

# **ICE & DUST-AWAY®**

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Alumichem A/S has since its foundation in 1991 been developing and producing high quality functional aluminates for use in water purification processes, concrete industry, paper pulp industry as well as a long range of various production processes.

Since 2001 Alumichem A/S has been manufacturing the eco-labelled CMA based de-icer and dust-suppressor ICE & DUST-AWAY.

In 2005 Alumichem A/S commissioned a state-of-the-art PAC (Poly Aluminum Chloride) production line.

Alumichem A/S is certified according to ISO 9001 and ISO 14001.

Since 2017 Alumichem A/S has been a part of Norlex Group, [www.norlex.com](http://www.norlex.com).

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ICE & DUST-AWAY is a NORDIC ECOLABEL product with double use, based on Calcium Magnesium Acetate and Potassium Formate, designed for reliable high-performance winter maintenance and reduction of Particulate Air Pollution (PM)

## THE NUMEROUS ADVANTAGES OF ICE & DUST-AWAY



- Eco Label (SWAN)
- Reliable and efficient
- Very low freezing points up to -31,5 °C
- Excellent de-icing properties
- More efficient than road salt
- Prevents slippery roads in up to 60 hours
- Easily biodegradable
- Non-hazardous to ground water
- Non-corrosive to any surfaces or any metals
- Non-aggressive towards plants and trees
- Non-toxic for animals and pets
- Can be applied preventive and on a maintenance level
- Comes in a “ready to use” liquid form, therefore does not blow away, as de-icers in dry form
- Reduces Particulate Air Pollution (PM) - up to 35% reduction in the daily PM10 average

## The most non-corrosive eco-labelled de-icer on the market - compatible with any surface

The combination of Calcium Magnesium Acetate and Potassium Formate gives ICE & DUST-AWAY unique non-corrosive features, making it compatible with any surface or any metal, including galvanized metals.

In 2017, Danish Storebælt authorities have announced the results of their own long-term corrosion trials performed in the period 2001-2017. The results show, that the subjects treated with 25% CMA solution showed no sign of corrosion. The subjects that have been treated with a 30% potassium formate solution have shown clear signs of corrosion in larger and smaller areas throughout the subject. The subject that has been treated with a 22% sodium chloride solution has corrosion around the edges, while surfaces have not been significantly corroded.\*

## A unique product which comes in a variety of formulations for more flexible application and use

Alumichem A/S has developed a unique product for winter maintenance with a variety of product formulations, each designed for efficient performance at different weather and temperature conditions.

Product	Freezing Point
ICE & DUST-AWAY	-14 °C
ICE & DUST-AWAY +25	-19 °C
ICE & DUST-AWAY +50	-23 °C
ICE & DUST-AWAY +75	-31,5 °C

\*Source: Guidelines on use of Deicers, DK National Road Committee, 2017

## Effective for both preventive and curative treatment, ICE & DUST-AWAY is safe and easy to apply and has endless application possibilities:

**Municipal Winter Maintenance** – Especially used in areas, where it is necessary to protect trees, plants, water in ponds and lakes, as well as ground water.

In many Scandinavian cities ICE & DUST-AWAY is used by municipalities to reduce Particulate Air Pollution, which is especially high during winter season.

*“The continuous use of ICE & DUST-AWAY by Stockholm Municipality during winter seasons on approximately 35 streets has resulted in an average reduction of around 35% in the daily PM10 averages.” \**

**Private Winter Maintenance** – More and more business- and home owners prefer the safe, efficient and ecofriendly alternative to salts, which is non-hazardous towards plants, trees and pets.

**Transportation** - Airport passenger- and arrival areas. Ferries. Train stations, platforms & bridges. Parking places and facilities. Bicycle paths. Sidewalks.

**Shopping malls, Retail stores, Supermarkets, Restaurants** - ICE & DUST-AWAY guarantees safe admittance to the facilities, while leaving no traces and residue inside.

**Hotels** - ICE & DUST-AWAY provides safety on parking and admittance areas and leaves no traces in the hotel halls and rooms.

**Zoological gardens, animal hotels, farms, indoor and outdoor riding facilities** – ICE & DUST-AWAY is the best choice of winter maintenance due to its safety, efficiency and absolutely no hazardous effect on animal health.

**Artificial turf sport pitches** – ICE & DUST-AWAY is perfect for winter maintenance of artificial turf sport pitches, as it is non-hazardous to people or natural water resources.

ICE & DUST-AWAY comes in a liquid form and is ready to use. It should not be diluted. Technical Data sheet and SDS can be found at [www.alumichem.com](http://www.alumichem.com)

Dosage of the de-icer depends on many different factors. The following table shows the indicative dose in grams per m<sup>2</sup> at different road temperatures.

ICE & DUST-AWAY	0 to -3 °C	-4 to -7 °C	-8 to -10 °C
Preventive spray against a layer of frost	10 g/m <sup>2</sup>	10 g/m <sup>2</sup>	10 g/m <sup>2</sup>
After the removal of snow	20 g/m <sup>2</sup>	35 g/m <sup>2</sup>	50 g/m <sup>2</sup>

ICE & DUST-AWAY PLUS 50	0 to -3 °C	-4 to -7 °C	-8 to -10 °C	-11 to -18 °C
Preventive spray against a layer of frost	10 g/m <sup>2</sup>	10 g/m <sup>2</sup>	10 g/m <sup>2</sup>	10 g/m <sup>2</sup>
After the removal of snow	20 g/m <sup>2</sup>	30 g/m <sup>2</sup>	40 g/m <sup>2</sup>	50 g/m <sup>2</sup>

\*Source: Studies of some measures to reduce road dust emissions from paved roads in Scandinavia. Michael Norman, Christer Johansson, A Stockholm Environment and Health Administration

### Factors that influence the required dosage:

- Surface (stone, gravel, asphalt, concrete etc.). Smooth and solid surfaces generally require smaller amounts because the amount applied will not be drained off.
- Wind speed and temperature are very influential on the degree to which the surface is cooled off and thus on the dosed amount.
- Local traffic removes/relocates the applied de-icing agent. The heavier and faster the traffic, the higher the required doses.
- Precipitation. The anticipated amounts of rain or snowfall after applying the de-icing agent also have a large impact on the effect.
- Temperature. The actual temperatures after the de-icing agent has been applied also have a considerable impact on the effect.

There are many factors to consider when applying a de-icing agent. On the other hand, this has always been so in the case of conventional road salt.