

Product Sheet

RUNWAY DE-ICER

CLARIANT 

SAFEWAY®
KA HOT BLUE



Product Description

Safeway® KA HOT BLUE is an efficient de-icing fluid for runways and aprons that meets or exceeds the current SAE AMS 1435 specification and conforms to the strict ecological requirements.

Potassium acetate, the freezing point depressant of Safeway® KA HOT BLUE, and specially designed inhibitors ensure that the materials employed in aircraft construction are not attacked. Tests conducted according to AMS 1435 show the material compatibility.

The material compatibility tests according to SAE AMS 1435 determine the behavior of the liquid runway deicer regarding acrylic plastic as well as the corrosion behavior regarding several metals. Please find more detail within the test reports of Safeway® KA HOT BLUE.

When used in conjunction with the mechanical facilities of airport maintenance departments and modern spraying and clearing techniques, Safeway® KA HOT BLUE allows snow and ice to be cleared quickly and economically.

Furthermore, a specific holdover time against re-freezing can be achieved using Safeway® KA HOT BLUE in a preventive anti-icing step before snow events or on cleaned surfaces.

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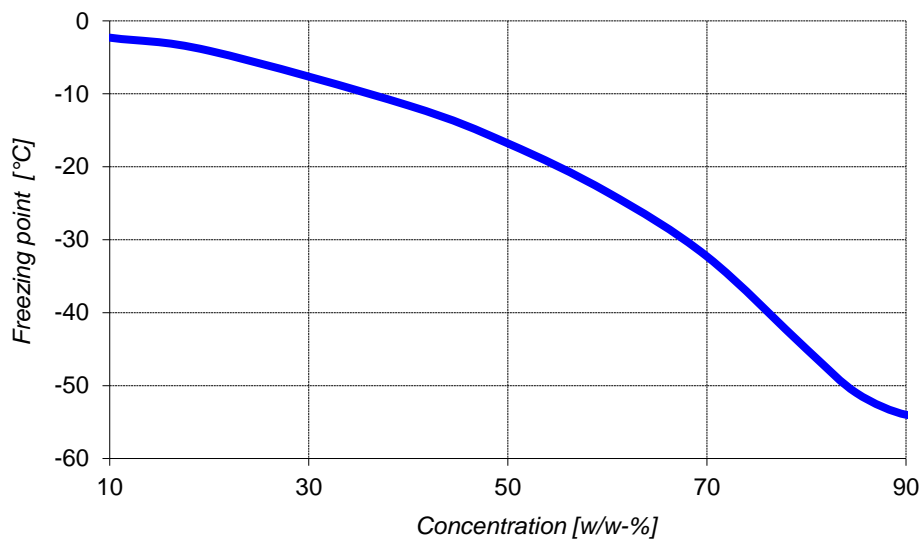
Technical Data – Product Properties

	VALUE	REFERENCE METHOD
PHYSICAL PARAMETERS		
Appearance	blue liquid, clear	visual
Density (20 °C)	1.25 - 1.29 g/cm ³	DIN 51757
Refractive index (20 °C)	approx. 1.39	ASTM D 1747
Water content	48 - 51 w/w-%	DIN 51777
pH value (20 °C)	9.0 - 11.4	DIN 19268
Freezing Point (1:1 diluted)	- 16°C	ASTM D1177
MATERIAL COMPATIBILITY		
Sandwich Corrosion	passed	ASTM D 1110
Total Immersion Corrosion		
Al Alloy	passed	AMS 4037, 4041, 4049
Mg Alloy, dichromate treated	passed	AMS 4367
Ti Alloy	passed	AMS 4911
Carbon Steel	passed	AMS 5045
Low-Embrittling Cd Plate	passed	ASTM F 1111
Hydrogen Embrittlement	passed	ASTM F 519
Stress-Corrosion Resistance	passed	ASTM F 945 A
Transparent Plastics	passed	ASTM F 484
Painted Surfaces	passed	ASTM F 502
Unpainted Surfaces	passed	ASTM F 485
Runway Concrete Scaling Resistance	passed	ASTM C 672
Asphalt Concrete Degradation Resistance	passed	LFV Method 2-98
ECOLOGY AND TOXICOLOGY		
German regulations on dangerous substances	does not require a hazard warning label	(GefStoffV)
Water Hazard Class	1	(WGK)
Bacteria Toxicity (EC ₅₀ , 16 h, Pseudomonas Putida)	> 1,000 mg/L	DIN 38412-8
Fish Toxicity (EC ₅₀ , 48 h, Fish egg)	> 1,000 mg/L	DIN 38415-6
Daphnia Toxicity (EC ₅₀ , 48 h, Daphnia magna)	> 1,000 mg/L	DIN 38412-40
Algae Toxicity (EC ₅₀ , 72 h, Desmodesmus sub.)	> 1,000 mg/L	EN ISO 8692
Biodegradability (8 d, 20°C)	99 %	OECD 301 E
Chemical Oxygen Demand (COD)	0.30 kg O ₂ /kg	DIN 38409-H41
Biochemical Oxygen Demand (BOD ₅)	0.15 kg O ₂ /kg	DIN 38409-H51

