



Deicer Tracking and the Indoor Slipperiness Issue

There are no oil-based raw materials in calcium chloride products manufactured by Occidental Chemical Corporation ("OxyChem"), only inorganic salts. The Strategic Highway Research Program, a unit of the National Research Council, compared the frictional characteristics of various deicer materials to that of deionized water, (SHRP-H-322, 1992). In this test, calcium chloride solutions were found to have frictional characteristics 91 - 100% of those for deionized water. This performance was slightly better than most of the other products tested, including rock salt, magnesium chloride, sodium formate and calcium magnesium acetate.

Insight into the indoor slipperiness issue can be found in literature dedicated to building maintenance practices. In an article titled, "Distributing Floor Safety", from the January 2004 issue of Maintenance Supplies Magazine, the founder of the National Floor Safety Institute, Russell J. Kendzior states:

"To prevent slips and falls, it is important to select the right floor, clean it properly, keep it dry and conduct periodic inspections... Many cleaning products, if not properly used, leave a slippery film behind which may contribute to slips and falls."

The December 2003 "Floor Care Tip of the Month" from Cleaning and Maintenance Management Magazine discusses winter floor care methods. The article states:

"Calcium chloride residue is alkaline in nature; more detergent (and thus even more alkalinity) may yield a fairly sticky cleaning solution that won't rinse clean... To clean more effectively in the presence of calcium chloride, apply a mild acid product... Neutralizer products are generally prepared from a citric acid base, have pH levels of 2.0-3.0 and are suitable for autoscrubber use. It may be useful to alter your floor care plan when track-in, including melting products, is heavy. Increase autoscrubbing frequency around entrances."

From the January 2004 issue of Cleaning and Maintenance Management Magazine, the article titled, "Preventing cold-weather slips and falls" states that the best preventative measure for keeping floors dry is to have long walk-off "runners" so that individuals can shake off the snow or water that is on their feet. In this article, Mr. Kendzior states,

"Most (runners) should be between 12 and 15 feet to have adequate removal of moisture from shoes, as a 3 by 5 walk-off mat just isn't good enough for water."

Other slip prevention tips mentioned in this article include:

- If possible, have a maintenance person stationed at the door throughout the high-traffic times (mornings, lunch hour and evenings after work).
- Post hazard signs very close to the front door so that people coming in to the building are aware that they should be cautious.

Attempting to use deicers as a substitute for shoveling will most often lead to over-application and excessive tracking of slushy snow containing residual deicer. Ideally, only enough deicer is applied to loosen snow and ice, followed by shoveling as soon as possible.

The information provided above indicates that the frictional characteristics of calcium chloride solutions have been found to be similar to that of water and that indoor slipperiness issues can be prevented if a few basic maintenance techniques are followed to help keep floors as clean and dry as possible.

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