



TECHNICAL NOTE

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MARKETS

SUBJECT: Densities and Characteristics of Materials used in Standard Imaging Products

The following information is provided as a service to our users and customers:

The table below lists many of the materials used in Standard Imaging products such as Exradin Ion Chambers and the Lucy 3D QA Phantom.

Please note that all parameters are nominal, theoretical values and are subject to change without notice.

Material	Equivalency	Physical Density [g/cm ³]	Relative Electron Density to Water	Color of Material
A150 - Exradin Shonka Conductive Plastic	Tissue	1.11	1.10	Black
B100 - Exradin Shonka Conductive Plastic	Bone	1.42	1.07	Black
C552 - Exradin Shonka Conductive Plastic	Air	1.76	1.58	Black
D400 - Exradin Shonka Conductive Plastic	Polystyrene	1.16	1.13	Black
Blue Water - Standard Imaging Plastic	Water	1.09	1.05	Bright blue
Med-Cal Virtual Water™ Plastic ¹	Water	1.04	1.01	Reddish brown
IMRT Phantom Lung Foam Insert ¹	Lung	0.28	0.26	Yellowish gray
Delrin (POM) ¹	n/a	1.43	1.37	White or black
Acrylic (PMMA) ¹	n/a	1.19	1.16	Clear
Polycarbonate (Lexan) ¹	n/a	1.20	1.14	Clear or black
Teflon, Virgin Electrical Grade ¹	n/a	2.20	1.90	White
Phenolic, XXX Grade 2 ¹	n/a	1.35	n/a	Dark gray
CIRS Cortical Bone ¹	Cortical Bone	1.91	1.78	Warm light gray
CIRS Trabecular Bone ¹	Trabecular Bone	1.20	1.16	Warm gray
CIRS Adipose Fat ¹	Adipose Fat	0.94	0.93	Muted pink

¹ These are not Standard Imaging manufactured or controlled materials. Virtual Water™ is a trademark of Med-Cal.

Percent Element by Mass/Weight

Material	Hydrogen	Carbon	Nitrogen	Oxygen	Fluorine	Calcium	Titanium
A150	10.13 %	77.53 %	3.50 %	5.24 %	1.73 %	1.86 %	---
B100	6.54 %	54.04 %	2.53 %	2.90 %	16.54 %	17.45 %	---
C552	2.52 %	50.01 %	---	---	47.47 %	---	---
D400	7.90 %	92.10 %	---	---	---	---	---
Blue Water	7.45 %	86.42 %	0.42 %	2.86 %	---	---	2.85 %