CaliberMRI

Map Beyond the Known

Go Against the Flow with the Ultimate ADC Standardization Phantom

Incredible insights. Beautiful simplicity. Invariably reliable.
Standardize diffusion-weighted imaging with confidence.

Discover the CMRI Diffusion Phantom

Proudly developed in collaboration with NIST, QIBA, & NCI

www.qmri.com | +1-720-828-QMRI | Boulder, Colorado

Rev C | September 2021

Know the Diffusion Specs

Contains the Liquid Crystal MR-Readable Thermometer, developed in collaboration with NIST. This ultimate, much-anticipated standardization thermometry is capable of **standardizing between 15°C and 24°C. No ice bath necessary!**

Contains **ten 30 mL vials filled with NIST traceable aqueous PVP solutions** at varying concentrations from **10% (1.551 10^{-3} mm^2/s, 20°C, 3.0 T) up to 50% (0.267 10^{-3} mm^2/s, 20°C, 3.0 T) w/w** so users can standardize ADC measurements accurately and precisely.

Contains **three 30 mL distilled H_2O vials for water reference (2.000 10^{-3} mm^2/s, 20°C, 3.0 T)** and **5 mL H_2O vials** that extend above the ten 30 mL vials that act as **fiducial markers** when examining MR images.

With its **194 mm diameter**, the Diffusion Phantom is capable of fitting in most MRI scanners on the market.

ADC Values

The data listed below is applicable to Diffusion Phantoms with **≥DP128-A-01-041 serial numbers**. Visit www.qmri.com/cmri-product-resources for original data from NIST Boulder and downloadable PDF and Excel data sets.

Table 1. ADC measurements of 0-50% PVP solution recorded at 0°C, 3.0 T by NIST Boulder. NIST traceability pending.

PVP Concentration (%)	ADC Reported (10^{-3} mm^2/s)	ADC Uncertainty (10^{-3} mm^2/s)
0	1.109	0.025
10	0.817	0.019
20	0.579	0.015
30	0.380	0.011
40	0.220	0.007
50	0.110	0.005

Table 2. ADC measurements of 0-50% PVP solution recorded at 16°C by NIST Boulder. NIST traceability pending.

PVP Concentration (%)	ADC Reported (10^{-3} mm^2/s)	ADC Uncertainty (10^{-3} mm^2/s)
0	1.799	0.039
10	1.376	0.031
20	1.047	0.024
30	0.722	0.017
40	0.440	0.012
50	0.231	0.008

Table 3. ADC measurements of 0-50% PVP solution recorded at 18°C, 3.0 T by NIST Boulder. NIST traceability pending.

PVP Concentration (%)	ADC Reported (10^{-3} mm^2/s)	ADC Uncertainty (10^{-3} mm^2/s)
0	1.898	0.041
10	1.462	0.032
20	1.112	0.025
30	0.760	0.018
40	0.471	0.012
50	0.246	0.008

Table 4. ADC measurements of 0-50% PVP solution recorded at 20°C, 3.0 T by NIST Boulder. NIST traceability pending.

PVP Concentration (%)	ADC Reported (10^{-3} mm^2/s)	ADC Uncertainty (10^{-3} mm^2/s)
0	2.000	0.043
10	1.551	0.034
20	1.183	0.027
30	0.832	0.020
40	0.507	0.013
50	0.267	0.008

Table 5. ADC measurements of 0-50% PVP solution recorded at 22°C, 3.0 T by NIST Boulder. NIST traceability pending.

PVP Concentration (%)	ADC Reported (10^{-3} mm^2/s)	ADC Uncertainty (10^{-3} mm^2/s)
0	2.106	0.045
10	1.640	0.036
20	1.258	0.028
30	0.886	0.021
40	0.545	0.014
50	0.293	0.009

Table 6. ADC measurements of 0-50% PVP solution recorded at 24°C, 3.0 T by NIST Boulder. NIST traceability pending.

PVP Concentration (%)	ADC Reported (10^{-3} mm^2/s)	ADC Uncertainty (10^{-3} mm^2/s)
0	2.232	0.048
10	1.742	0.038
20	1.322	0.029
30	0.929	0.022
40	0.584	0.015
50	0.323	0.009

Table 7. ADC measurements of 0-50% PVP solution recorded at 26°C, 3.0 T by NIST Boulder. NIST traceability pending.

PVP Concentration (%)	ADC Reported (10^{-3} mm^2/s)	ADC Uncertainty (10^{-3} mm^2/s)
0	2.335	0.050
10	1.825	0.039
20	1.390	0.031
30	0.989	0.023
40	0.625	0.016
50	0.352	0.010

Visit www.qmri.com/cmri-product-resources to view and download previous and current ADC measurements in PDF and Excel formats.

You will also find T_1 and T_2 measurements of the Diffusion Phantom's PVP solutions.