



FLUSIN M

Multi-functional synthetic fluid for die-sinking type electric discharge machining

Description

FLUSIN M is a medium viscosity **Multi-functional** type synthetic fluid formulated to cater to the modern requirements of the die-makers, able to meet the need for high machining efficiency during the roughing out phase and also to assure top flight performance during finishing and polishing. It is particularly suited for the production of dies for the plastics sector.

Its high level, constant performance stems from the high level refining of the hydrocarbon substances selected for formulation of the fluid and the very limited interval between the start and end of distillation.

FLUSIN M is odorless and colorless, has a very low content of aromatic hydrocarbons and is non-toxic.

Properties and advantages

Considering all the requirements that must be met by a modern high efficiency EDM fluid, **FLUSIN M** assures the following advantages compared with conventional fluids with low viscosimetric grading:

- ⇒ High level dielectric strength and ability to concentrate discharge energy in the erosion area. This property, together with the possibility of operating at high frequencies, means that **FLUSIN M** guarantees top flight performance as regards:
 - level of finish and dimensional accuracy
 - constant efficiency and performance even after long periods of use
 - reduction of specific fluid consumption (a more than twofold reduction during a year of operation compared with low viscosity fluids with a wide distillation range)
 - reduced specific consumption of tool electrodes
 - absence of bridges and voltaic arcs, the main causes of production downtimes and reduced efficiency
- ⇒ Medium-low viscosity able to guarantee adequate circulation of the fluid in gap area also when machining complex, deep profiles and volumetric shapes. This facilitates flushing of the erosion area and removal of swarf
- ⇒ High level filterability with very limited tendency to foam, facilitating the action of the filtering segments and increasing their service life
- ⇒ Effective cooling capability promoted by high level thermal conductivity and its medium low and constant viscosity in time
- ⇒ Absolute transparency and colorless if suitably and constantly filtered
- ⇒ Medium high flash point suitable for the specific type of application, able to guarantee high level safety against risk of fire
- ⇒ Limited tendency to evaporate due to the reduced interval between the start and end of distillation
- ⇒ reduced emission of fumes
- ⇒ Improved stability and resistance to downgrading caused by oxidation, to be ascribed to the high level refining of the hydrocarbon substances used to formulate the product. With therefore longer efficiency of the charges used in operation
- ⇒ Chemically inactive to metals and the seals of the machine
- ⇒ Absence of unpleasant, harmful odors in the working environment



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Applications

FLUSIN M has been developed to meet the requirements of the makers of dies for the thermo-plastic sector, for the pressure casting of light alloys, in order to provide a fluid with a very restricted tendency to evaporate (therefore particularly suited for centralized plants with high contact surface with the air), able to improve machining efficiency in the case of high amperage values (> 60 Amp) and which also assures reduced surface roughness and a well-balanced purchase cost.

Specifications

FLUSIN M complies with and exceeds the requirements of the main plunge type 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, **FLUSIN M** does not entail any specific risks. However, even if 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 fluid indoors. If outdoor storage cannot be avoided, keep the drums horizontal to avoid any infiltration of water which is not compatible with the electro-erosion process in that even minor quantities could affect the die-electric strength of the contaminated fluid.

In the case of stocking outdoors, make sure that ambient temperature is at least 5°C above product freezing point.

Typical characteristics

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Characteristics	Test method	Unit of measurement	Values
Appearance			Clear, colorless
Density at 15°C	ASTM D4052	kg/l	0.763
Kinematic viscosity 20°C	ASTM D445	cSt	2.7
Flash point (PM)	ASTM D93	°C	> 100
Start of distillation	ASTM D86	°C	226
End of distillation	ASTM D86	°C	246
Flow point	ASTM D97	°C	-3
Color	ASTM D156		+30
Odor			None
Aromatic hydrocarbon content	UV spectrum		< 0.01
Doctor test	DIN 51765		negative

The above data are typical production data and are not intended to represent a specification¹

¹ 01-01/Rev. 2