

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Mo₂BC: Chemical and External Pressure Effects¹ R. FALCONI, DACB-Universidad Juarez Autonoma de Tabasco, R. ESCAMILLA, R. ESCUDERO, IIM-Universidad Nacional Autonoma de Mexico — The intermetallic Mo₂BC is a superconductor with a $T_C = 6.6$ K and a crystalline face centered orthorhombic structure. Chemical pressure generated by changing the carbon concentration decreases T_C in a non monotonic rate. Complete elimination of carbon, changes the crystalline structure from orthorhombic to body centered tetragonal, and reducing T_C to about 5.8 K. At ambient pressure the compound presents a minimum in the resistivity at 50 K, which could be related to a Kondo anomaly. In polycrystalline samples we applied external pressures up to 4.8 GPa with a diamond anvil cell, which induced negative changes in the superconducting transition at a rate $dT_C/dP = - 0.03$ K/GPa. These results will be discussed in terms of the electronic band structure.

¹Acknowledgements: (R. F.) Thanks SEP-Promep 20050643 UJATAB-CA175.

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Date submitted: 16 Nov 2007

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