Akem
Kimya San. ve Tic. Ltd. Şti.

CATALOGUE 2026

ANTI-ICING · DE-ICING

PLAS ICE®

Liquid snow and ice melter and anti-icing solution for roads, bridges, tunnels, sites and pedestrian areas.



−40 °C
EFFECTIVE DOWN TO

2 in 1
ANTI-ICER + DE-ICER

≥ 48 h
RESIDUAL ACTION

Liquid
SPRAYED UNDILUTED

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

Anti-icer and de-icer in a single product

PLAS ICE® is a ready-to-use liquid de-icing and anti-icing solution developed to combat snow and ice on roads, pavements, ramps, car parks, bridges and open areas during the winter months.

Based on magnesium chloride or calcium chloride, the product forms a thin film on the surface when applied before snowfall, preventing snow and ice from bonding to the pavement. When applied after precipitation, it penetrates the existing ice layer, separates it from the surface and melts it rapidly.

Thanks to its liquid form it is sprayed directly without dilution; it spreads evenly over the surface and is not blown away by wind or traffic. Being clear, it leaves no marks or stains on asphalt, concrete, marble or paving stones at the recommended dosages.

> **Planned winter operations:** Anti-icing carried out after a weather warning and before precipitation achieves the same result as de-icing after ice has formed with two to three times less product.

In this catalogue

04 Key features
05 How does it work?
06 Anti-icing and de-icing
07 Application rates
08 Application methods
09 Areas of use
10 Technical properties
11 Packaging and logistics
12 Storage and safe handling
13 References
14 Tests and documents



−40 °C	100–150	≥ 48 h	3
EFFECTIVE DOWN TO	G/M² ANTI-ICING RATE	RESIDUAL ACTION	PACKAGING OPTIONS

ADVANTAGES

Key features

PLAS ICE® delivers reliable results with the same product at every stage of winter operations — before, during and after precipitation.

Effective to −40 °C

Melts ice even at very low temperatures and delays re-freezing by keeping the solution liquid.

Instant action

Its heat-releasing dissolution starts working as soon as it touches the surface.

Protective film

The thin film left on the surface prevents snow and ice from bonding to asphalt or concrete.

Ready to use

Sprayed directly without dilution; no preparation or mixing needed.

Even distribution

The liquid spreads evenly and is not blown away by wind or traffic.

No stains

Its clear formulation leaves no stains on asphalt, concrete, marble or paving stones.

Long-lasting

Remains active on the surface for at least 48 hours depending on weather and traffic.

Non-flammable

Has no flash point; not subject to flammable liquid storage rules and can be stored safely.

−40 °C	≈ 1.25	7 – 9	2 yrs
EFFECTIVE	G/CM³	PH	SHELF LIFE

WORKING PRINCIPLE

How does PLAS ICE® work?

The basic task of a de-icer is to lower the freezing point of water below the ambient temperature. PLAS ICE® achieves this by combining three mechanisms.

01

Freezing point depression

Water freezes at 0 °C; dissolved chloride ions lower the freezing point. Magnesium and calcium chloride create a high ion concentration and lower the freezing point down to −40 °C.

02

Heat-releasing dissolution

Calcium and magnesium chloride release heat on contact with water (exothermic dissolution). PLAS ICE® starts melting ice with its own heat, so the effect begins within minutes even at low temperatures.

03

Anti-bonding film

The thin film remaining on the surface prevents ice from mechanically bonding to asphalt or concrete. The plough blade clears the surface in a single pass; no second or third pass is needed.

What happens on the surface?

1 · Application

The product is sprayed evenly in fine droplets onto the dry or wet surface.

›

2 · Film / melting

Before precipitation a film forms; where ice exists, the product penetrates and detaches it.

›

3 · Clear surface

Snow and ice cannot bond; ploughing becomes easier and re-freezing is prevented.

Efficient use: The best results are achieved by applying the product evenly at the recommended rates, maximising both effectiveness and economy. See page 7 for recommended rates.

Ice melting speed

At −15 °C a 1 cm thick ice layer melts in approximately 30 minutes.

Duration of action

Remains effective on the surface for at least 48 hours depending on weather and traffic; repeat as required.



APPLICATION STRATEGY

Anti-icing and de-icing: the right treatment at the right time

ANTI-ICING

Preventive treatment

Applied to the dry surface before precipitation begins. The sprayed PLAS ICE® leaves a thin film; snow and ice fall onto this film and cannot bond to the surface. A thick, hard ice layer never forms and mechanical clearing is completed in one pass.

