

Office of Airports Briefing Paper
on
Potential Shortage of Potassium Acetate Runway Deicer Fluid
September 15, 2008

Issue: The FAA has learned of a potential shortage of potassium acetate [KAc] based runway deicer fluid [RDF] for the 2008/09 winter season

Background

- We have been informed by the leading manufacturer of KAc-based runway deicers, Cryotech Deicing Technology [CDT] headquartered in Fort Madison, Iowa, that the availability of their E36 [trade name] will be significantly limited for the 2008/2009 winter season.
- This situation is a direct result of the lack of raw materials used in the manufacturing of any KAc-based product.
- Raw materials are in short supply due to an on-going mine strike in Canada. As reported by CDT, last year they produced **9 million gallons** of E36 for the 2007/2008 winter season, but will only produce around **3 million gallons** for this upcoming winter season.
- We are fairly sure that other manufacturers of KAc products in North America will probably facing similar shortages of their KAc products.
- KAc-based products are the main RDF used in the U.S. As reported by CDT, if the mine strike ended today, the delivery of raw materials and the manufacturing of additional KAc-based products would still take a few months to alleviate this situation.
- Under Part 139, there are approximately 560 commercial airports. The FAA will work with the airports that use these fluids.

FAA Actions:

- As part of its continuing efforts to address additional/alternative deicing products, the FAA's Office of Airports will conduct testing of several runway deicer fluids that contain lesser amounts of KAc at **Pease International Tradeport Airport in New Hampshire** in late September. **NOTE: These tests were already planned prior to the FAA's notification of a potential shortage of KAc-based runway deicers.**
- One tested RDF will be a commercially available propylene glycol + urea RDF.
- Products showing successful results still need to pass aircraft compatibility tests under SAE Aerospace material specification AMS 1435.
 - All runway deicers must pass the friction testing and AMS 1435 specifications before being used on runways. One possible solution in an emergency situation is for the FAA to work with ATA to relax the one-year storage stability tests since airport operators can not use leftover RDF until it passes these tests. Fortunately, most if not all of these products are already in the one-year test.
- We anticipate success of most, hopefully all of these products, thus offering additional alternatives to airport operators.
- The results of the friction trials are expected in mid October and will be broadly disseminated to our certificated airports via Cert Alert, and to our non-certificated airports via newsletters and bulletins through our industry partners such as AAEE, ACI, ATA, NASAO, and AOPA.
- The FAA has an excellent working relationship with our industry partners and we are all committed to finding workable solutions to address this potential shortage of RDF, whose impact may vary from airport to airport.

Recommended FAA Alternative measures:

Airport operators have the option to use solid or liquid-based runway deicers

Alternative Products and Sand –

- Airport operators have other alternative fluid and solid runway deicers available on the market.
- One operational solution may be to use a fluid RD along with a solid RD, and sanding.

Fluid alternatives-

- FAA Advisory Circular 150/5200-30, *Airport Winter Safety and Operations*, (which is under rewrite and out for public comment) also recommends the fluids propylene glycol [PG] and ethylene glycol [EG] products meeting SAE AMS 1435.
 - These recommendations include products that contain lesser amounts of KAc or none at all. For example, BX36 has less KAc than E36, while some products combine PG+KAc, and products made of PG+urea have no KAc.
- We have been informed that sufficient supplies of PG+urea are available for existing and new customers.

Solid alternatives-

- AC 150/5200-30 also recommends dry material namely, urea, sodium formate, and sodium acetate products that satisfy SAE AMS 1431.
- Of the three dry materials, sodium acetate products are the most vulnerable to the shortage.
- However, we have not received reports of shortages in these products.

Sand Selection - should be as prescribed by AC 150/5200-30

Contingency Back-Up Planning-

- We recommend that airport operators that rely on KAc-based products take three actions.
- We recommend airports start developing a contingency plan that may include the use of glycol-based fluid alternative, a solid RD and/or sand.
- We also suggest airports owners ensure their tenants and operators well informed of the shortage.
- Involve the airport environmental specialist on the selection process so that the environmental runoff impacts are accounted for, if there are any.