

Thermal Properties of Organogels Formed by Phenyl Benzoate Derivatives Having Fluoroalkyl Group at Terminal Position

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In our previous work, it was found that some low molecular weight compounds having fluoroalkyl group at the terminal position formed organogels by cooling after heating and dissolving in various organic solvents. While relationship between molecular structures and gelation properties was not elucidated.

In this study, properties of organogels formed by phenyl benzoate derivatives having fluoroalkyl group (Figure 1) were synthesized and evaluated.

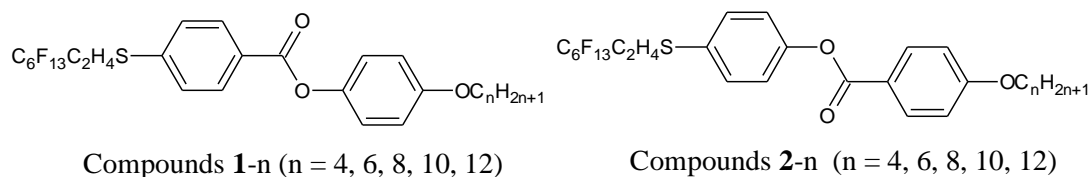


Figure 1. Chemical structures of compounds **1-n** and **2-n**

The gel-sol transition temperature of propylene carbonate gels formed by compounds **1-n** and **2-n** was shown in figure 2.

Compound **1-n** added in amount of 1wt% or less were able to gelate propylene carbonate. In addition, the gel-sol transition temperature of 5wt% gel formed by compound **1-10** was highest in four compounds. It was considered that the thermal properties were affected by carbon chain length of alkyl group at the terminal position and orientation of ester group in the compounds.

In this presentation, the thermal properties of organogels will be considered by gel-sol transition temperatures and thermodynamic behavior.

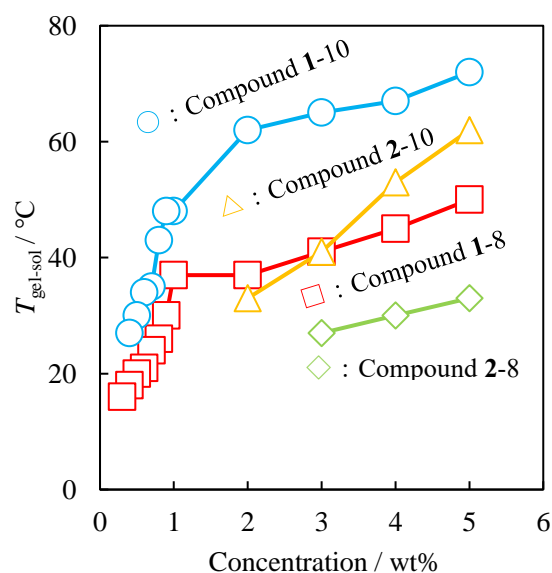


Figure 2. Gel-sol transition temperature of propylene carbonate gels