UV-VISIBLE TRANSITION STRENGTHS OF THE HALOGENS IN THE GAS PHASE AND IN INERT LIQUID SOLVENTS

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The UV-visible absorption spectra of the homonuclear halogens involve three electronic bands – A-X, B-X, and B'(1_u)-X. It has long been known that the absorption in inert solvents is stronger than that in the
gas phase by 20-30I_2 and Br_2 in CCl_4 and n-heptane are recorded at temperatures from 15 C to 50 C and are decomposed into component bands by least-squares analysis. The results of this analysis show: (1) the A-X
band strength is the same within 5increased absorption strength in the liquid phase is attributable mostly
if not entirely to the B'-X transition. The reasons for this behavior are under investigation.