

# Frequently Asked Questions

Cryotech BX36® is an AMS 1435 certified bio-based liquid runway deicer with airport confirmed anti-icing performance similar to Cryotech E36®. BX36, made with corn derived DuPont Tate & Lyle Susterra® propanediol, combines sustainability with exceptional performance and reliable quality. The next generation deicer, BX36 significantly improves aircraft and airfield infrastructure by reducing catalytic oxidation of carbon brakes, corrosion of cadmium plated parts, and electrical conductivity in the airfield. BX36 can be handled, stored and applied like E36.

## Benefits

### What are the benefits to using BX36?

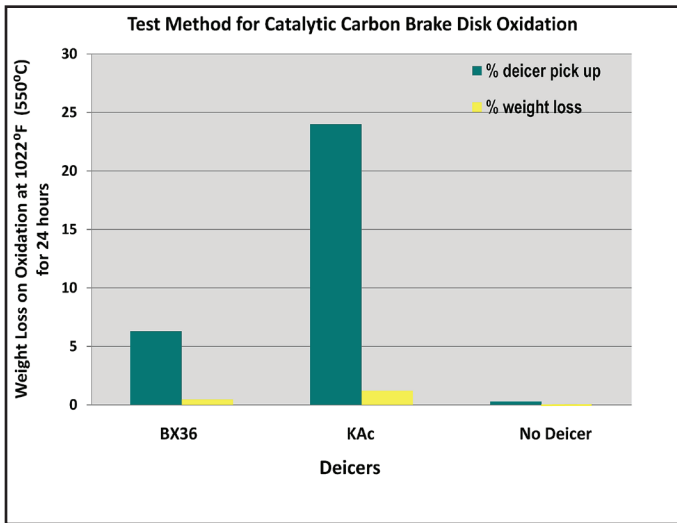
- Reduced catalytic oxidation of carbon brakes
- Reduced electrical conductivity
- Reduced cadmium corrosion
- Uses corn derived, DuPont Tate & Lyle Susterra® propanediol
- 75% bio-based content (ASTM D6866)

### What effect does BX36 have on carbon brakes?

Testing done on carbon brake material manufactured by Honeywell and Messier-Bugati shows brakes exposed to BX36 exhibit lower weight loss due to catalytic oxidation than those exposed to potassium acetate. Excessive weight loss can be a sign of oxidation/corrosion that can shorten brake life. These results are based on the testing protocol developed by the Society of Automotive Engineers (SAE) A-5 group.

### Do AMS specifications require deicers to be compatible with carbon brakes?

Yes, the SAE A-5 Aerospace Landing Gear Committee approved a new protocol in May 2009 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 has been accepted by the SAE Aerospace Council.



Source: AIR 5567 Test, April 2010

### Is BX36 compatible with airframe materials?

BX36 meets the AMS 1435 specification which encompasses compatibility testing with metals, plastics, rubber, and other materials.

### How does the conductivity of BX36 compare to other airport approved runway deicers?

BX36 is less conductive than potassium acetate deicers, which lessens concerns with airport lighting systems and aircraft electrical components.

#### CONDUCTIVITY

Temperature	68°F (20°C)	32°F (0°C)
BX36	36 mmhos/cm	24 mmhos/cm
E36	117 mmhos/cm	94 mmhos/cm

Source: Cryotech Internal Testing, August 2010

### What is a bio-based product?

Bio-based products (other than feed or food) are wholly or partly composed of renewable agricultural crops such as corn, wheat or sugar cane.

### What are the benefits of using a bio-based product like BX36?

BX36 is made with Susterra®, a high-performance material derived from a renewable farm resource, corn. This reduces the reliance on petroleum-based materials, requires less energy to manufacture, reduces greenhouse gas emissions, and supports airline, airport, and military sustainability goals.

