

## THE $\nu_1$ BAND AND MOLECULAR PROPERTIES OF CHLOROSYL FLUORIDE, FCIO

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Rotationally resolved spectra of FCIO have been obtained for the first time employing the *in situ* hydrolysis of ClF<sub>3</sub>. The molecule has also been proposed as an intermediate in several reactions involving ClF, Cl<sub>2</sub>O, and ClF<sub>3</sub>O. At present, the ClO stretching band centered near 1037.7 cm<sup>-1</sup> for F<sup>35</sup>ClO has been recorded with a resolution of 0.003 cm<sup>-1</sup>, and its analysis is under way. Strong *a*-type and much weaker *b*-type lines have been assigned. Transitions with quantum numbers larger than 70 and 20 for *J* and *K<sub>a</sub>*, respectively, enabled the determination of precise spectroscopic constants. The derived properties, such as molecular structure and force field, will be discussed in relation to *ab initio* results and data from related molecules, for example FCIO<sub>*n*</sub>, with *n* = 0, 2, 3.