



U.S. Department
of Transportation
**Federal Aviation
Administration**

Office of the Associate Administrator
for Airports

800 Independence Ave., SW
Washington, DC 20591

October 10, 2008

Dear Industry Representative:

We have learned of a potential shortage of potassium acetate-based runway deicer fluid for the 2008/2009 winter season. A leading manufacturer of potassium acetate runway deicers has recently said that the availability of its 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 potassium acetate product.

Raw materials are in short supply due to an ongoing mine strike in Canada. One leading manufacturer reported last year it produced **9 million gallons** of E36 for the 2007/2008 winter season, but will only produce around **2 million gallons** for this upcoming winter season. We have confirmed that all major North American potassium acetate manufacturers are having similar difficulties.

In light of this shortage, airports should develop contingency plans to deal with winter conditions without the use of potassium acetate-based fluid deicers/anti-icers.

I have enclosed an information paper that provides additional details and suggestions for alternative deicers/anti-icers. I would appreciate if you would share this information with your members.

Sincerely,

Original Signed By:
D. Kirk Shaffer

D. Kirk Shaffer
Associate Administrator
for Airports

Enclosure

ISSUE PAPER AAS-1

Group: Federal Aviation Administration; Office of Airports

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

Background and Current Issues:

- A leading manufacturer of KAc-based runway deicers, Cryotech Deicing Technology [CDT] headquartered in Fort Madison, Iowa, recently informed FAA 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 have confirmed that the major North American KAc manufacturers are having similar difficulties. They include CDT, Old World Industries, Inc. (OWI), Clariant Corp., Octagon Process, Inc and Jarchem Industries, Inc. CDT and OWI are the prime vendors. (See vendor info and product listing.)
- KAc-based products are the main RDFs 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.
- As reported by the manufacturers, a similar winter season to last year could translate into the depletion of limited KAc by January or February.
- Three of the four leading manufacturers offer solid deicer materials, some not containing KAc. As reported, they have sufficient materials for existing customers and some limited supplies for new customers.
- Buyers could see increased prices at time of shipment, which will be based upon available finished product.

FAA Actions: Friction, aircraft compatibility, and storage testing

- 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 the potential shortage of KAc-based runway deicers.**
- One fully tested fluid deicer will be commercially available using propylene glycol + urea. (Two of the five major vendors of KAc offer this product).

- Ethylene glycol [EG] products meeting the Society of Automotive Engineers (SAE) Aerospace Aviation Material Specification (AMS) 1435, *Fluid. Generic. Deicing/Anti-Icing-Runways and Taxiways*, require no further FAA actions for their usage.
- Products showing successful friction test results still need to pass aircraft compatibility tests under SAE AMS 1435.
 - All runway deicers must pass the friction testing and AMS 1435 specifications before being used on runways. In terms of SAE AMS 1435, one possible solution in an emergency situation is for the FAA to work with the Air Transport Association (ATA) to relax the one-year storage stability tests since airport operators can agree not use leftover RDF until it passes this test. Fortunately, most if not all of these products to be tested for friction are already in for evaluation under SAE AMS 1435, including the one-year test.
- We anticipate success of most, if not all of these products, thus offering additional alternatives to airport operators.
- The results of the friction tests 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 The American Association of Airport Executives (AAAE), the Airports Council International (ACI), the Air Transport Association (ATA), the National Association of State Aviation Officials (NASAO), and the Airport Owners and Pilots Association (AOPA).

Alternative Products

Fluids

- FAA Advisory Circular (AC) 150/5200-30, *Airport Winter Safety and Operations* also recommends fluids such as propylene glycol [PG] and ethylene glycol [EG], which are products meeting SAE AMS 1435.
 - These recommendations include products that contain lesser amounts of KAc or none at all. For example, Cryotech 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.

Solids

- AC 150/5200-30 also recommends dry materials including, urea, sodium formate, and sodium acetate products that satisfy SAE AMS 1431, *Compound. Solid Deicing/Anti-Icing Runways and Taxiways*.
- Of the three dry materials, sodium acetate products are the most vulnerable to the shortage, however we have not received reports of shortages at this time.
- Use of sand should be as prescribed by AC 150/5200-30.