### What are the environmental impacts of BX36?

BX36 has a low Biological Oxygen Demand (BOD), is non-persistent, readily biodegrades at low temperatures. BX36 also has a low toxicity to fish, mammals, and vegetation and is recognized as “relatively harmless” by the U.S. Fish and Wildlife scale. The bio-based component notably reduces energy use and greenhouse gas emissions over traditional propylene glycol. BX36 is a next generation deicer that is bio-based without sacrificing performance or quality. BX36 breaks down naturally in the environment to carbon dioxide, water, and potassium (a mineral this is necessary to plant life and found naturally in high concentrations in the soil).

## Frequently Asked Questions

### Storage, Handling, and Application

#### What is the transition procedure when switching from Cryotech E36® to BX36?

BX36 is compatible at any ratio with E36, however to achieve maximum benefits of BX36, Cryotech recommends that tanks be emptied. If that is not possible, drain tanks to less than 10% E36 before adding BX36.

#### Can BX36 be put in a tank with another deicing fluid?

Cryotech does not recommend mixing BX36 with competitor's fluids. Potassium acetate runway deicers produced by other suppliers can be based on different chemistries. Please contact Cryotech for customized transition guidance or see Technical Bulletin "Material Compatibility and Storage of Cryotech BX36 Liquid Runway Deicer" for further information.\*

#### How should BX36 be applied?

BX36 can be applied using the same application rates as E36 and in the same manner:

- Deicing:
  - 1 gallon/1000ft<sup>2</sup> (50 g/m<sup>2</sup>) near 32°F (0°C) on thin ice
  - 3 gallons/1000ft<sup>2</sup> (150 g/m<sup>2</sup>) below 10°F (-12°C) on 1 inch ice
- Anti-icing:
  - 0.5 gallons/1000ft<sup>2</sup> (25g/m<sup>2</sup>)

#### Can I use my existing equipment when applying and storing BX36?

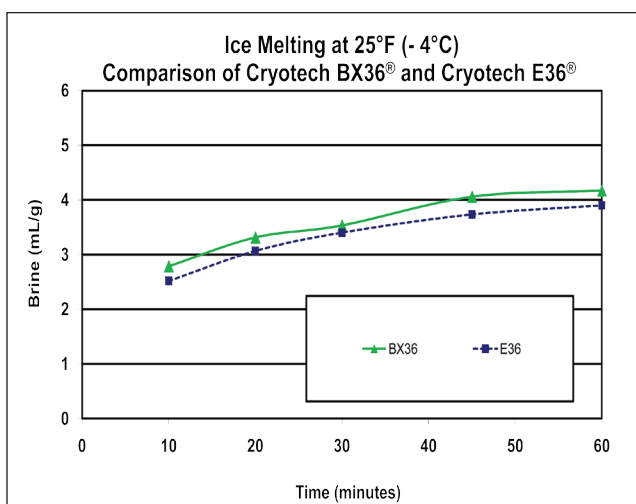
Yes, BX36 can be applied with the same equipment used to apply E36 or other acetate-based deicers. BX36 can be stored in the same equipment as E36. For more in depth details on suggested pumps, tanks, and other information, please refer to Technical Bulletin "Material Compatibility and Storage of Cryotech BX36 Liquid Runway Deicer."\*

\*Information can be found at [www.cryotech.com/technical\\_bulletins](http://www.cryotech.com/technical_bulletins)

### Performance

#### Does BX36 perform similar to E36?

Yes, BX36 performed as well as E36 in the SHRP testing for Ice Melting, Ice Penetration, and Ice Undercutting. This testing is performed at multiple temperature ranges. BX36 is effective at low temperatures (-20°F / -29°C). In addition, participants in the 2006-2007 winter trials noted that BX36 had equivalent performance to E36.



Source: Michigan Technology University, November 2006

#### Is BX36 available for purchase?

Yes, BX36 was successfully trialed in the 2006-2007 winter season at three separate international airports and is fully certified and available for purchase.

### FOR MORE INFORMATION CONTACT:

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