

Technical Bulletin

Additional Information: Reaction Between Potassium Acetate Based Deicers and Zinc

This bulletin provides additional information about the reaction between zinc and Cryotech CF7[®], potassium acetate-based liquid deicer.

SUMMARY

A slow reaction may occur when zinc is exposed to a potassium acetate-based deicer. The reaction results from prolonged contact and is not an issue during normal use.

ZINC REACTION

Hot-dipped galvanizing places a coating of zinc on the surface of steel. Brass alloys also contain zinc. Although zinc has excellent properties to resist corrosion from atmospheric conditions, it is a fairly reactive metal. As a result, potassium acetate-based deicers, like CF7, can cause a slow reaction in storage systems containing zinc. With prolonged exposure this reaction may cause hydrogen gas to form and zinc to discolor and dissolve.

STORING CF7

Therefore, CF7 should not be stored or plumbed through systems that use galvanized, zinc, or brass components.

FIELD USE

For a number of reasons there is seldom a reaction between potassium acetate and zinc coatings during application.

- Exposure is limited to short intervals.
- Precipitation causes the deicer to dilute.
- Corrosion reactions occur slowly at cold temperatures when deicers are applied.
- Even at low temperatures CF7 biodegrades within a few days.

Experience at the Zilwaukee Bridge near Saginaw, Michigan, where CF7 has been used for years, supports the conclusion that little to no reaction occurs between CF7 and galvanized materials during deicing operations. The bridge is essentially corrosion-free.

CONCLUSION

Do not use galvanized, zinc, or brass tanks or piping for long-term storage of CF7. The exterior surfaces of application equipment should be routinely washed with warm soapy water.