

Symbol of radionuclide	Element and atomic number	A ₁ (TBq)	A ₁ (Ci) ^b	A ₂ (TBq)	A ₂ (Ci) ^b	Specific activity	
						(TBq/g)	(Ci/g)
U (nat)	.....	Unlimited	Unlimited	Unlimited	Unlimited	2.6×10 ⁻⁸	7.1×10 ⁻⁷
U (enriched to 20% or less)(g)	.....	Unlimited	Unlimited	Unlimited	Unlimited	see § 173.434	see § 173.434
U (dep)	.....	Unlimited	Unlimited	Unlimited	Unlimited	see § 173.434	see § 173.434
V-48	Vanadium (23)	4.0×10 ⁻¹	1.1×10 ¹	4.0×10 ⁻¹	1.1×10 ¹	6.3×10 ³	1.7×10 ⁵
V-49	.....	4.0×10 ¹	1.1×10 ³	4.0×10 ¹	1.1×10 ³	3.0×10 ²	8.1×10 ³
W-178 (a)	Tungsten (74)	9.0	2.4×10 ²	5.0	1.4×10 ²	1.3×10 ³	3.4×10 ⁴
W-181	.....	3.0×10 ¹	8.1×10 ²	3.0×10 ¹	8.1×10 ²	2.2×10 ²	6.0×10 ³
W-185	.....	4.0×10 ¹	1.1×10 ³	8.0×10 ⁻¹	2.2×10 ¹	3.5×10 ²	9.4×10 ³
W-187	.....	2.0	5.4×10 ¹	6.0×10 ⁻¹	1.6×10 ¹	2.6×10 ⁴	7.0×10 ⁵
W-188 (a)	.....	4.0×10 ⁻¹	1.1×10 ¹	3.0×10 ⁻¹	8.1	3.7×10 ²	1.0×10 ⁴
Xe-122 (a)	Xenon (54)	4.0×10 ⁻¹	1.1×10 ¹	4.0×10 ⁻¹	1.1×10 ¹	4.8×10 ⁴	1.3×10 ⁶
Xe-123	.....	2.0	5.4×10 ¹	7.0×10 ⁻¹	1.9×10 ¹	4.4×10 ⁵	1.2×10 ⁷
Xe-127	.....	4.0	1.1×10 ²	2.0	5.4×10 ¹	1.0×10 ³	2.8×10 ⁴
Xe-131m	.....	4.0×10 ¹	1.1×10 ³	4.0×10 ¹	1.1×10 ³	3.1×10 ³	8.4×10 ⁴
Xe-133	.....	2.0×10 ¹	5.4×10 ²	1.0×10 ¹	2.7×10 ²	6.9×10 ³	1.9×10 ⁵
Xe-135	.....	3.0	8.1×10 ¹	2.0	5.4×10 ¹	9.5×10 ⁴	2.6×10 ⁶
Y-87 (a)	Yttrium (39)	1.0	2.7×10 ¹	1.0	2.7×10 ¹	1.7×10 ⁴	4.5×10 ⁵
Y-88	.....	4.0×10 ⁻¹	1.1×10 ¹	4.0×10 ⁻¹	1.1×10 ¹	5.2×10 ²	1.4×10 ⁴
Y-90	.....	3.0×10 ⁻¹	8.1	3.0×10 ⁻¹	8.1	2.0×10 ⁴	5.4×10 ⁵
Y-91	.....	6.0×10 ⁻¹	1.6×10 ¹	6.0×10 ⁻¹	1.6×10 ¹	9.1×10 ²	2.5×10 ⁴
Y-91m	.....	2.0	5.4×10 ¹	2.0	5.4×10 ¹	1.5×10 ⁶	4.2×10 ⁷
Y-92	.....	2.0×10 ⁻¹	5.4	2.0×10 ⁻¹	5.4	3.6×10 ⁵	9.6×10 ⁶
Y-93	.....	3.0×10 ⁻¹	8.1	3.0×10 ⁻¹	8.1	1.2×10 ⁵	3.3×10 ⁶
Yb-169	Ytterbium (70)	4.0	1.1×10 ²	1.0	2.7×10 ¹	8.9×10 ²	2.4×10 ⁴
Yb-175	.....	3.0×10 ¹	8.1×10 ²	9.0×10 ⁻¹	2.4×10 ¹	6.6×10 ³	1.8×10 ⁵
Zn-65	Zinc (30)	2.0	5.4×10 ¹	2.0	5.4×10 ¹	3.0×10 ²	8.2×10 ³
Zn-69	.....	3.0	8.1×10 ¹	6.0×10 ⁻¹	1.6×10 ¹	1.8×10 ⁶	4.9×10 ⁷
Zn-69m (a)	.....	3.0	8.1×10 ¹	6.0×10 ⁻¹	1.6×10 ¹	1.2×10 ⁵	3.3×10 ⁶
Zr-88	Zirconium (40)	3.0	8.1×10 ¹	3.0	8.1×10 ¹	6.6×10 ²	1.8×10 ⁴
Zr-93	.....	Unlimited	Unlimited	Unlimited	Unlimited	9.3×10 ⁻⁵	2.5×10 ⁻³
Zr-95 (a)	.....	2.0	5.4×10 ¹	8.0×10 ⁻¹	2.2×10 ¹	7.9×10 ²	2.1×10 ⁴
Zr-97 (a)	.....	4.0×10 ⁻¹	1.1×10 ¹	4.0×10 ⁻¹	1.1×10 ¹	7.1×10 ⁴	1.9×10 ⁶

