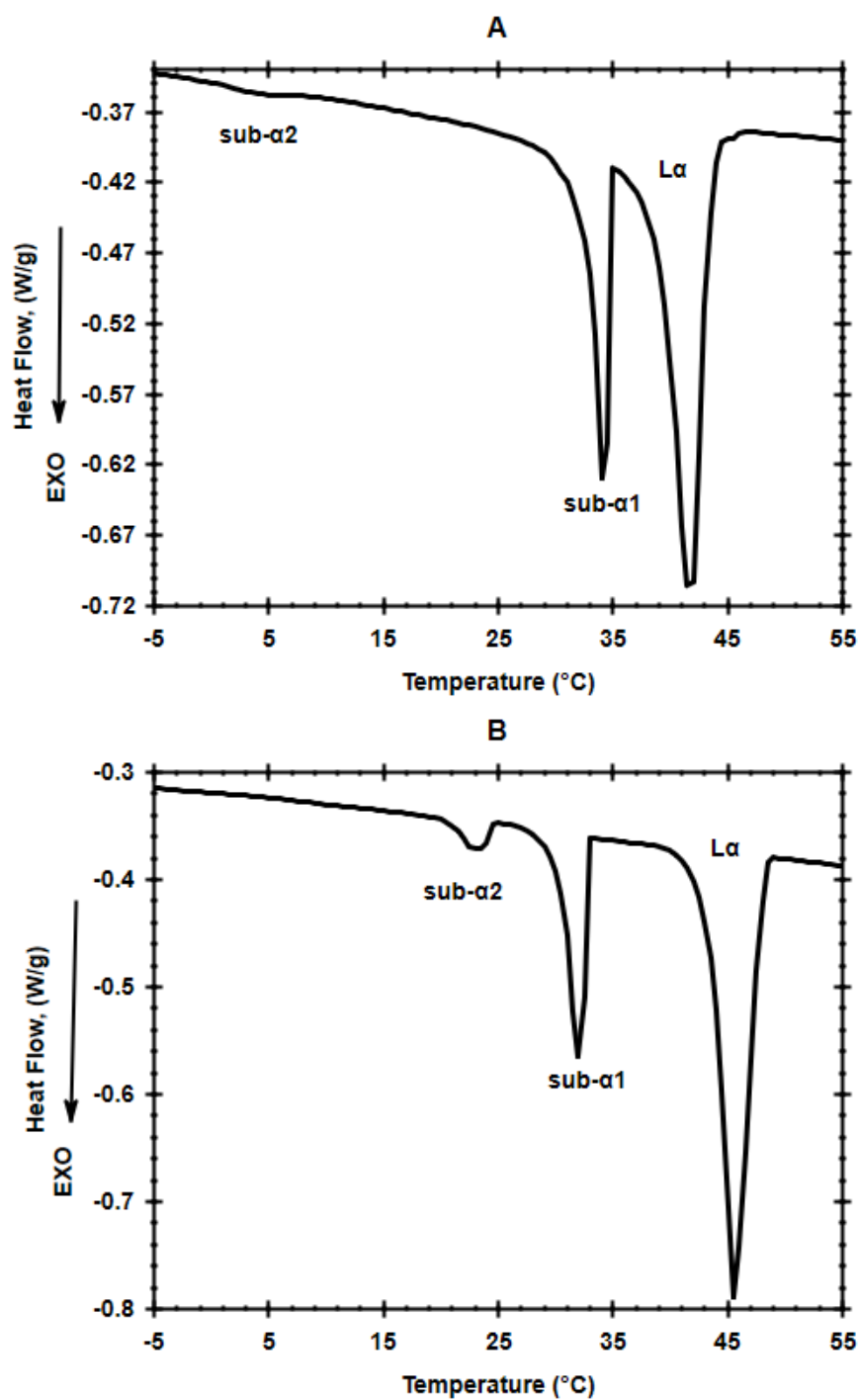


Figure 7SM. Cooling thermograms for the 8% C16 solution in safflower oil high in triolein (A) and in mineral oil (B) showing the crystallization of L α , sub- α 1, and sub- α 2 phases.