When: 2–6 hours before precipitation
Rate: 100 – 150 g/m²

DE-ICING

Curative treatment

Applied after snow or ice has formed on the surface. The product penetrates the ice layer, detaches it from the surface and melts it. Where snow has accumulated heavily, plough first and then apply the product.

When: After snow/ice has formed
Rate: 150 – 350 g/m²

The rule is simple: when the warning comes, treat before it snows.

Anti-icing works with 100–150 g/m²; de-icing after ice has formed requires 150–350 g/m², i.e. two to three times as much product — plus extra plough passes, fuel and staff hours. A winter plan that follows weather warnings reduces seasonal consumption significantly.

Sample winter operations plan

1
Warning
Follow snow / frost warnings; identify critical spots.

2
Prevention
Apply 100–150 g/m² anti-icing 2–6 h before precipitation.

3
Ploughing
Plough heavy snowfall; ice does not bond to the surface.

4
Follow-up
Treat remaining icy areas with 150–350 g/m² de-icing.

DOSAGE

Application rates

PLAS ICE® is applied undiluted, in concentrated form, so that the surface is covered evenly. The rate is selected according to the type of treatment, temperature and ice thickness.

Treatment	When?	Rate
Anti-icing	After a weather warning, 2–6 hours before precipitation	**100 – 150 g/m²**
De-icing	After snow or ice has formed on the surface	**150 – 350 g/m²**

> Use the upper end of the range at very low temperatures and with thick ice. Below −20 °C and for ice thicker than 3 cm, 350 g/m² is recommended.

Coverage per package

Package	Anti-icing (100–150 g/m²)	De-icing (150–350 g/m²)
35 kg drum	approx. 233 – 350 m²	approx. 100 – 233 m²
1,250 kg IBC tank	approx. 8,300 – 12,500 m²	approx. 3,570 – 8,330 m²
10 t bulk	approx. 66,700 – 100,000 m²	approx. 28,600 – 66,700 m²

Calculated approximate values; actual consumption varies with weather, surface type and traffic.

Practical examples

Building entrance · 50 m²

Approx. 5–7.5 kg for anti-icing; applied in minutes with a backpack sprayer.

Car park · 2,000 m²

Approx. 200–300 kg for anti-icing; one run with an IBC tank and vehicle-mounted sprayer.

Road · 1 km, 7 m

7,000 m²: anti-icing approx. 0.7–1.05 t; de-icing approx. 1.05–2.45 t.

APPLICATION

Application methods and equipment

A

35 kg drum · backpack / hand sprayer

For small areas such as stairs, ramps, entrances, pavements and estate roads.

1. Put on safety glasses and gloves.
2. Transfer the product undiluted into the sprayer tank.
3. Set the sprayer to a fine (atomised) spray.
4. Apply at least 100 g per m^2 evenly (approx. 1–1.5 kg per 10 m^2).
5. Rinse the sprayer with clean water afterwards.

B

1,250 kg IBC tank · vehicle-mounted kit

For estate roads, car parks, factory and logistics yards.

1. Secure the IBC tank on the truck bed close to the tailgate.
2. Mount the approx. 1.5 m perforated spray bar at the rear and connect it to the tank valve with a hose.
3. Open the valve halfway once moving; drive at a steady, low speed.
4. Close the valve when the vehicle stops.

C

Bulk tanker · vehicle-mounted systems

For highways, bridges, viaducts and tunnel portals. The product is delivered by tanker into your storage tank or spray vehicle and applied along the lane with a vehicle-mounted system. Give priority to bridges, viaducts and tunnel portals, which freeze first.

Fixed systems

Nozzle lines and sprinklers

At recurring critical points such as bridge decks, tunnel portals and ramps, fixed nozzle lines allow automatic or manual application.

Equipment materials: Parts in contact with the product must be resistant to chloride solutions (stainless steel, polyethylene, polypropylene). Rinse equipment with clean water after each use.

Equipment selection by area

Area	Recommended equipment	Recommended packaging
Entrances, stairs, ramps (< 500 m^2)	Backpack or hand sprayer	35 kg drum
Car parks, estate and factory roads	IBC tank + vehicle-mounted spray bar	1,250 kg IBC tank
Main municipal arteries, highways	Vehicle-mounted spray tank	Bulk tanker
Bridges, viaducts, tunnel portals	Fixed nozzle line / vehicle system	Bulk tanker or IBC

SECTORS

Areas of use

PLAS ICE® suits every organisation fighting snow and ice — from municipalities and highway operators to industrial sites and public buildings.

