

# VISCOSITY - What is DIN/sec?



The flow rate of fluids is determined by the resistance created by its surface tension and can be represented in DIN/sec. In general, the thicker the material the higher the viscosity level and the slower its flow.

The best way to ensure that sprayed liquids atomise correctly is to use a spray gun, power setting and nozzle type that is designed for your material's thickness. A viscosity cup, such as the Ford #4 provides an approximate viscosity measure and can be purchased at little expense from the internet.

- Viscosity of liquids are notated as DIN/sec
- Viscosity is measured in seconds
- One second of continuous gravity flow of liquid through a Ford#4 Cup, equals 1 DIN/sec



It is important when measuring viscosity that the temperature of the cup and the liquid is maintained. Heating tends to lower viscosity and even ambient temperature makes a significant difference to viscosity / flow rate. The cup needs to be dipped into the material and filled up to the top. Time how many seconds it takes until it flows through. Stop timing after the continuous flow of material from the cup has ended. This will provide the DIN/sec of that material at that temperature.

KREA Swiss offers a range of food guns designed specifically for specific applications like chocolate or oil, as well as multi-purpose guns. Tip - thick food materials such as butter, fats, etc. can be heated carefully to reduce their viscosity and provide a finer spray pattern.

The multiSPRAY	The volumeSPRAY	The oilSPRAY	The hotCHOC
			
Viscosity*: max 80 DIN/sec	Viscosity*: max 100 DIN/sec	Viscosity*: 18-36 DIN/sec	Viscosity*: 20-28 DIN/sec

KREA Swiss also provides the K25T and K45T paint gun, able to spray even very thick materials (includes Ford#4) - more details from our website. After measurement, you can determine if any thinning of material is needed.

In addition to be able to change the gun's power setting to the material viscosity, where applicable, different nozzles can be used - from 0.4mm (R4) for thinner materials to 0.8mm (R8) for high viscosity materials or large volumes.

Round jet nozzle R4	Round jet nozzle R6	Round jet nozzle R8	Flat jet nozzle F7S
			
for: oilSPRAY, multiSPRAY, volumeSPRAY	for: oilSPRAY, multiSPRAY, hotCHOC, volumeSPRAY	for: oilSPRAY, multiSPRAY, volumeSPRAY	for: multiSPRAY, volumeSPRAY