



Date: June 3, 2010

RE: Update on Catalytic Oxidation Testing for Cryotech BX36[®], Cryotech EX180[™], Cryotech XT360[®], and Cryotech NAAC[®]

Cryotech Deicing Technology has been actively involved with aerospace industry efforts to reduce catalytic oxidation of carbon brakes caused by potassium acetate and potassium formate based deicers. The potassium in these products is known to accelerate the weight loss of carbon used in brake materials at certain temperatures and concentrations.

The SAE A-5 Aerospace Landing Gear Committee has approved a new protocol to test the effect of deicers on carbon brake material. Test protocol SAE AIR5567-2009* is designed to assess the relative effects of runway deicing chemicals and is in the final acceptance by the SAE Aerospace Council.

Beginning in the early 2000's, catalytic oxidation of carbon brakes became of increasing concern to the industry. To address these concerns, Cryotech began research and development for the next generation, bio-based liquid runway deicers. Cryotech developed Cryotech BX36[®], which contains less potassium than traditional potassium based deicers while maintaining equivalent performance. Independent testing of BX36 on brake materials manufactured by Honeywell and Messier-Bugati, included testing to the new protocol SAE AIR5567-2009* by Anti-icing Materials International Laboratory (AMIL). The results of the testing concluded that BX36 provided a significant reduction in carbon weight loss over traditional potassium based deicers.

More recently, Cryotech developed two additional bio-based liquid deicers, Cryotech EX180[™] and Cryotech XT360[®]. These products were tested by AMIL to test protocol SAE AIR5567-2009*. Both products demonstrated a similar significant reduction in carbon weight loss over traditional potassium based deicers.

Industry testing has also determined that as a catalyst for oxidation of carbon, sodium can have less of an effect than potassium. To confirm this industry testing, Cryotech submitted Cryotech NAAC[®] to AMIL for testing to the SAE AIR5567-2009* protocol. NAAC is a solid deicer made of 97% anhydrous sodium acetate and testing concluded that NAAC also provided a similar reduction in weight loss over traditional potassium based deicers.

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*SAE AIR5567-2009 test results are available upon request.