

A UNIQUE CLASS OF PERFLUOROPOLYETHER FLUIDS

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Perfluoropolyethers from tetrafluoroethylene photooxidation are characterized by chemical and thermal resistance, attractive physical and antiwear properties. These properties make them suitable as working in advanced technologies where critical conditions are involved.

VIBRATIONAL AND THERMODYNAMIC PROPERTIES OF FLUOROCARBONYLSULFENYLCHLORIDE (FCOSCl)

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The infrared spectra of gaseous and solid (both pure and matrix-isolated) FCOSCl, as well as its Raman spectrum as a liquid, have been measured. The spectra in the gas and liquid phases show an intensity dependence with temperature of bands assigned to the carbonyl stretching, pointing to rotational isomerism around the C-S bond. Results could be interpreted considering the molecule as planar with the halogen atoms in a trans position for the most favoured configuration as compared with the cis isomer. The energy difference existing between both configurations has been assessed. Force constants and thermodynamic functions were obtained from normal coordinate and statistical mechanics calculations respectively. Results of a CNDO calculation reproduced fairly well the experimental stretching force constants and gave some insight into the origin of the rotational barrier as due to π -bonding extended to the OCS skeleton.