Municipal roads and squares

Leaves no residue, so it is preferred for shopping streets, pavements and historic areas.

Highways, bridges, viaducts

Bridge decks cool from below and freeze first; anti-icing is the most practical measure against sudden icing.

Tunnel portals

Sudden temperature changes at portals accelerate icing; protected with fixed and vehicle-mounted systems.

Airport service roads

For apron surroundings, service roads and staff walkways. POLIDE ICE® is used for runway surfaces.

Factories and production yards

Forklift and truck manoeuvring areas are kept open with anti-icing before shifts begin.

Logistics and distribution

Sloped loading ramps and truck waiting areas are the most exposed to icing.

Car parks and ramps

At covered car park ramps, warm air condenses and freezes at the ramp entrance.

Hospitals, malls, public buildings

Icing at entrances, stairs and walkways is a direct matter of institutional liability.

Also suitable for rail, metro and tram platforms, school and university campuses, filling stations and residential estate roads.

TECHNICAL DATA

Technical properties

Property	Value
Product type	De-icing and anti-icing solution
Active substance	Magnesium chloride or calcium chloride based
Appearance	Clear liquid
Density (20 °C)	≈ 1.25 g/cm³
pH (20 °C)	7.0 – 9.0
Effective temperature	down to −40 °C
Flash point	None (non-flammable)
Solubility in water	Completely soluble
Corrosion (carbon steel)	< 0.05 mg/cm²/day (ASTM F 483)
Corrosion (aluminium)	< 0.02 mg/cm²/day (ASTM F 483)
Marshall stability loss	< 5%
Ice melting (−15 °C)	1 cm ice melts in ≈ 30 min
Residual action	At least 48 hours
Shelf life	2 years from production

Surface compatibility

Asphalt and concrete

pH 7–9 (neutral / slightly alkaline); no acidic attack. Marshall stability loss below 5%.

Natural stone and pavers

No marks or stains on marble, granite or pavers at recommended rates; fully water-soluble.

Metal surfaces

Low corrosion values according to ASTM F 483. Equipment wetted parts must be chloride-resistant.

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

SUPPLY

Packaging and logistics

PLAS ICE® is available in three packaging options to suit your scale of use. Our technical team supports you with requirement calculations for pre-season stock planning.



35 kg drum

For entrances, stairs and small areas; applied with a backpack sprayer.



1,250 kg IBC tank

For car parks, factories and estate roads; applied directly with a vehicle-mounted kit.



Bulk tanker

For municipalities, highway and tunnel operators; delivered into your storage tank.

Pre-season planning

The product does not freeze and has a 2-year shelf life; product left at the end of the season can be used the following season, so stocks can be built up during summer.

Delivery throughout Türkiye

Drums and IBC tanks are shipped palletised from our Istanbul İkitelli warehouse; bulk product is delivered by tanker.

Pre-order checklist

- Determine the total area (m^2) and critical points.
- Estimate the average number of treatments per season.
- Check your existing equipment and tank capacity.
- Plan the storage area (indoor / outdoor).
- Confirm tanker or truck access to the delivery site.
- Ask our technical team for a requirement calculation.

SAFETY

Storage and safe handling

Storage

- Store in the original, tightly closed packaging.
- Keep in a cool, dry place away from direct sunlight.
- The product does not freeze; IBC tanks may be kept outdoors.
- Shelf life is 2 years from production.
- Dispose of empty packaging in accordance with regulations.

Equipment

- Wetted parts must be stainless steel, polyethylene or polypropylene.
- Rinse equipment with clean water after each use.
- Do not dilute with water or mix with other products.

Safe handling summary

Environmentally considerate

Fully water-soluble and non-flammable; leaves no marks or residue at recommended rates.

Personal protection

Wear safety glasses and gloves during application; avoid breathing spray mist.

First aid

In case of contact with eyes or skin, rinse with plenty of water; see the SDS for details.

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



Vehicle-mounted spraying on a highway

REFERENCES

Trusted in Türkiye's winter operations

PLAS ICE® has a broad user base in the public and private sectors; many of the organisations listed have used the product over several winter seasons.

