

Technical Datasheet – Clearway 3 De-Icer

Product Description...

Clearway[®] 3 is an environmentally friendly deicer, based on a unique formulation of Potassium Acetate and corrosion inhibitors. Clearway[®] 3 is approved to the AMS 1435 standard, and to specifications developed by the BAA (UK) and Royal Airforce. Clearway can be used on runways, roads, platforms, walkways, and most surfaces which are open to freezing.

When applied with the mechanical facilities of airport maintenance departments, Clearway[®] 3 allows snow and ice to be removed quickly and economically. Clearway[®] 3 melts the ice by depressing the freezing point of water. Due to its low freezing point, the resultant solution will have a much lower freezing point.

Appearance	Clear to slight hazy liquid
Assay	50% min. active material
Density at 20°C	1,25 – 1,30 g/cm ³
Viscosity at 20°C	12-20 mPa.s max
Viscosity at -1 0°C	65-85 mPa.s max
Flash point (abel closed cup)	Non-flammable
Freezing point	Less than – 60°C
Miscibility with water	Complete
pH	10.5 – 11.5

Environmental and toxicology information...

Tests have been performed according to OECD guidelines by the Hygiene Institute des Ruhrgebiets in Germany and according to the AMS 1435A standard by Scientific Material International (SMI) in USA. Clearway[®] 3 is assigned as Class 1 (WGK), which means it is in general not water endangering.

BOD5		250 mg O ₂ /g
COD		320 mg O ₂ /g
Acute toxicity to Daphnia Magna	EC50 (48 h)	40.000 mg/l
Acute toxicity to Fish	LC50 (48 h)	8.700 mg/l
Acute toxicity to Bacteria	EC50 (16 h)	108.500 mg/l
Acute toxicity to Algae	EC50 (72 h)	15.000 mg/l
Acute oral toxicity	LD50 (rat)	> 2.000 mg/kg

Storage & Handling...

Clearway[®] 3 is delivered ready to use. It should not be diluted nor should it be concentrated further. Clearway[®] 3 is available in bulk tankers, 1000 l IBC's, 25 litres Clearway[®] 3 meets the requirements in AMS 1435 for storage stability and shows no sign of deterioration when stored for a longer period of time. Clearway[®] 3 is compatible with most known materials used at airports and railways etc, both related to equipment for storage and equipment for applying the product.

The table below lists materials that have been shown to be compatible with Clearway[®] 3

Metals	Polymers
Stainless Steel	Polyethylene Plastics
Carbon Steel	Glass fibr reinforced polyester (high pH resistant resin)
Aluminum alloys (bare & anodized)	Polymethacrylate
Magnesium alloys (wrought, dichromate)	Acrylic plastic
Treated and epoxy coated	Polychloroprene
Titanium	Silicone
Cadmium plated steel	Vulcanized butadiene-acrylonitrile
Copper (acid pickled)	Vulcanized butadiene-propylene
Bronze (copper/tin)	Painted surfaces, Bitumen

Technical Datasheet – Clearway 3 De-Icer

Material non-compatibility...

Clearway[®] 3 shows moderate corrosive effect on zinc, galvanized materials, solder and silver. We recommend painting or protecting these items, or replace them with items of compatible materials.

Application...

Clearway[®] 3 is used as both anti-icing and de-icing chemical. Suggested application rates can be found in the table below. It is however important to take into consideration factors like surface material, surface structure, application-method and current weather situation when using the product. The figure below is therefore only a guide for application and must not be regarded as recommended dosage. Chela will upon request give advice on application for the respective area.

In case of thick ice-layers (> 3 mm) it is recommended to use Clearway[®] 3 in combination with the solid product Clearway[®] 6S.

In the case of de-icing, the surface should be treated mechanically before applying Clearway[®] 3. This will reduce the amount of liquid used, resulting in minimal environmental impact and lower cost of the de-icing operation.

In the event of freezing rain, a preventive treatment of runways, roads, ramps and taxiways is highly recommended. Applying Clearway[®] 3 before the start of a light snow or ice event prevents frozen precipitation from accumulating. Since Clearway[®] 3 is both an anti-icing agent as well as a deicer, timely application of Clearway[®] 3 is essential to the continued use of operative surfaces.

Careful monitoring of meteorological conditions will keep you ahead of storm events, and guide you in preventive application of the product.

Clearway[®] 3 can be used with all known existing spraying equipment.

Suggested Application Rates...

Temperature (°C)	Dry Conditions Ice thickness <1mm Light frost		Wet conditions Ice thickness <1mm Heavy frost		Wet conditions - Snow - Packed snow		Wet conditions - Freezing rain - Ice Thickness 1-3 mm	
	Anti-icing	De-icing	Anti-icing	De-icing	Anti-icing	De-icing	Anti-icing	De-icing
0 to - 5	12ml/m ²	16 ml/m ²	16 ml/m ²	24 ml/m ²	24 ml/m ²	32 ml/m ²	24 ml/m ²	32 ml/m ²
-5 to - 10	16 ml/m ²	24 ml/m ²	24 ml/m ²	34 ml/m ²	32 ml/m ²	40 ml/m ²	32 ml/m ²	40 ml/m ²
-10 to - 15	20 ml/m ²	28 ml/m ²	32 ml/m ²	40 ml/m ²	40 ml/m ²	48 ml/m ²	40 ml/m ²	48 ml/m ²