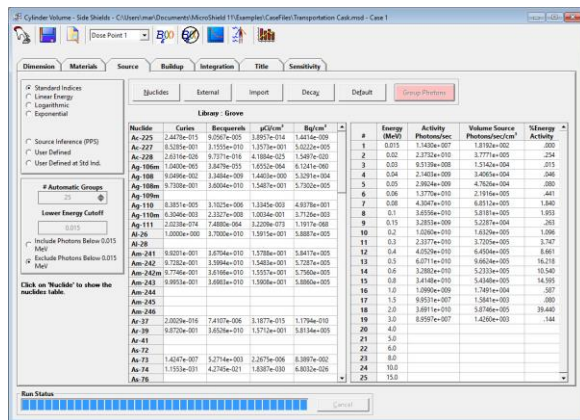


MicroShield® Version 11

MicroShield® v11 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® is useful to health physicists, waste managers, and design engineers, and radiological engineers, among others. One of the primary advantages of this software is that it only requires a basic knowledge of radiation and shielding principles. MicroShield® v11 includes the addition of the International Commission on Radiological Protection (ICRP) Publication 74 Ambient Dose Equivalent and Directional Dose Equivalent dose rates as well as:

- Multilayer buildup factors
- Buildup factor sensitivity functionality
- Microsoft Windows® 10 compatibility
- Improved user interface with individual color coding of shields
- Ability to export results using any version Microsoft Office®
- Improved source importation features including Becquerels
- Addition of 47 custom materials based on NIST specifications



Nuclide	Concn.	Becquerels	μCi/cm ³	Bq/cm ³	#	Energy (MeV)	Activity Photons/sec	Volume Source Photons/cm ²	%Energy Activity
Au-225	2.447e-015	9.207e-005	1.897e-014	1.441e-009	1	0.015	1.441e+007	1.813e+002	260
Au-227	8.319e-001	1.715e+010	1.197e+001	3.422e+005	2	0.52	2.372e+010	1.777e+005	254
Au-228	2.819e-008	9.717e+010	4.188e+003	3.549e+008	3	0.51	9.517e+008	1.514e+004	215
Ag-106m	1.640e-005	3.847e+015	1.855e+004	8.124e+000	4	0.58	2.483e+009	1.406e+004	246
Ag-108	6.599e-002	1.818e+009	1.482e+001	3.129e+004	5	0.05	2.952e+009	4.763e+004	300
Ag-108m	3.759e-001	3.620e+010	1.548e+001	3.755e+005	6	0.08	1.377e+010	2.191e+005	447
Ag-109m	3.881e-005	1.782e+006	1.334e+003	4.837e+001	7	0.08	4.837e+006	4.837e+005	1.843
Ag-110m	6.504e-002	2.332e+008	1.003e+001	3.712e+003	8	0.1	3.655e+010	3.819e+005	1.953
Ag-111	2.222e-014	7.818e-004	3.228e-007	1.791e-008	9	0.5	3.285e+009	5.208e+004	263
Al-26	1.0000e+000	3.700e+010	1.591e+001	3.883e+005	10	0.2	1.030e+010	1.632e+005	1.096
Am-241	8.8201e-001	3.4754e+010	1.778e+001	3.8474e+005	11	0.5	2.877e+010	5.709e+005	2.747
Am-241	8.8201e-001	3.4754e+010	1.778e+001	3.8474e+005	12	0.4	4.659e+010	8.495e+005	4.061
Am-242	8.7382e-001	3.9944e+010	1.548e+001	3.7374e+005	13	0.5	6.071e+010	1.062e+006	16.219
Am-243m	1.7746e-001	3.818e+010	1.555e+001	3.7964e+005	14	0.6	3.263e+010	5.273e+005	35.840
Am-243	8.9951e-001	3.6851e+010	1.938e+001	3.5880e+005	15	0.8	3.448e+010	1.4348e+006	14.591
Am-244	Am-245				16	1.0	1.069e+009	1.749e+004	367
Am-245					17	1.5	8.951e+007	1.564e+003	899
Am-246	2.8202e-016	7.4117e-006	3.1077e-011	1.1754e-010	18	2.0	3.691e+010	3.874e+005	39.440
Am-248	6.8720e-001	3.6524e+010	1.9712e+001	3.8154e+005	19	3.0	8.997e+007	1.426e+003	744
Am-249					20	4.0			
Am-250					21	5.0			
Am-251					22	6.0			
Am-252					23	8.0			
Am-254	1.4347e-007	5.2714e+003	2.2674e-006	8.3897e-002	24	10.0			
Am-256	1.1551e-011	4.2752e-021	1.6897e-030	6.8824e-026	25	15.0			

MicroShield® v11 includes updates to the

- Material and Nuclear Data Tool
- Validation Tool
- Decay Heat Tool

As always, MicroShield® comes with all the required reference data needed to model and execute many shielding problems

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MicroShield® Version 11

Here are some of MicroShield's® specific features:

- Fully compatible with Microsoft Windows® 10, 8/8.1, 7, Vista® and XP®.
- Ability to export results into Microsoft Office® applications.
- Ability to utilize international numerical formats (decimal commas, etc.).
- Current industry standard dose conversion factors including ICRP-116, ICRP-74, ICRP-51 as well as ANSI/ANS-6.1.1.
- 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.
- Library data (radionuclides, attenuation, buildup, and dose conversion) reflect standard data from industry standard radiation libraries ICRP-38 and ICRP-107 as well as ANSI/ANS standards and RSICC publications.
- Buildup and uncollided results are both automatically and simultaneously calculated.
- 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 using the same algorithms as found in the RadDecay® software

MicroShield® v11 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® v11 is compatible with Microsoft Windows®. Complete installation may require up to 30MB of hard disk space.

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