Technical Bulletin

Reactions Between Potassium Acetate Based Deicers and Zinc

This bulletin update reviews facts about zinc's reaction to Cryotech's E36®, potassium acetate-based liquid runway deicer.

SUMMARY

A slow reaction may occur when potassium acetate deicer and zinc are exposed to each other. This reaction is the result of prolonged contact and is not an issue during normal use when the fluid is applied as directed.

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 E36, 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 E36

Potassium acetate based deicers, like E36, 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.

- 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 E36 biodegrades within a few days.

CONCLUSION

Do not use galvanized, zinc, or brass tanks and piping for long-term storage of E36. And routinely wash exterior surfaces of application equipment with warm soapy water.

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