

Type IV aircraft de-icing fluid **SAFEWING® MP IV LAUNCH**



SAFEWING® MP IV LAUNCH

Clariant is the global leader in aircraft and runway de-icing products with over 40 years of experience. Our outstanding expertise in business relationships, product service, logistics and our world class research team make Clariant's Safewing®, Max Flight™, Octaflo™ and Safeway® products your preferred choice in the aviation business.

BENEFITS AT A GLANCE

- Extended holdover time at all weather conditions.
- Low viscosity profile minimizes air entrapment and gives enhanced fluid elimination during take-off.
- Low residue formulation maximizes fluid elimination and minimizes the formation of re-hydrated residues.
- Excellent shear stability enables compatibility with most spraying cars and spray nozzles.
- Low surfactant content gives low foaming during application resulting in easier handling.
- Fully biodegradable additive package, low surfactant content and triazole-free formulation gives superior environmental profile.

PRODUCT DESCRIPTION

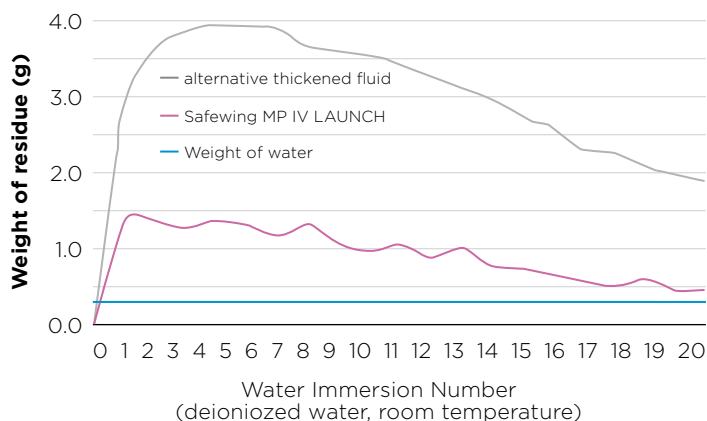
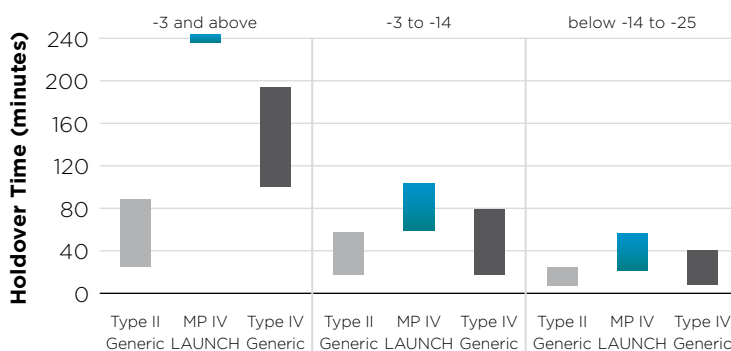
- Safewing® MP IV LAUNCH is your preferred choice for a modern de-/anti-icing fluid. Due to its outstanding shear stability and product properties this fluid is setting new standards among the aviation industry. This propylene glycol based fluid can be applied hot or cold, neat or diluted.
- Safewing® MP IV LAUNCH is designed to combine a low viscosity profile with an outstanding product performance.
- Safewing® MP IV LAUNCH is approved according to AMS 1428.

PERFORMANCE

Holdover time: Safewing® MP IV LAUNCH was designed to compete among the strongest fluids of its class. Outstanding holdover times offer an extra safety margin and operational flexibility during winter operations.

Residues: Safewing® MP IV LAUNCH not only belongs to the most shear stable fluids of its class, but additionally produces a minimum amount of re-hydrated residues.

**Holdover Times "Freezing Fog" for 100/0
FAA Holdover Time Guidelines 2012/2013**



SAFEWING® MP IV LAUNCH



ENVIRONMENT

The fluid contains a minimum amount of surfactant and a fully biodegradable, triazole-free corrosion inhibitor package. This gives Safewing® MP IV LAUNCH a leading environmental profile.

Aquatic toxicity

LC₅₀	(Rainbow trout, 96 h OECD 203)	2.4 g/L
EC₅₀	(Ceriodaphnia spec., 48 h OECD 202)	0.5 g/L
EC₅₀	(Bacteria, 30 min DIN EN ISO 11348-2)	5.2 g/L

HANDLING

Thickened fluids are heat-sensitive. It is recommended to restrict the temperature of standby storage heaters to +60 °C. Special care has to be taken not to cause fluid damage due to local overheating by use of high capacity heating elements. Furthermore, exposure to UV light has to be avoided.

CERTIFICATION AND APPROVALS

Safewing® MP IV LAUNCH is certified according to the international standard AMS 1428.

PRODUCT PROPERTIES

Chemical Composition	50% aqueous propylene glycol solution with corrosion inhibitors
Appearance	green liquid
Refractive Index (20 °C)	1.389 - 1.392
pH (as is)	7.0 - 7.5
Density (20 °C)	approx. 1.04 g/cm ³
Freezing Point (diluted 1 : 1 with water)	< -10 °C
Brookfield Viscosity (0.3 rpm, 20 °C)	10,000 - 20,000 mPa·s
Surface Tension	27.2 dynes/cm
COD	0.92 kg O ₂ /kg
BOD ₅	0.37 kg O ₂ /kg

IN SERVICE LIMITS

pH	7.0 - 7.5
Neat fluid	7.0 - 7.5
Dilutions	6.5 - 7.5
Minimum On-Wing Viscosities (LV 1, 0.3 rpm, 20 °C)	
Neat fluid	7,550 mPa·s
Diluted 75:25 with water	18,000 mPa·s
Diluted 50:50 with water	10,700 mPa·s
Maximum On-Wing Viscosities (LV 2, 0.3 rpm, 20 °C)	
Neat fluid	20,500 mPa·s
Diluted 75:25 with water	47,800 mPa·s
Diluted 50:50 with water	63,000 mPa·s
LOUT	
Neat fluid	-29 °C
Diluted 75:25 with water	-14 °C
Diluted 50:50 with water	-3 °C

www.aviation.clariant.com
aviation@clariant.com

Contact Europe

Clariant International Ltd
BU Industrial & Consumer Specialties
Rothausstrasse 61, CH-4132 Muttenz

Commercial: +44 1454 411 789
Technical: +49 8679 752 14

Contact USA

Clariant Corporation
BU Industrial & Consumer Specialties
625 East Catawba Ave
Mt Holly, NC 28120

Commercial: +1 704 822 2677
Technical: +1 704 822 2184

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