

Short description

KORASILON[®] Fluids AM/AA are polysiloxanes in which, in contrast to pure polydimethylsiloxanes (e.g. **KORASILON[®] Fluid M**), some of the methyl groups have been replaced by alkyl groups and/or aryl groups (also known as phenyl groups). This modification results in special properties that clearly distinguish them from ordinary polydimethylsiloxanes.

Different product types can be distinguished:

- Aryl-modified polysiloxanes
 - High aryl content
 - Medium aryl content
 - Low aryl content
- Alkyl-Aryl-modifizierte Polysiloxane
- Alkyl-modifizierte Polysiloxane

Product properties

This change in the chemical structure results in the following changes in the chemical properties compared with unmodified **KORASILON®** Fluids M as the degree of substitution increases:

Influence on properties due to aryl, alkyl-aryl and alkyl modification compared to KORASILON [®] Fluids M				
Improvement	Temperature stability (KORASILON® AM Fluids only) Refractive index (gloss pattern) Lubricating properties Solubility in lower alcohols Miscibility with metal soaps and greases			
Avoidance	Painting problems (overpainting) Adhesion problems (oversticking)			

The individual selection of suitable products is based on the application and the desired properties. Depending on the problem, the cost-performance ratio can also be taken into account. **KORASILON® AA** Fluids offer decisive advantages here and are to be preferred if improved temperature stability or a particularly high refractive index are not required but an optimized cost-performance ratio is desired at the same time.



KORASILON[®] Fluids AM

Fields of application

Due to their special chemical properties, aryl-modified KORASILON® AM oils are particularly suitable for the following areas of application:

- Heat transfer fluids for high thermal stress
- Pressure transmission fluids (especially for high temperatures)
- Lubricants (especially for metal/non-metal and metal/plastic pairings)
- Heat resistant lubricants and release agents
- Polishes with particularly high refractive index for pronounced gloss

Product data*

Designation	Viscosity in mm²/s at 25°C	Refractive index at 25 °C	Density in g/mL at 25 °C	Flash point in °C				
Types with low aryl content								
KORASILON® Fluid AM 21	20	1.44	1.00	>170				
KORASILON [®] Fluid AM 201	200	1.45	1.04	>285				
KORASILON® Fluid AM 1001	1'000	1.46	1,07	>285				
Types with medium aryl content								
KORASILON [®] Fluid AM 50	50	1.47	1.02	>170				
Types with high aryl content								
KORASILON [®] Fluid AM 102	100	1.50	1.07	>270				
KORASILON [®] Fluid AM 122	125	1.50	1.07	>270				
KORASILON [®] Fluid AM 202	200	1.50	1.07	>285				
KORASILON® Fluid AM 302	300	1.50	1.07	>260				
KORASILON [®] Fluid AM 502	500	1.51	1.08	>270				
KORASILON [®] Fluid AM 1002	1'000	1.51	1.09	>280				



Temperature resistance

The aryl-modified **KORASILON® Fluids AM** show a significantly improved resistance to high temperatures compared to unmodified fluids. To further improve the resistance, stabilized variants of these oils (**KORASILON® Fluids HT-A**) are also available, which can further increase the gelling time in open (oxygen contact) systems. In the following diagram, the stabilities of the different **KORASILON® Fluids** can be compared (approximate data based on laboratory tests).



In order to assess the individual temperature stability and usability, it is imperative that preliminary application tests are carried out for testing!

KORASILON[®] Fluids AA

Fields of application

Due to their special chemical properties, the alkyl-aryl-modified and alkyl-modified **KORASILON®** Fluids AA are particularly suitable for the following applications:

- Paintable and pasteable release agents, lubricants and polishes.
- Release agents for the demolding of various plastics and low-melting metals
- Hydrophobing of pigments such as titanium dioxide without silicone-typical incompatibilities
- Additive in paints/lacquers to improve flow, gloss and scratch resistance
- Reduction of microfoam in solvent-based paints/lacquers



Product data*

Designation	Viscosity in mm²/s at 25°C	Refractive index at 25 °C	Density in g/mL at 25 °C	Flash point in °C				
Typen mit Alkyl-und Aryl-Gruppen								
KORASILON® Fluid AA 1	1'300	1.47	0.91	>100				
KORASILON [®] Fluid AA 2	1'400	1.47	1.01	>200				
KORASILON [®] Fluid AA 3	1'200	1.47	0.92	>120				
Typen mit Alkyl-Gruppen								
KORASILON [®] Fluid AA 4	200	1.43	0.93	>100				

Overpaintability

Compared to unmodified polydimethylsiloxanes, **KORASILON®** AA Fluids show a significantly improved recoatability and adhesiveness. This makes it possible to use them in the above-mentioned areas without causing the incompatibilities typical of silicones. For example, parts that have been removed from the mold using modified oils can usually be further processed (painted, bonded) without any problems, whereas this would not be possible if unmodified oils were used. The incompatibilities typical of silicones are typically manifested in the formation of craters during painting, a form of wetting disorder. This is illustrated below using pictures from tests carried out.

Painting of substrates with silicone oil residues



Wetting disorder (cratering) KORASILON Fluids M Without modification



No wetting disturbance (Keine Kraterbildung) KORASILON Fluids AM/AA Aryl/alkyl-aryl/alkyl modification

In order to assess the individual recoatability and bondability, it is imperative that preliminary application tests are carried out for testing!



KORASILON[®] Fluids AM/AA

Miscellaneous

Further products:

In addition to pure oils, we also offer the following supplementary services:

- Ready-to-use silicone pastes of different viscosities and with different fillers
- Water-dilutable emulsions, e.g. for filler coating or as release agents
- Packaging of special oils in aerosol bottles
- Mixing of intermediate viscosities and dyeing of the oils
- Packing in customized packaging materials and special packages

If you are interested, please request additional information material on this subject.

<u>Storage</u>

KORASILON® Fluids AM/AA have a shelf life of 12 months after date of manufacturing when correctly stored in its original unopened container at storage temperatures between +5 °C and +40 °C.

Storage beyond to the period indicated on the product label does not automatically mean that the product is unusable. However, an inspection of the property values necessary for the intended use is essential due to quality assurance reasons.

Further information on product safety and handling is given in the Material Safety Data Sheet.

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*Informative properties not intended to be used as product specification

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