

# RS-500 The Lawrence Livermore Realistic Phantom



## Introduction

The Lawrence Livermore Realistic Phantom was developed under the direction of the US Department of Energy, primarily as a reference standard for the in-vivo counting of emissions from low-energy transuranic nuclides. The organs of interest are the lungs, liver and lymph nodes. Each of these may be radioactive or inert. These organs are accommodated in a male thorax generally similar to average adult males.

The Livermore phantom contains a synthetic bone skeleton molded within a soft-tissue-equivalent material. The organs are located in an internal cavity with a separate torso cover that closes the phantom. Anterior sections of ribs and the sternum are molded into this cover. Soft-tissue-equivalent blocks are used to position the organs and fill significant air spaces, providing continuity of the soft-tissues throughout the phantom. The phantom is shipped assembled with inert organs. Any or all of these organs can be replaced with radioactive organs, which are shipped in separate packages.