

MicroShield 6.20 (6.20-0000)
Duratek Inc.

Page : 1
DOS File : Th-232c Unshielded Shallow Surf.ms6
Run Date : February 21, 2008
Run Time : 3:26:52 PM
Duration : 00:00:00

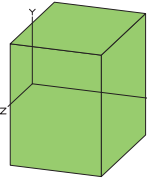
File Ref: _____
Date: _____
By: _____
Checked: _____

Case Title: Hematite
Description: Ind. Occ., Infinite Slab Unshielded Shallow Surf - Th-232+C
Geometry: 16 - Infinite Slab

Source Dimensions
Thick 15.0 cm 5.9 in

Dose Points

	<u>X</u>	<u>Y</u>	<u>Z</u>
# 1	115 cm 3 ft 9.3 in	0 cm 0.0 in	0 cm 0.0 in



Shields

<u>Shield Name</u>	<u>Dimension</u>	<u>Material</u>	<u>Density</u>
Source	Infinite	Concrete	1.6
Air Gap		Air	0.00122

Source Input
Grouping Method : Standard Indices
Number of Groups : 25
Lower Energy Cutoff : 0.015
Photons < 0.015 : Included
Library : Grove

<u>Nuclide</u>	<u>μCi/cm³</u>	<u>Bq/cm³</u>
Ac-228	9.7312e-001	3.6005e+004
Bi-212	9.5964e-001	3.5507e+004
Pb-212	9.5964e-001	3.5507e+004
Po-212	6.1484e-001	2.2749e+004
Po-216	9.5965e-001	3.5507e+004
Ra-224	9.5965e-001	3.5507e+004
Ra-228	9.7312e-001	3.6005e+004
Rn-220	9.5965e-001	3.5507e+004
Th-228	9.5972e-001	3.5510e+004
Th-232	1.0000e+000	3.7000e+004
Tl-208	3.4480e-001	1.2758e+004

Buildup
The material reference is : Air Gap

Results

<u>Energy</u> <u>MeV</u>	<u>Activity</u> <u>photons/sec</u>	<u>Fluence Rate</u>		<u>Exposure Rate</u>	
		<u>MeV/cm²/sec</u> <u>No Buildup</u>	<u>MeV/cm²/sec</u> <u>With Buildup</u>	<u>mR/hr</u> <u>No Buildup</u>	<u>mR/hr</u> <u>With Buildup</u>
0.015	2.933e+04	1.008e+01	1.171e+01	8.642e-01	1.004e+00
0.04	3.631e+02	7.084e+00	2.680e+01	3.133e-02	1.185e-01
0.06	2.508e+02	1.553e+01	1.470e+02	3.085e-02	2.921e-01
0.08	1.533e+04	1.749e+03	2.131e+04	2.768e+00	3.372e+01
0.1	2.551e+03	4.290e+02	5.468e+03	6.563e-01	8.365e+00
0.15	1.513e+03	4.664e+02	5.139e+03	7.680e-01	8.463e+00
0.2	1.931e+04	8.894e+03	7.423e+04	1.570e+01	1.310e+02
0.3	9.354e+03	7.529e+03	5.009e+04	1.428e+01	9.502e+01
0.4	8.514e+02	1.021e+03	5.303e+03	1.989e+00	1.033e+01
0.5	4.953e+03	8.109e+03	3.561e+04	1.592e+01	6.989e+01
0.6	1.130e+04	2.389e+04	8.887e+04	4.663e+01	1.735e+02
0.8	1.137e+04	3.613e+04	1.106e+05	6.872e+01	2.104e+02
1.0	2.096e+04	9.148e+04	2.397e+05	1.686e+02	4.419e+02

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<u>Energy</u> <u>MeV</u>	<u>Activity</u> <u>photons/sec</u>	<u>Fluence Rate</u> <u>MeV/cm²/sec</u> <u>No Buildup</u>	<u>Fluence Rate</u> <u>MeV/cm²/sec</u> <u>With Buildup</u>	<u>Exposure Rate</u> <u>mR/hr</u> <u>No Buildup</u>	<u>Exposure Rate</u> <u>mR/hr</u> <u>With Buildup</u>
1.5	4.812e+03	3.749e+04	7.650e+04	6.308e+01	1.287e+02
2.0	1.083e+02	1.267e+03	2.275e+03	1.959e+00	3.517e+00
3.0	1.273e+04	2.608e+05	4.077e+05	3.538e+02	5.532e+02
TOTALS:	1.451e+05	4.793e+05	1.123e+06	7.558e+02	1.869e+03