Akem
Kimya San. ve Tic. Ltd. Şti.

CATALOGUE 2026

AIRPORT RUNWAY AND APRON DE-ICER

POLIDE ICE®

Potassium acetate based, chloride-free liquid runway de-icer and anti-icer. Manufactured to the AMS 1435 specification.



< −50 °C
FREEZING POINT

AMS 1435
AVIATION SPECIFICATION

Chloride-free
AIRCRAFT-METAL FRIENDLY

50% KAc
POTASSIUM ACETATE

AKEM KIMYA

Specialised chemical solutions for winter conditions

Akem Kimya San. ve Tic. Ltd. Şti. manufactures snow and ice control chemicals for municipalities, road and tunnel operators, airports, the defence industry and industrial sites. From our facility in Istanbul we supply customers throughout Türkiye and abroad in drums, IBC tanks and bulk tankers.

Every surface has different needs in winter operations: roads and pavements require fast action at low cost, airport runways need chloride-free, material-friendly formulations, and aircraft surfaces demand full compliance with international aviation specifications. The Akem Kimya winter product family was developed separately for each of these three needs.

Winter product family

PLAS ICE®

Roads and sites
Magnesium or calcium chloride based liquid de-icer and anti-icer. Effective down to −40 °C.

POLIDE ICE®

Runways and aprons
Potassium acetate based, chloride-free runway de-icer. AMS 1435; freezing point below −50 °C.

PLAS P AIRCRAFT®

Aircraft surfaces
Monopropylene glycol based Type I and Type II de-/anti-icing fluids. AMS 1424 / 1428.

3
dedicated formulations for three fields of use

Production
own production and stocked Istanbul warehouse

Drum
IBC tank and bulk tanker delivery

Support
dosage planning and tender support

Why Akem Kimya?

- Pre-season stock and delivery planning
- Fast delivery for urgent winter demands
- Documentation and references for public tenders
- Packaging to suit your needs: drum, IBC, bulk
- Application equipment and dosage advice
- Long-standing references in public, aviation and industry

ABOUT THE PRODUCT

Chloride-free de-icer for runway safety

POLIDE ICE® is a liquid de-icer containing 50% potassium acetate, developed to melt ice and snow and to prevent re-freezing on airport runways, taxiways and aprons.

It acts as a freezing point depressant. The corrosion inhibitors in the formulation ensure that materials used in aircraft construction are not affected. Used together with the airport maintenance team's mechanical equipment and modern spraying techniques, it removes snow and ice quickly and economically and provides long-lasting protection against re-freezing.

A runway de-icer carries a different responsibility from a road de-icer: on a road, delayed action slows traffic; on a runway it directly affects take-off and braking distance. Aviation de-icers must therefore not only melt ice but also be compatible with aluminium and composite airframe materials, carbon brakes, runway lighting fixtures and ILS equipment.

In this catalogue

04 Why potassium acetate?
05 Key features
06 Technical properties
07 De-icing and anti-icing
08 Application rates
09 Runway safety and compatibility
10 Areas of use and equipment
11 Packaging and storage
12 Environment and safe handling
13 References



< −50 °C	1.27	10 cP	≥ 2 yrs
FREEZING POINT	G/CM³ (20 °C)	VISCOSITY	SHELF LIFE

CHEMISTRY

Why potassium acetate?

Chloride-based de-icers are not used on airport runways: chloride ions initiate pitting corrosion in aircraft aluminium and accelerate oxidation in carbon brake systems. Alternatives to chloride have historically fallen into three groups.

Urea

Weak at low temperatures

Loses effectiveness rapidly below approx. −4 °C. It breaks down into ammonia and creates a high nitrogen load in runoff; its use at airports is restricted in many countries.

Glycols

Slipperiness on runways

Used in de-icing fluids for airframes (PLAS P AIRCRAFT®), but not preferred on runway surfaces because it lowers the friction coefficient.

Potassium acetate

The aviation standard

Works at very low temperatures, contains no chloride, maintains friction at the recommended dosage and has a low environmental load. POLIDE ICE® is based on this chemistry.

Advantages of potassium acetate

Low-temperature performance

The freezing point of POLIDE ICE® is below −50 °C; it does not freeze under airport conditions in Türkiye.

Chloride-free

No chloride-related corrosion risk for aircraft aluminium and carbon brake systems.

Maintains friction

Does not make the runway slippery when applied at the correct dosage.

Low environmental load

Readily biodegradable with low BOD and COD values. Free of triazole and nitrite.

ADVANTAGES

Key features

POLIDE ICE® combines runway safety with protection of aircraft materials in a single product.

AMS 1435 compliant

Manufactured to the aviation specification for liquid runway de-icers.

Below −50 °C

Freezing point around −55 °C; remains liquid even in the coldest conditions.

Fast action

Starts working as soon as it contacts the surface thanks to its liquid form.

Low corrosion

Chloride-free and inhibited so as not to harm aircraft metals or runway fixtures.

Fixture friendly

Clear and colourless; no discolouration or film build-up on inset runway light lenses.

