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ENVIRONMENTALLY FRIENDLY FORMULATIONS OF 2,6-DICHLOROBENZONITRILE PESTICIDE INTERCALATED INTO CALCINED LAYERED DOUBLE HYDROXIDES

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Abstract

The intercalation of 2,6-dichlorobenzonitrile (DBN) into the NiMgAILDH, CuMgAILDH and MgAILDH layered double hydroxides was carried out using the calcination-rehydration reaction using NiMgAl, CuMgAl and MgAl oxide precursors, obtained by calcination at 550°C. X-ray diffraction (XRD), elemental analysis, infrared spectroscopy (FTIR) and thermogravimetric analysis (TG-DTG) confirmed that DBN molecules were successfully intercalated into the interlayer spaces of LDHs. The resulting solid products reconstructed the LDH structure by incorporating the DBN into the lamellar layer.

Key words: layered double hydroxides, 2,6-dichlorobenzonitrile, mixed oxides, calcinations-rehydration

Received: December, 2011; *Revised final:* June, 2012; *Accepted:* July, 2012
