

## **HR-253 Experimental Use of Calcium Magnesium Acetate**

**Key Words:** Calcium magnesium acetate production, Road deicers

### **ABSTRACTS**

The Iowa Department of Transportation Materials Laboratory personnel announced in early 1982 a process to produce a road deicer consisting of sand grains coated with calcium magnesium acetate (CMA). From that point forward the Iowa DOT began searching for a means of economically producing CMA to their concept.

During 1983 and 1984 the first attempts devised for commercially producing CMA were attempted by the W.G. Block Company, Davenport, Iowa, under Iowa Highway Research Board Project HR-253. This first attempt at commercially producing CMA was accomplished by the use of concrete transit mixer equipment. Even though this procedure proved successful in the batch mixing of CMA, the need for higher production rates to reduce the cost per ton still existed.

During the fall of 1984, Cedarapids Inc, Cedar Rapids, Iowa, proposed to Iowa DOT personnel the application of their technology to a continuous mixing concept for CMA. Arrangements were made for the continuous test mixing of 60 to 100 tons of CMA/sand deicer. This report covers the production effort, description and results of procedures outlined in Cedarapids Inc's proposal of September 19, 1984.

The objectives of this research were:

1. To produce the CMA/sand deicer concept on a continuous mixing basis to Iowa DOT CMA concentration levels.
2. To evaluate the results of preheating the carrying vehicle (sand) prior to CMA ingredient introduction.
3. To analyze the feasibility of production equipment and procedures necessary for portable and/or stationary applications of continuous mixing concepts.