

Doppler Fluid

Model 769DF



USER GUIDE

CIRS

900 Asbury Ave • Norfolk, Virginia 23513 • USA • Tel: 757-855-2765 • WWW.CIRSSINC.COM

OBJECTIVE

CIRS Inc's Doppler Fluid is reliable, stable and non-hazardous fluid formulated to mimic the acoustic and physical properties of human blood. It is intended to be used in conjunction with ultrasound Doppler Flow phantoms and pumping systems when evaluating the performance of a Doppler imaging system.

DESCRIPTION OF DOPPLER FLUID

The 769DF formulation is based on published standards and matches the acoustic properties of blood. It is fully degassed prior to packaging to minimize noise from air bubbles. The fluid is tested for speed of sound, attenuation, density and viscosity using test equipment traceable to NIST.

PROPERTY	IEC 61685:2001 BMF SPECIFICATION	769DF
Viscosity (cP)	4 ± 0.4	4 ± 0.5
Density (g/cc)	1.05 ± 0.04	1.05 ± 0.04
Sound Speed (m/s)	1570 ± 30	1570 ± 15
Attenuation coefficient (dB/cm/MHz)	< 0.10	0.10 ± 0.02
Backscatter coefficient ($f^4 \cdot m^{-1} \cdot sr^{-1}$)	10^{-30} to 10^{-31}	$\approx 10^{-30}$
Particle size (micrometers)	7-8	5 ± 1
Fluid Properties	Non-Newtonian	Newtonian

Table 1

USE OF DOPPLER FLUID

Stir fluid before each use until the fluid has a uniform clarity, as particles may settle or rise to the surface during extended storage. Purge Doppler pump system of air and operate system according to manufacturer instructions. Use water to purge the pump system of fluid after each use to prevent particles from settling in the pump system or associated phantom.

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

Stir before each use, as particle separation may occur during prolonged storage. Between uses, store in the original bottle with the lid tightly sealed. The fluids have been formulated to prevent clumping of particulates, and a preservative has been added to the fluid to prevent bacterial growth during the lifespan of the product if stored and used as instructed.

WARRANTY

All standard CIRS products and accessories are warranted by CIRS against defects in material and workmanship for a period as specified below. During the warranty period, the manufacturer will repair or, at its option, replace, at no charge, a product containing such defect provided it is returned, transportation prepaid, to the manufacturer. Products repaired in warranty will be returned transportation prepaid.

There are no warranties, expressed or implied, including without limitation any implied warranty of merchantability or fitness, which extend beyond the description on the face hereof. This expressed warranty excludes coverage of, and does not provide relief for, incidental or consequential damages of any kind or nature, including but not limited to loss of use, loss of sales or inconvenience. The exclusive remedy of the purchaser is limited to repair, recalibration, or replacement of the product at manufacturer's option.

This warranty does not apply if the product, as determined by the manufacturer, is defective because of normal wear, accident, misuse, or modification.

NON-WARRANTY SERVICE

If repairs or replacement not covered by this warranty are required, a repair estimate will be submitted for approval before proceeding with said repair or replacement.

RETURNS

If you are not satisfied with your purchase for any reason, please contact your local distributor prior to returning the product. Visit <https://www.cirsinc.com/distributors/> to find your local distributor. If you purchased your product direct through CIRS, call Customer Service at 800-617-1177, email rma@cirsinc.com, or fax an RMA request form to 757-857-0523. CIRS staff will attempt to remedy the issue via phone or email as soon as possible. If unable to correct the problem, a return material authorization (RMA) number will be issued. Non-standard or "customized" products may not be returned for refund or exchange unless such product is deemed by CIRS not to comply with documented order specifications. You must return the product to CIRS within 30 calendar days of the issuance of the RMA. All returns should be packed in the original cases and or packaging and must include any accessories, manuals and documentation that shipped with the product. The RMA number must be clearly indicated on the outside of each returned package. CIRS recommends that you use a carrier that offers shipment tracking for all returns and insure the full value of your package so that you are completely protected if the shipment is lost or damaged in transit. If you choose not to use a carrier that offers tracking or insure the product, you will be responsible for any loss or damage to the product during shipping. CIRS will not be responsible for lost or damaged return shipments. Return freight and insurance is to be pre-paid.

WITH RMA NUMBER, ITEMS MAY BE RETURNED TO:

CIRS
Receiving
900 Asbury Ave,
Norfolk, Virginia, 23513 USA

PRODUCT	WARRANTY PERIOD
Model 769DF - Doppler Fluid	12 Months

CIRS

**COMPUTERIZED IMAGING
REFERENCE SYSTEMS, INC.**

900 Asbury Ave
Norfolk, Virginia 23513 USA

Toll Free: 800.617.1177

Tel: 757.855.2765

Fax: 757.857.0523

Email admin@cirsinc.com

www.cirsinc.com

Technical Assistance

1.800.617.1177

