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TÜBİTAK

PREPARATIONS AND STRUCTURE DETERMINATION OF SOME NOVEL *N,N*-DIALKYL-*N'*-*m*-CHLOROBENZOYLTHIOUREA LIGANDS AND THEIR Ni(II), Co(II) AND Cu(II) COMPLEXES

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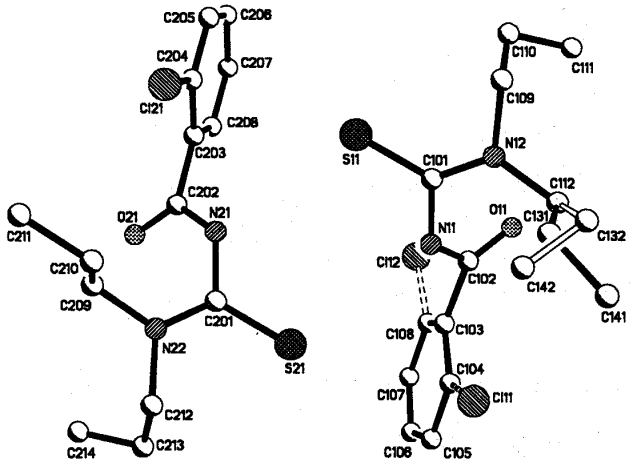
Introduction: The bioactivities of thiourea derivatives and their complexes have been successfully screened for various biological actions, and some *N*-Substituted-*N'*-carbonyl thiourea have been used in commercial fungicides [1,2]. *N,N*-dialkyl-*N'*-benzoylthioureas have been found to be useful ligands for the potential determination of traces of the transition metals by means of normal phase chromatography [3].

Discussion: The ligands and its metal complexes of *N,N*-dialkyl-*N'*-*m*-chlorobenzoylthiourea have been synthesised and their structure determined by NMR, Mass, IR, elemental analyses techniques. Thermal decomposition of these metal complexes has also been investigated by TG, DTG and DTA. GC-MS combined system was used to identify the products during pyrolytic decomposition. The pyrolytic end products were identified by x-ray powder diffraction. The crystal structure of the ligands and its metal complexes were determined by X-ray crystallography.



Empirical formula:	$C_{14}H_{19}ClN_2OS$
Formula weight	: 298.82
Crystal system	: Triclinic
Space group	: P-1
Volume	: 1586.7(4) Å^3
Density (calculated)	: 1.251 Mg/m^3
Z	: 4
Unit cell dimensions :	
a = 7.886(1) Å	α= 74.59(1)°
b = 14.095(2) Å	β= 76.86(1)°
c = 15.208(2) Å	γ = 85.56(1)°

References:

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3. König, K. H.; Schuster, M.; Schneeweiss, G.; Steinbrech, B. *Fresenius' Z. Anal. Chem.* 1984, 319, 66