Contingency Back-Up Planning- Airport operators that rely on KAc-based products should consider taking the following actions:

- Develop contingency plans; this could include the use of glycol-based fluid alternatives, solid runway deicers, and/or sand. Plans should include how to deal with wet snow, compacted snow, and icing events without the use of fluid deicers/anti-icers.
- Notify airport tenants, users, and Air Traffic Control of the shortage and the possible impacts to flight operations during this winter season.
- Involve an environmental specialist during the deicer selection process so the environmental runoff impacts are properly analyzed, documented and mitigated.

Runway Deicer Manufacturers and Commercially Sold Product Line

Company and Trade Names	<i>Fluid Potassium Acetate KAc</i>	<i>Fluid Potassium Acetate + propylene glycol KAc+PG</i>	<i>Fluid Propylene glycol+Urea PG+Urea</i>	<i>Fluid Potassium Formate KFor</i>	<i>Fluids New Entries & Developmental Products</i>	<i>Solid Sodium Acetate NAAC</i>	<i>Solid Sodium Formate NAFO</i>	<i>Airside Urea</i>
<p>Clariant Corp North Carolina and Canada POC= Bryan McCreary Bryan.mccreary@clariant.com 704-822-2184 Cell 704-904-0799</p>	Safeway KA HOT SAE AMS 1435	Does not produce the product	Does not produce the product	Safeway KF and Safeway KF HOT SAE AMS 1435		Does not produce the product	Safeway SF SAE AMS 1431	
<p>Cryotech Deicing Technology Fort Madison, Iowa POC=Keith L. Johnson -President & CEO keith.johnson@cryotech.com 800-346-7237 or 319-372-6012 www.cryotech.com</p>	Cryotech E36 SAE AMS 1435	Does not produce the product	Does not produce the product	Does not produce the product	Cryotech BX36 Susterra™ propanediol, a new 100 percent renewably sourced product	Cryotech NAAC SAE AMS 1431	Does not produce the product	
<p>Octagon Process, Inc Edison, NJ POC=Alex Myers ameyers@octagonprocess.com 1-732-346-8000</p>	Octagon RD – 1435 SAE AMS 1435	Octamelt SAE AMS 1435	Octagon RD-1426 SAE AMS 1435	Does not produce the product		Does not produce the product	Does not produce the product	
<p>Old Word Industries,</p>	Peak PA	Does not	ORD 2000	Does not		Does not	PEAK SF	

<p><i>Inc</i> Northbrook, Ill POC= Mike Buschek mbuschek@oldworldind.com 1-847-559-2116 1-800-323-5440 www.oldworldind.com</p>	<p>SAE AMS 1435</p>	<p>produce the product</p>	<p>SAE AMS 1435</p>	<p>produce the product</p>		<p>produce the product</p>	<p>SAE AMS 1431</p>	
<p>Other/Secondary Suppliers</p>								
<p><i>Jarchem Industries, Inc</i> Newark, NJ POC=Mary Ellen Fitzgerald mfitzgerald@jarchem.com 973-344-0600x557 www.jarchem.com</p>	<p>Jargrip 2000 SAE AMS 1435</p>	<p>Clearway 1500 SAE AMS 1435</p>	<p>Clearway 1000 None for last 4-5 years</p>	<p>Does not produce the product</p>		<p>Does not produce the product</p>	<p>Does not produce the product</p>	
<p><i>Basic Solutions</i> Ontario, Canada POC Kelvin Williamson-Director Kelvin@basic-solutions.ca 905-562-0770 Cell-647-801-4109 www.basic-solutions.ca</p>	<p>Airport Ice Melt-Liquid</p>	<p>Does not produce the product</p>	<p>Does not produce the product</p>	<p>Does not produce the product</p>		<p>Does not produce the product</p>	<p>Airport Ice Melt- Solid</p>	

Clarification of Reference AC 150/5200-30:

The FAA only recommends runway de/anti-icer products for use on paved areas that have been certified by a 3rd party lab to meet SAE AMS 1431 [solids] or SAE AMS 1435 [fluids]. That is, we do not generate a listing of approved product trade names. Furthermore, we do not conduct SAE AMS certification testing nor do we specify which labs. Since this is a highly specialized technical field all product manufacturers send their products to 3-4 labs worldwide for 3rd party certification. We, through the FAA Technical Center, test frictional properties of proposed new products.

We recommend that airport operators only buy deicer products that have passed SAE AMS 1431 or 1435. They should also obtain a copy of the lab certification for their record. For airports certificated under 14 Code of Federal Regulations, Part 139, that copy should be placed in the Snow and Ice Control Plan.