Easy handling

Clear, low-viscosity liquid; no shaking needed and sprayed with existing nozzles.

Multi-purpose

Used for de-icing, anti-icing and pre-wetting of solid de-icers.

Environmentally considerate

Readily biodegradable; contains no urea, glycol, nitrite or triazole.

< −50 °C	AMS 1435	0	> 90%
FREEZING POINT	SPECIFICATION	CHLORIDE · UREA · GLYCOL	BIODEGRADABILITY

TECHNICAL DATA

Technical properties

Property	Value
Standard	AMS 1435
Active substance	50% potassium acetate
Colour and appearance	Colourless, clear liquid
Odour	Characteristic
Freezing point	< −50 °C (−55 °C) (DIN ISO 3016)
Boiling point	116 °C
Flash point	None
Ignition temperature	> 550 °C (DIN 51794)
Density (20 °C)	1.27 g/cm³ (DIN 51757)
pH (20 °C)	9.76 (DIN 19268)
Viscosity (20 °C)	10 cP
Solubility in water	Completely soluble (20 °C)
Solid residue	< 0.01%
Free of	Chloride, urea, glycol, nitrite, triazole
Shelf life	At least 2 years (original packaging)

Alkali-buffered

Its pH eliminates acidic corrosion risk; no acidic attack on concrete runway surfaces.

Non-flammable

No flash point; not subject to flammable liquid storage regulations.

Low viscosity

With a viscosity of 10 cP it is easily sprayed with existing de-icing vehicle nozzles.

Technical data describe the product and do not form part of the delivery specification. Refer to the current TDS and SDS.



APPLICATION

De-icing and anti-icing: two ways to keep the runway open

DE-ICING

Melting ice

Melting with POLIDE ICE® after ice, snow or frost has formed on the runway surface. Where thick ice or snow has formed on aprons, POLIDE ICE® should preferably be used together with a solid de-icer.

ANTI-ICING

Preventing ice

Applied before ice forms when freezing rain, sleet or frost is expected. On a pre-treated runway, snow clearing is completed in a single pass.

Anti-icing shortens runway closure times.

A frost layer formed below −10 °C may require up to 60 g/m², whereas anti-icing in the same conditions works with 20–30 g/m². Preventive treatment halves chemical consumption and keeps operations running.

20–30
g/m² anti-icing rate

10–60
g/m² de-icing range (by condition)

½
chemical consumption with preventive treatment

DOSAGE

Application rates

Select the application rate from the tables below according to the runway surface condition and temperature. Do not exceed the recommended values.

De-icing

Runway condition	0 / −5 °C	−5 / −10 °C	below −10 °C
Ice, compacted snow	10 – 20 g/m²	20 – 30 g/m²	30 – 40 g/m²
Snow, snowfall	25 – 35 g/m²	35 – 45 g/m²	45 – 55 g/m²
Ice, freezing rain	30 – 40 g/m²	40 – 50 g/m²	50 – 60 g/m²

Anti-icing

Weather	Application rate
Freezing rain, sleet or frost expected	**20 – 30 g/m²**

Tank calculation: With a density of 1.27 g/cm³, 1 litre of product weighs about 1.27 kg. Set the required amount per m² on the spray vehicle taking the density into account.

Example coverage

Package	Anti-icing (20–30 g/m²)	De-icing (30–60 g/m²)
60 kg drum	approx. 2,000 – 3,000 m²	approx. 1,000 – 2,000 m²
1,000 kg IBC tank	approx. 33,300 – 50,000 m²	approx. 16,700 – 33,300 m²
1,250 kg IBC tank	approx. 41,700 – 62,500 m²	approx. 20,800 – 41,700 m²

Example: a runway 45 m wide and 3,000 m long is approx. 135,000 m²; anti-icing requires approx. 2.7–4.1 t of product. Calculated approximate values.

SAFETY

Runway safety and material compatibility

The success of a runway de-icer is measured not only by melting ice but also by doing no harm to the aircraft or runway infrastructure.

Friction coefficient

The runway friction coefficient directly determines braking distance. Applied at the recommended rates, POLIDE ICE® maintains the friction properties of the runway surface; best results are achieved with the rates in the table.

Aircraft metals

Chloride-free; no chloride-related pitting risk on aluminium panels, landing gear components or cadmium-plated fasteners.

Carbon brakes

Carbon brake discs on modern airliners are sensitive to catalytic oxidation at high temperatures. POLIDE ICE® is alkali-buffered and free of triazole and nitrite; the formulation takes carbon brake compatibility into account.

Runway lighting

The product is clear and colourless; no discolouration or film build-up on inset light lenses.

Concrete and asphalt

Its alkali-buffered nature prevents acidic attack on concrete runway surfaces.

Galvanised and zinc

Do not store in, or transfer through, tanks, pipes or pumps with galvanised, zinc or brass components.

