



# Tissue Equivalent Materials

## The Original Tissue Equivalents

The original tissue equivalent materials.

Suitable for both kV and MV energies.

Available in many sizes and shapes, including molded or machined cavities to house dosimeters.

Composition, density and electron density shown overleaf for;

- Water equivalent (WT1)
- Adipose (AP7)
- Breast (BR12)
- Hard Cortical Bone (SB5)
- Inner Bone (IB7)
- Rib or Average bone (RB2)
- Lung (LN10)
- Soft Tissue (ST1)
- Kidney (KD1)
- Liver (LV1)

Please contact us for more details and pricing.





# Tissue Equivalent Materials

## Elemental Composition (by mass) and Density

### Water Equivalent (WT1).

| H     | C      | N     | O      | Cl    | Ca    | Density               | *Electron<br>Density(m-3x10 <sup>26</sup> ) |
|-------|--------|-------|--------|-------|-------|-----------------------|---|
| 8.41% | 67.97% | 2.27% | 18.87% | 0.13% | 2.35% | 1.00g/cm <sup>3</sup> | 3310  |

### Adipose (AP7).

| H     | C      | N     | O      | Cl    | F     | Density               | *Electron<br>Density(m-3x10 <sup>26</sup> ) |
|-------|--------|-------|--------|-------|-------|-----------------------|---|
| 8.36% | 69.14% | 2.36% | 16.93% | 0.14% | 3.07% | 0.92g/cm <sup>3</sup> | 2990  |

### Breast (BR12).

| H     | C      | N     | O      | Cl    | Ca    | Density               | *Electron<br>Density(m-3x10 <sup>26</sup> ) |
|-------|--------|-------|--------|-------|-------|-----------------------|---|
| 8.68% | 69.95% | 2.36% | 17.91% | 0.14% | 0.95% | 0.97g/cm <sup>3</sup> | 3170  |

### Hard Cortical Bone (SB5).

| H     | C      | N     | O      | Cl    | Ca     | Density               | *Electron<br>Density(m-3x10 <sup>26</sup> ) |
|-------|--------|-------|--------|-------|--------|-----------------------|---|
| 2.60% | 30.58% | 0.98% | 38.93% | 0.06% | 26.85% | 1.84g/cm <sup>3</sup> | 5770  |

### Inner Bone (IB7).

Inner bone represents an average composition of hard bone and red marrow found in spongiosa structures and is based upon the ratio of 22.4% hard bone to 77.6% soft tissue (WT1). Density 1.18g/cm<sup>3</sup>.

### Rib or Average bone (RB2).

Average bone is an average composition inclusive of hard or cortical bone, spongiosa and red marrow in the ratio of 46.5% hard bone to 53.5% soft tissue (WT1). Density 1.40g / cm<sup>3</sup>

### Lung (LN10).

Composition as WT1. Density: 0.25 – 0.35 g/cm<sup>3</sup> \*Electron Density (m-3x10<sup>26</sup>) 1000

### Soft Tissue (ST), Kidney (KD1) & Liver (LV1).

As WT1.

\* As stated in ICRU Report 44