

Magnetic Order in Li-Mn Spinel

C. B. Azzoni, M. C. Mozzati, A. Paleari^a, V. Massarotti^b, D. Capsoni^b and M. Bini^b

INFM Department of Physics "A. Volta" of the University, Via Bassi 6, I-27100 Pavia (Italy)

^a INFM Department of Materials Science of the University, Via Cozzi 53, I-20126 Milan (Italy)

^b Department of Physical Chemistry of the University and CSTE-CNR, Viale Taramelli 16, I-27100 Pavia (Italy)

Z. Naturforsch. **53a**, 693–698 (1998); received April 25, 1998

Magnetic measurements were carried out on different samples of Lithium-Manganese spinel LiMn_2O_4 , great care having been taken to avoid the presence of spurious magnetic phases, such as Mn_3O_4 . Susceptibility data, showing deviations from paramagnetic behaviour at about 40 K, were analyzed in terms of local magnetic interactions, taking into account the structural and transport properties of these compounds. The magnetic response of pure and stoichiometric samples suggests that the onset of a long-range magnetic ordering is hindered by the topological frustration of the antiferromagnetic octahedral sublattice of the spinel.

Key words: Magnetic Susceptibility; Electron Paramagnetic Resonance; Lithium Manganese Oxides; Lithium Manganese Spinel.

Reprint requests to Prof. C. B. Azzoni. Fax: 0382 507563