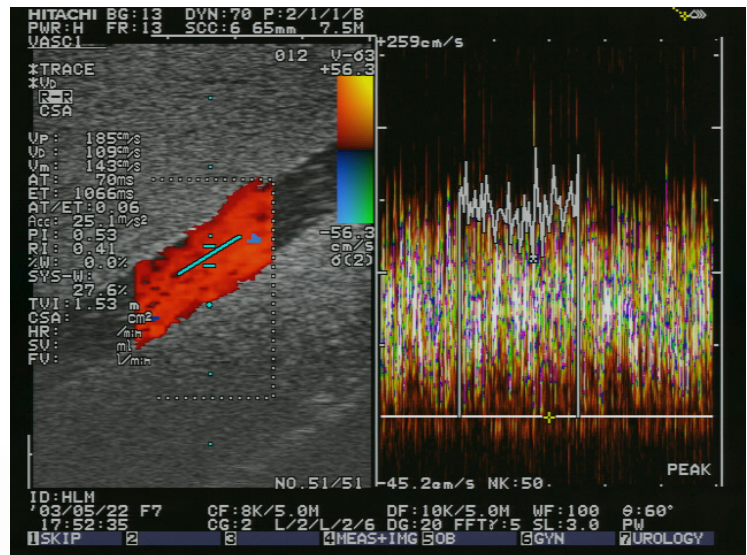


# Doppler Test Fluid

Model 069-DTF & ATS707-DTF



CIRS Doppler Test Fluids are reliable, stable and non-hazardous fluids formulated to mimic the acoustic and physical properties of human blood. They are intended to be used in conjunction with ultrasound Doppler Flow phantoms and pumping systems used to evaluate the system performance of a Doppler imaging system. Two formulations are available, the ATS 707-DTF and the 069-DTF. Both come in a one-gallon container.

The 069-DTF formulation is based on published standards, and is the better match to the acoustic properties of blood (see table 1). The ATS 707-DTF is optimized for use with the ATS 700-D Doppler Flow Digital Pumping System. Both are fully degassed prior to packaging to minimize noise from air bubbles. Both fluids are tested for speed of sound, attenuation, density and viscosity using test equipment traceable to NIST.

## Benefits

- Evaluates system performance of doppler imaging systems
- Mimics acoustic and physical properties of blood
- Used in conjunction with CIRS Doppler Flow phantoms
- Available in two formulations
- No refrigeration necessary

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Tissue Simulation & Phantom Technology

**MODELS 069-DTF & ATS707-DTF INCLUDE**

PROPERTY	IEC 61685:2001 BMF SPECIFICATION	069-DTF	ATS707-DTF
Viscosity (cP)	4 ± 0.4	4 ± 0.5	1.7 ± 0.2
Density (g/cc)	1.05 ± 0.04	1.05 ± 0.04	1.04 ± 0.01
Sound Speed (m/s)	1570 ± 30	1570 ± 15	1570 ± 15
Attenuation coefficient (dB/cm/MHz)	< 0.10	0.10 ± 0.02	0.10 ± 0.02
Backscatter coefficient (f <sup>4</sup> * m <sup>-1</sup> * sr <sup>-1</sup> )	1 x 10 <sup>-31</sup> - 1 x 10 <sup>-30</sup>	≈ 10 <sup>-30</sup>	≈ 10 <sup>-30</sup>
Particle size (micrometers)	7-8	5 ± 1	30 ± 3
Fluid Properties	Non-Newtonian	Newtonian	Newtonian

**Table 1**

QTY	COMPONENT DESCRIPTION
1	Doppler Test Fluid (1 gal)
1	Safety Data Sheet
1	User Guide
-	6 Month Warranty

**SAFETY INFORMATION:** CIRS has evaluated this fluid and does not believe it poses a hazard at the quantities and concentrations provided. Although this product has been evaluated and found to be safe if used as intended, it is always best to avoid repeated or prolonged skin contact with materials not intended for use on the skin.

**DISPOSAL INFORMATION:** Solidify with vermiculite or other suitable material and then place in the trash.

**STORAGE INFORMATION:** Particle separation may occur during prolonged storage. Stir before each use. The fluids have been formulated to prevent clumping of particulates within this fluid, allowing repeated use after stirring the fluid.

**Reference:**

1. K. Rammnarine, et. al., "Validation of a New Blood-Mimicking Fluid for Use in Doppler Flow Test Objects", *Ultrasound in Medicine & Biology*, Vol. 24. No. 3, pp.454.
2. IEC 61685:2001-07 "Ultrasonics – Flow measurement systems – Flow test object"