FIELDS OF USE

Areas of use and equipment

- Commercial airport runways
- Taxiways
- Aprons and aircraft stands
- Military air bases and main jet bases
- Heliports and hospital helipads
- Airside service roads and refuelling areas
- Aviation schools and training airfields
- Bridges and sensitive metal structures

Application equipment

POLIDE ICE® is applied with the airport's existing spray vehicles; no separate equipment investment is needed. Typically vehicle-mounted liquid sprayers with nozzle booms, tanker spray vehicles or hand-held liquid sprayers are used.

Boom sprayers

Even and fast application on wide runway and taxiway surfaces.

Tanker spray vehicles

Flexible application on aprons, stands and service roads.

Hand-held equipment

Spot treatment of helipads, stairs and confined areas.

Pre-wetting: POLIDE ICE® is also used to pre-wet solid de-icers; wetted granules adhere better, scatter losses fall and action starts faster.

Right choice: Use POLIDE ICE® for runways and taxiways in contact with aircraft; PLAS ICE® for apron surroundings, service roads and walkways; and PLAS P AIRCRAFT® for the airframe.



Application on the apron with a boom sprayer

SUPPLY

Packaging and storage



POLIDE ICE® 1,000 kg IBC tank

POLIDE ICE® is supplied in 60 kg drums, 1,000 kg IBC tanks and 1,250 kg IBC tanks.

60	1,000	1,250
kg drum	kg IBC tank	kg IBC tank

Storage

- Store in the original, tightly closed packaging.
- Do not store near acids.
- Do not store in tanks, pipes or pumps with galvanised, zinc or brass parts.
- With a freezing point below −50 °C there is no risk of freezing outdoors; protect from direct sunlight.
- Shelf life is at least 2 years in the original packaging.

Pre-season stock planning

As the product does not freeze and has a long shelf life, airport stocks can be built up in summer. Our technical team calculates requirements based on runway area, average seasonal treatments and vehicle capacity.

Pre-order checklist

- Determine runway, taxiway and apron areas (m^2).
- Estimate average treatments per season.
- Choose packaging to suit vehicle tank capacity.
- Confirm storage tanks and lines contain no galvanised/zinc parts.

RESPONSIBILITY

Environment and safe handling

Ecological information

Parameter	Value
Biodegradability	> 90%
Fish toxicity	LC50 > 1,000 mg/L (96 h, zebra fish)
Bacterial toxicity	EC0 > 12.5 g/L
Chemical oxygen demand (COD)	330 mg/g
Biochemical oxygen demand (BOD_5)	300 mg/g
Free of	Chloride, urea, glycol, nitrite, triazole

Ecological values are taken from the product's previous safety data. Can be eliminated appropriately in treatment plants.

Safe handling summary

Environmentally considerate

Readily biodegradable; free of chloride, urea, glycol, nitrite and triazole.

Personal protection

Avoid eye and skin contact; do not breathe aerosols during spraying. Glasses and gloves recommended.

First aid

Rinse eyes or skin with plenty of water; if swallowed, seek medical advice.

> This summary is for information only. Read the current Safety Data Sheet (SDS) before use; SDS and TDS are available in Turkish and English on request.

Airport runoff management

- Follow recommended rates to avoid unnecessary chemical load.
- Reduce total consumption with anti-icing planning.
- Collect spills with absorbent material; do not discharge to drains.
- Dispose of empty packaging in accordance with regulations.

REFERENCES

Our airport references

POLIDE ICE® is used at DHMİ airports throughout Türkiye, at TAV airports abroad and at Turkish Air Force main jet bases.

CIVIL AIRPORTS

- TAV Macedonia – Skopje and Ohrid Airports
- TAV Georgia – Tbilisi and Batumi Airports
- DHMİ – airports throughout Türkiye
- DHMİ Adıyaman
- Anadolu University – Eskişehir Hasan Polatkan Airport

MILITARY AVIATION AND DEFENCE

- Turkish Air Force – Main Jet Base Commands
- 8th Main Jet Base – Diyarbakır
- 11th Air Transport Main Base
- TUSAŞ – Türk Havacılık ve Uzay Sanayii A.Ş.

EDUCATION AND PUBLIC SECTOR

- Anadolu University Faculty of Aeronautics and Astronautics
- Beylikdüzü Municipality
- Eskişehir Municipality
- Şişli Municipality

TAV
Skopje, Ohrid, Tbilisi and Batumi

DHMİ
Airports throughout Türkiye

THK
Main jet base commands

Tender file support

POLIDE ICE® has been used over several winter seasons at some of the airports listed. Reference letters and product conformity documents for tender files are available on request.

Why POLIDE ICE®?

AMS 1435
Manufactured to aviation spec

Chloride-free
Compatible with aircraft metals and brakes

< −50 °C
Stays liquid in the coldest conditions

Fast supply
Shipped from Istanbul warehouse

Akem
Kimya San. ve Tic. Ltd. Şti.

We stand by you in your winter operations.

Contact our technical team for product selection, dosage planning, tender specifications and delivery. Safety Data Sheets (SDS), Technical Data Sheets (TDS) and test reports are available on request.

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Road and site de-/anti-icer

POLIDE ICE®
Runway and apron de-icer

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Aircraft de-/anti-icing fluid