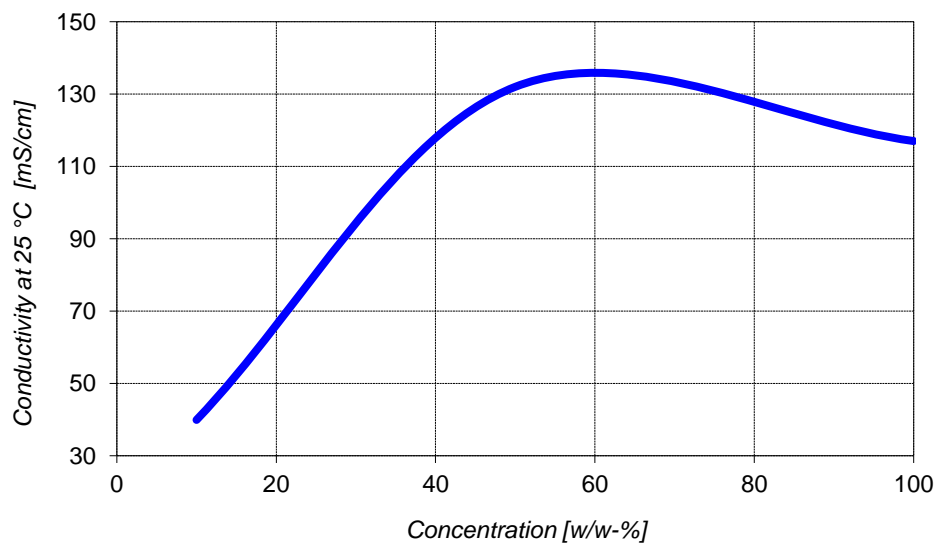
The results of the ecotoxicological screening demonstrate that Safeway® KA HOT BLUE is toxicologically harmless, consumes a low amount of oxygen upon degradation and is fully biodegradable.

In Service Properties

Freezing point, ASTM D 1177



Conductivity, EN 27888



Application Recommendations

These following application recommended indicate a rough idea of the applicable amounts in different de-/anti-icing conditions. Depending on the weather situation and conditions of the runway the indicated application rates can be significantly different.

Deicing:

RUNWAY CONDITIONS	0 °C TO -5 °C	-5 °C TO -10 °C	LOWER THAN -10 °C
Ice, Packed Snow < 1 mm	10 - 20 g/m ²	20 - 30 g/m ²	30 - 40 g/m ²
Snow, Snow fall	25 - 35 g/m ²	35 - 45 g/m ²	45 - 55 g/m ²
Ice, Freezing Rain	30 - 40 g/m ²	40 - 50 g/m ²	50 - 60 g/m ²

In case of a layer of ice of more than 3 mm single application of Safeway® KA HOT BLUE will not penetrate the complete ice layer. Therefore the common application of Safeway® KA HOT BLUE and solid de-icer Safeway® SF is recommended.

Anti-Icing:

WHEATER CONDITIONS	APPLICATION RATE
Expectation of freezing rain or wet snow	30 - 40 g/m ²

Safeway® KA HOT BLUE is an efficient de-icing fluid for runways and aprons. As the efficiency of runway de-icers is influenced by many different factors like surface material, surface roughness, way of application, weather and wind conditions the required amount may differ from the recommended amounts.

Application of Safeway® KA HOT BLUE is distinguished in de-icing and anti-icing. De-icing means the melting of ice and snow by the application of Safeway® KA HOT BLUE followed by mechanical removal of the slush. Anti-icing means the preventive application of Safeway® KA HOT BLUE in order to protect the runway when icing conditions like freezing rain or snow are expected. In order to us as little as possible of a deicing chemical, in general it is recommended to apply the deicing agent as short as possible before the expected precipitation occurs.

In order to reduce the necessary amount of Safeway® KA HOT BLUE it should only be used to enable the ice penetration of the ice layer and to support the ice undercutting. Ice and snow which does not stick to the surface can be removed by snow ploughs and sweeper blowers more easily.

Delivery and Storage

Safeway® KA HOT BLUE is delivered in road trucks and IBC-containers. It can be stored in tanks made of stainless steel, alkaline resistant glass-fibre-reinforced plastics or normal steel coated tanks with synthetic resin.

Equipment

Safeway® KA HOT BLUE can be sprayed by conventional spraying trucks. In general, either sprayers based on a sprayer bar equipped with nozzles or sprayers based on a rotating plate which are able to spread liquid and solid de-icers are used.

Taking into consideration density of Safeway® KA HOT BLUE, the applicable amount per area unit has to be adjusted according to the recommendation of the respective spreading truck.

Based on environmental aspects it is reasonable to keep the amount of sprayed de-icer as low as possible. Therefore, we would like to refer to the recommendations of the “*Arbeitsgemeinschaft Deutscher Flughäfen (ADV)*” as well as to the bulletin “*Enteisungsabwasser von Flugplätzen*” of the working group de-icing waste water as well.

Safeway® KA HOT BLUE is in line with all therein stated recommendations.

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