



## MicroShield<sup>®</sup> 7.02

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MicroShield<sup>®</sup> 7.02 is a comprehensive photon/gamma ray shielding and dose assessment program. It is widely used for designing shields, estimating source strength from radiation measurements, minimizing exposure to people, and teaching shielding principles. MicroShield<sup>®</sup> is useful to health physicists, waste managers, and design engineers, and radiological engineers, among others. Its use requires a basic knowledge of radiation and shielding principles.

MicroShield<sup>®</sup> 7.02 features ORIGEN import capability, Microsoft Word<sup>®</sup> and Microsoft Excel<sup>®</sup> export capability, and an improved look and feel. MicroShield<sup>®</sup> comes with all the required reference data needed to model and execute many shielding problems.

Here are some of MicroShield's<sup>®</sup> specific features:

- Sixteen geometries that accommodate offset dose points and as many as ten standard shields plus source self-shielding and cylinder cladding.
- The geometry display for entry is re-scaled as dimensions are entered. Dimensional data are accepted in meters, centimeters, feet, or inches. Display can be rotated in 3-D for viewing and printing.
- Library data (radionuclides, attenuation, buildup, and dose conversion) reflect standard data from RSICC, ANS, and ICRP.
- Provides the ability to access and use the Optional ICRP-38 based Nuclide Library.
- MicroShield<sup>®</sup> will keep track of which library is used in an analysis or the creation of a source file.
- Buildup and uncollided results are both automatically and simultaneously calculated.
- Provides the ability to design and save up to eight custom materials for any case to add to the twelve built-in materials.
- Sources may be created and saved and moved among cases, either as nuclides or energies, and as concentrations or totals. Several photon grouping methods are provided including custom (user defined) grouping methods.
- Source decay can be calculated with daughter products generated.
- As many as twenty-five energy groups (with an energy range of 15 keV to 10 MeV) may be used; input may be concentration or totals.
- Sensitivity of exposure rate to time, source dimension, shield thickness, or distance can be investigated. Integration conversion verification can be conducted with sensitivity to quadrature order.
- Decay heat/energy can be calculated.
- Improved flexibility for users to control input and output units, case file saving, printing, and emailing, export of results including graphs to office documents.
- Provides the ability to define multiple (up to six) dose points for a case for almost all geometries.

MicroShield<sup>®</sup> 7.02 is fully interactive and utilizes extensive input error checking. Integrated tools provide graphing of results, material and source file creation, source inference with decay (dose-to-Ci calculations accounting for decay and daughter buildup), projection of exposure rate versus time as a result of decay, access to material and nuclide data and decay heat calculations.

MicroShield<sup>®</sup> 7.02 is compatible with Microsoft Windows<sup>®</sup> 2000 and XP. For outputting results to Microsoft Excel<sup>®</sup> and Word<sup>®</sup>, Microsoft Excel<sup>®</sup> and Word<sup>®</sup> 2000/2002/2003 are required. Complete installation may require up to 9MB of hard disk space.

License Type: Single User