PUBLIC AND CENTRAL ADMINISTRATION

T.C. Cumhurbaşkanlığı / Beştepe · T.C. Başbakanlık / Çankaya · T.C. Dışişleri Bakanlığı / Ankara · T.C. Avrupa Birliği Genel Sekreterliği · Turkish Naval Forces Command – Ankara · Ankara Kara Harp Komutanlığı · TÜBİTAK UME · Muş Police Department Logistics

HIGHWAYS AND TUNNELS

Highways 1st Regional Directorate · Highways 4th Region – Bolu Tunnel · Highways 12th Region – Erzurum · Highways 14th Region – Bursa · Highways 17th Region – Istanbul · Araklı Salmankaş Tunnel

METROPOLITAN MUNICIPALITIES

İstanbul · Ankara · Bursa · Kayseri · Kocaeli · Gaziantep · Konya · Manisa · Denizli

PROVINCIAL AND DISTRICT MUNICIPALITIES

Afyon · Bahçelievler · Bahçeşehir · Balıkesir · Bartın · Başakşehir · Batman · Bayrampaşa · Beşiktaş · Bilecik · Biga · Bolu · Bozüyük · Bursa Yıldırım · Çan · Çerkezköy · Çorlu · Denizli Acıpayam · Düzce · Edirne · Erbaa · Esenler · Esenyurt · Eskişehir · Gaziosmanpaşa · Gerede · Gönen · Hakkari · Hasköy · Isparta · İpsala · Kapaklı · Kars · Karaköprü · Kastamonu · Keşan · Kırşehir · Küçükçekmece · Muğla · Rize · Sarıyer · Sivas · Şişli · Tekirdağ · Tosya · Tuzla · Uşak · Van · Van Edremit ve Başkale · Yozgat · Van Water and Sewerage Administration · Çanakkale Special Provincial Administration · Eskişehir Parks and Gardens Dept.

AVIATION, DEFENCE AND TRANSPORT

TUSAŞ – Türk Havacılık ve Uzay Sanayii A.Ş. · Anadolu University School of Civil Aviation · THY DO & CO · Sabiha Gökçen Airport · TAV Makedonya · TAV Gürcistan · Bursa Burulaş · Eskişehir Ulaşım A.Ş.

INDUSTRY, EDUCATION AND REAL ESTATE

Rönesans Holding · TAV İnşaat · Limak İnşaat · Yüksel İnşaat · Ağaoğlu · Sinpaş GYO · Torunlar GYO · Varyap Meridian · Dumankaya · Sur Yapı · Kuzu Grup · Maya Residence · BOTAŞ International · Türkiye Şeker – Erciş Plant · Türk Henkel · Türk DemirDöküm · Tuzla Organised Industrial Zone (TOSB) · ISS Facility Services – Border Gates · Koç University · Atatürk University – Erzurum

QUALITY

Tests and documents

PLAS ICE® has been tested at universities and accredited laboratories. Organisations preparing technical specifications may request copies of these documents.

Test / Institution	Scope
ASTM D 1177	Standard test method for freezing point; verifies the declared low-temperature performance.
ASTM E 70	pH measurement with glass electrode; key indicator of concrete and metal compatibility.
SHRP H-205.2	Ice melting capacity test; measures the amount of ice melted at a given temperature and time.
ASTM F 483	Total immersion corrosion test; measures corrosion rate on carbon steel and aluminium.
Yıldız Technical University	Faculty of Arts and Sciences, Department of Chemistry analysis report (Report No. 296).
Ministry laboratory	Freezing point determined as −40 °C in the laboratories of the Ministry of Agriculture and Rural Affairs.

Documents available on request

GBF / SDS
16 sections, TR and EN

TDS
Technical data sheet

Test reports
Laboratory analyses

Instructions
Instructions for use

Tender and specification support

Our technical team can support you with product conformity documents, reference letters and technical specification clauses for public tenders. PLAS ICE® is a registered trademark.

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.

HEAD OFFICE

Halil Rıfat Paşa Mah. Perpa Tic. Mrkz.
B Blok Kat:13 No:2442
Şişli / İstanbul · Türkiye

WAREHOUSE

İkitelli OSB Atatürk Oto Sanayi Sitesi
5. Sokak No:118
Başakşehir / İstanbul · Türkiye

PHONE

+90 212 222 37 52

E-MAIL · WEB

info@akemkimya.com.tr
www.akemkimya.com.tr

PLAS ICE®
Road and site de-/anti-icer

POLIDE ICE®
Runway and apron de-icer

PLAS P AIRCRAFT®
Aircraft de-/anti-icing fluid