



# EDMfluid 95-S

*Synthetic, low-to-medium viscosity dielectric fluid for die-sinking EDM*

## Description

The **EDMfluid 95-S** is a synthetic, low-to-medium viscosity dielectric fluid with a short boiling range (only 7 °C) suitable for technical mould manufacturing with complex geometries, i.e. for the electronic mould production and for small plastic organ manufacturing.

The fluid is formulated with highly pure paraffin-based hydrocarbons, further purified by special processing to alter the hydrocarbons' molecular structure. This allows to eliminate almost completely the aromatic hydrocarbon content and to minimise the range between initial and final boiling points.

The **EDMfluid 95-S**, thanks to its formulation, can guarantee high stability values in the long run of its viscometric characteristics, a basic and necessary requirement to achieve homogenous and high quality surface finish.

## Properties and advantages

Compared with traditional products for die-sinking EDM with low viscosity values and long boiling range, or with higher viscosity values, the **EDMfluid 95-S** provides the following advantages:

- stability of process performance even after very long use
- higher erosion performance, particularly during finishing
- exclusion of risks of triggering electric arcs due to the formation of lac deposits on the electrodes or to the unsuitable viscosity, which may aid both the generation of sockets on the electrode, if made of graphite, and a surface with local opaque spotting
- reduction of specific tool electrode wear and tear
- drastic reduction in evaporation (up to 50%) even during high amperage processing, when compared with traditional dielectrics of 1.8 cSt viscosity and long boiling range. Such reduction is due to the extremely short distillation range (only 7 °C) of the **EDMfluid 95-S**
- viscosity values suitable to ensure even fluid circulation in the gap area, including during minimum gap processing. This facilitates flushing in the erosion area and aids the removal of swarfs
- excellent filtering capacity to ensure higher performance and longer filter separator life
- excellent refrigerating capacity due to **EDMfluid 95-S** low viscosity and high thermal conduction properties
- total transparency and colourlessness of fluid, which, when properly filtered, ensures an excellent and unchanging visibility of the processing area even after long machining times
- higher processing safety thanks to the higher flash point when compared to traditional fluids with matching viscosity, and to the very low tendency to evaporation
- non-toxic due to the high refining and purification degree of the substances on which the **EDMfluid 95-S** is based. The fluid stands out for its high skin tolerance due to the negligible aromatic hydrocarbon content
- safe for metals and seals of machines
- higher stability and resistance to oxidation; this is due to the type of content and to the special additives, factors that contribute to ensure the even performance during long periods and to lengthen the economic life of the product in use
- total absence of smell in the working area.



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## Applications

The **EDMfluid 95-S** is particularly suited to technical mould manufacturing with complex geometries requiring a surface roughness  $r_a$  between 0.8 and 2  $\mu\text{m}$ .

The fluid is specifically recommended for:

- mould manufacturing for electronics;
- mould manufacturing for electricals, both home and car applications;
- mould manufacturing for cosmetics packaging;
- mould manufacturing for small house appliances;
- mould manufacturing for plastic mechanical organ production (gears, etcetera).

## Specifications

The **EDMfluid 95-S** is suitable to the requirements of major die sinking EDM machine manufacturers, such as: AGIE, CDM, CHARMILLES, CORMAC, ELOTHERM, EROTECH, FANUC, INGERSOLL, Makino, MITSUBISHI, ONA, Sodick as well as those of major filter manufacturers

## Storage conditions and safety

In normal conditions of use, **EDMfluid 95-S** does not entail any specific risks. Although fume emission is very low, it is advisable to install an efficient fume aspiration and extraction system. Information regarding health and environmental safety is available on request.

It is advisable to store the product indoors. If outdoor storage cannot be avoided, keep the drums horizontal to avoid any infiltration of water, which is not compatible with the electromachining process, in that even minor quantities could affect the dielectric strength of the contaminated fluid.

In case of outdoor storage, ensure a constant temperature of  $\geq -5\text{ }^\circ\text{C}$

## Typical characteristics

<b>EDMfluid</b>			<b>95-S</b>
<b>Characteristics</b>	<b>Test method</b>	<b>Unit of measurement</b>	<b>Values</b>
<b>Appearance</b>			Colourless liquid
<b>Density at 15°C</b>	ASTM D4052	kg/l	0.761
<b>Kinematic viscosity 20°C</b>	ASTM D 445	CSt	2.36
<b>Flash Point (PM)</b>	ASTM D93	°C	$\geq 95$
<b>Pour point</b>	ASTM D97	°C	-6
<b>Initial distillation point</b>	ASTM D86	°C	223
<b>Final distillation point</b>	ASTM D86	°C	230
<b>Colour</b>	ASTM D156		+30
<b>Odour</b>			Odourless
<b>Aromatic hydrocarbon content</b>	UV spectrum	%	<0.001
<b>Neutralisation number</b>	DIN 51558/1	mg KOH/gr.	0.01
<b>Doctor test</b>	DIN 51765		negative

The above data are typical production data and are not intended to represent a specification<sup>1</sup>

<sup>1</sup>Rev. n°. 0 of 2/10/01