^aA₁ and/or A₂ values include contributions from daughter nuclides with half-lives less than 10 days.
^bThe values of A₁ and A₂ in curies (Ci) are approximate and for information only; the regulatory standard units are Terabecquerels (TBq), (see § 171.10).
^cThe quantity may be determined from a measurement of the rate of decay or a measurement of the radiation level at a prescribed distance from the source.
^dThese values apply only to compounds of uranium that take the chemical form of UF₆, UO₂F₂ and UO₂(NO₃)₂ in both normal and accident conditions of transport.
^eThese values apply only to compounds of uranium that take the chemical form of UO₃, UF₄, UCl₄ and hexavalent compounds in both normal and accident conditions of transport.
^fThese values apply to all compounds of uranium other than those specified in notes (d) and (e) of this table.
^gThese values apply to unirradiated uranium only.
^hA₁ = 0.1 TBq (2.7 Ci) and A₂ = 0.001 TBq (0.027 Ci) for Cf-252 for domestic use.
ⁱA₂ = 0.74 TBq (20 Ci) for Mo-99 for domestic use.

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§ 173.436 Exempt material activity concentrations and exempt consignment activity limits for radionuclides.

The Table of Exempt material activity concentrations and exempt consignment activity limits for radionuclides is as follows:

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Ac-225	Actinium (89)	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁴	2.7×10 ⁻⁷
Ac-227	.....	1.0×10 ⁻¹	2.7×10 ⁻¹²	1.0×10 ³	2.7×10 ⁻⁸
Ac-228	.....	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Ag-105	Silver (47)	1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁶	2.7×10 ⁻⁵
Ag-108m (b)	.....	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Ag-110m	.....	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Ag-111	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Al-26	Aluminum (13)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Am-241	Americium (95)	1.0	2.7x10 ⁻¹¹	1.0x10 ⁴	2.7x10 ⁻⁷
Am-242m (b)	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ⁴	2.7x10 ⁻⁷
Am-243	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
Ar-37	Argon (18)	1.0x10 ⁶	2.7x10 ⁻⁵	1.0x10 ⁸	2.7x10 ⁻³
Ar-39	.....	1.0x10 ⁷	2.7x10 ⁻⁴	1.0x10 ⁴	2.7x10 ⁻⁷
Ar-41	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁹	2.7x10 ⁻²
As-72	Arsenic (33)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
As-73	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
As-74	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
As-76	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
As-77	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
At-211	Astatine (85)	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Au-193	Gold (79)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Au-194	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Au-195	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Au-198	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Au-199	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Ba-131	Barium (56)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Ba-133	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Ba-133m	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Ba-140 (b)	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Be-7	Beryllium (4)	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Be-10	.....	1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁶	2.7x10 ⁻⁵
Bi-205	Bismuth (83)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Bi-206	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Bi-207	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Bi-210	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Bi-210m	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Bi-212 (b)	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Bk-247	Berkelium (97)	1.0	2.7x10 ⁻¹¹	1.0x10 ⁴	2.7x10 ⁻⁷
Bk-249	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Br-76	Bromine (35)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Br-77	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Br-82	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
C-11	Carbon (6)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
C-14	.....	1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁷	2.7x10 ⁻⁴
Ca-41	Calcium (20)	1.0x10 ⁵	2.7x10 ⁻⁶	1.0x10 ⁷	2.7x10 ⁻⁴
Ca-45	.....	1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁷	2.7x10 ⁻⁴
Ca-47	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Cd-109	Cadmium (48)	1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁶	2.7x10 ⁻⁵
Cd-113m	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Cd-115	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Cd-115m	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Ce-139	Cerium (58)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Ce-141	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Ce-143	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Ce-144 (b)	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Cf-248	Californium (98)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Cf-249	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
Cf-250	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Cf-251	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
Cf-252	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Cf-253	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Cf-254	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
Cl-36	Chlorine (17)	1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁶	2.7x10 ⁻⁵
Cl-38	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Cm-240	Curium (96)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Cm-241	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Cm-242	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Cm-243	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ⁴	2.7x10 ⁻⁷
Cm-244	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Cm-245	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
Cm-246	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
Cm-247	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ⁴	2.7x10 ⁻⁷
