Arcton, Ltd.
Russia, 423570, Tatarstan, Nizhnekamsk, Himikov pr., 1 "B", 7
phone: +7 8555 303 174, fax: +7 8555 303 174, e-mail: contact@arcton.ru, http://arcton.ru

Arctica DG type I

Technical Data Sheet

Product Description

Arctica DG aircraft deicing/anti-icing fluid is RTU (ready-to-use) diethylene glycol-based type I colorless or orange fluid containing water, corrosion inhibitors and wetting agents. Arctica DG type I is formulated to be used neat (ready-to-use) and nominally contains 65% diethylene glycol, 35% water and less than 1% of the other ingredients. For the purpose of communications with flight crews, the concentration of neat Arctica DG type I fluid is 100. **Do not dilute Arctica DG type I fluid!**

Conformance to Industry Standards

Arctica DG type I fluid completely conforms to the technical requirements of SAE AMS 1424 “De-icing/Anti-Icing Fluid, Aircraft, SAE Type I” and ISO 11075:2007 “Aircraft – Deicing/anti-icing fluids – ISO Type I” in the neat (ready-to-use) form. Copies of the certificates of conformance are available on http://arcton.ru or upon request.

Application

Arctica DG type I fluid is generally used heated and undiluted for removal of deposits of frost, ice, and snow on exterior aircraft surfaces prior to take off.
Individual aircraft manufacturers provide specific anti-icing and deicing recommendations for various aircraft. Obtain and follow these specific recommendations. Understand industry aircraft deicing and anti-icing application standard practices, such as those of the Society of Automotive Engineers (SAE ARP4737). Also follow applicable government regulations, including those of Transport Canada, the U.S. Federal Aviation Administration and other federal, state, provincial, and local agencies.

Performance Properties

Water Spray Endurance Test (WSET)	3 min 13 s ± 13 s
High Humidity Endurance Test (HHET)	34 min 12 s ± 3 min 34 s
Aerodynamics (large transport type jet aircraft)	-30.5°C
Aerodynamics (low take off rotation speed commuter type aircraft)	-29°C

Lowest Operational Use Temperature

LOUT (large transport type jet aircraft)	-20.5°C
LOUT (low take off rotation speed commuter type aircraft)	-19°C

Materials Compatibility

Arctica DG type I fluid meets the materials compatibility requirements of industry standards SAE AMS 1424 “De-icing/Anti-Icing Fluid, Aircraft, SAE Type I” and ISO 11075:2007 “Aircraft – Deicing/anti-icing fluids – ISO Type I”.

Physical Properties

Flash Point	Not lower than 100°C (212°F)
Specific Gravity	1.094-1.102
pH	9-10
Refractive Index	1.409-1.416
Surface Tension	Less than 40 dynes/cm

Environmental Properties

Biochemical Oxygen Demand (BOD)	5 day at 5°C: < 0.01 kg O2/kg 5 day at 20°C: 0.002 kg O2/kg 28 day at 5°C: < 0.01 kg O2/kg 28 day at 20°C: 0.003 kg O2/kg
Chemical Oxygen Demand (COD)	0.99 kg O2/kg
Daphnia acute toxicity test	Daphnia magna, static system, 48 hour LC50: 9,750 mg/l
Fish acute toxicity test	Pimephales promelas, static system, 96 hour LC50: 5,500 mg/l

Collection and Disposal

Arctica DG type I fluid contains a high-quality grade of diethylene glycol. Appropriately contain, collect and dispose of runoff from deicing operations and divert to permitted outfalls or to a waste treatment system. Please note that laws and regulations governing disposal may change. It is the responsibility of the user to assure disposal is appropriate and in compliance with legal requirements.

Environmental Impact

In summary, Arctica DG type I fluid generally will not persist in the environment but can be harmful to aquatic life if discharged into a receiving waterway without further dilution. Collection and treatment, including glycol reclamation, of spent aircraft deicing and anti-icing fluids is recommended.

Shelf Life

Arctica DG type I fluid is formulated with components that should be stable for at least one year under unheated storage conditions. However, periodic testing of the fluid is prudent to ensure that the fluid is still acceptable for use.
Arctica DG type I fluid stored unheated for one year should be sampled and tested for conformance to specification for color, suspended matter, refraction and pH. Material not meeting the specification requirements should be sampled and sent to Arcton for further testing. These measurements should be repeated every year. Under heated storage conditions, Arctica DG type I fluid should be checked more often and regularly.

Product Safety

Please review our latest Material Safety Data Sheet for that product and ensure that the use you intend can be accomplished safely. For Material Safety Data Sheets and other product safety information, contact Arcton or your local distributor.

Precautions

Arctica DG type I fluid is recommended for application on aircraft exterior surfaces only. Do not use Arctica DG type I fluid to deice or anti-ice cockpit windows, helicopters (unless authorized by helicopter manufacturer), aircraft brake pads, runways, pavement, roadways, sidewalks, vehicles. Do not spray Arctica DG type I fluid directly into engines or auxiliary power units (APU). Do not use Arctica DG type I fluid as antifreeze for vehicles, ground support equipment, sanitary water facilities, aircraft or portable lavatories.
Do not spray Arctica DG type I fluid onto aircraft with vents open, pack valves open, baggage doors open, bystanders near or under plane.