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Atomic Migration in $CuCr_{0.25}Fe_{1.75}O_4$

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$CuCr_{0.25}Fe_{1.75}O_4$ has been studied by Mössbauer spectroscopy and X-ray diffraction. The crystal structure is found to be a cubic spinel with the lattice constant $a_0=8.372$Å. Debye temperatures for the tetrahedral(A) and octahedral (B) sites are found to be 623 and 225 K, respectively. It is noted that, as the Cr concentration in the copper ferrite increases, the Debye temperatures tend to decrease and atomic migration between the *A* and the *B* sites is stimulated.