Cm-248	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
Co-55	Cobalt (27)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Co-56	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Co-57	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Co-58	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Co-58m		1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁷	2.7x10 ⁻⁴
Co-60		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Cr-51	Chromium (24)	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Cs-129	Cesium (55)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Cs-131		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Cs-132		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Cs-134		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Cs-134m		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁵	2.7x10 ⁻⁶
Cs-135		1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁷	2.7x10 ⁻⁴
Cs-136		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Cs-137 (b)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Cu-64	Copper (29)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Cu-67		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Dy-159	Dysprosium (66)	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Dy-165		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Dy-166		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Er-169	Erbium (68)	1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁷	2.7x10 ⁻⁴
Er-171		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Eu-147	Europlium (63)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Eu-148		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Eu-149		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Eu-150 (short lived)		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Eu-150 (long lived)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Eu-152		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Eu-152m		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Eu-154		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Eu-155		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Eu-156		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
F-18	Fluorine (9)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Fe-52	Iron (26)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Fe-55		1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁶	2.7x10 ⁻⁵
Fe-59		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Fe-60		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Ga-67	Gallium (31)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Ga-68		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Ga-72		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Gd-146	Gadolinium (64)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Gd-148		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Gd-153		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Gd-159		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Ge-68	Germanium (32)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Ge-71		1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁸	2.7x10 ⁻³
Ge-77		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Hf-172	Hafnium (72)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Hf-175		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Hf-181		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Hf-182		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Hg-194	Mercury (80)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Hg-195m		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Hg-197		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Hg-197m		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Hg-203		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Ho-166	Holmium (67)	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁵	2.7x10 ⁻⁶
Ho-166m		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
I-123	Iodine (53)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
I-124		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
I-125		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
I-126		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
I-129		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
I-131		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
I-132		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
I-133		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
I-134		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
I-135		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
In-111	Indium (49)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
In-113m		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
In-114m		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
In-115m		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Ir-189	Iridium (77)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Ir-190		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Ir-192		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Ir-194		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁵	2.7×10 ⁻⁶
K-40	Potassium (19)	1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁶	2.7×10 ⁻⁵
K-42		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁶	2.7×10 ⁻⁵
K-43		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Kr-81	Krypton (36)	1.0×10 ⁴	2.7×10 ⁻⁷	1.0×10 ⁷	2.7×10 ⁻⁴
Kr-85		1.0×10 ⁵	2.7×10 ⁻⁶	1.0×10 ⁴	2.7×10 ⁻⁷
Kr-85m		1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ¹⁰	2.7×10 ⁻¹
Kr-87		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁹	2.7×10 ⁻²
La-137	Lanthanum (57)	1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ⁷	2.7×10 ⁻⁴
La-140		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁵	2.7×10 ⁻⁶
Lu-172	Lutetium (71)	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Lu-173		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁷	2.7×10 ⁻⁴
Lu-174		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁷	2.7×10 ⁻⁴
Lu-174m		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁷	2.7×10 ⁻⁴
Lu-177		1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ⁷	2.7×10 ⁻⁴
Mg-28	Magnesium (12)	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁵	2.7×10 ⁻⁶
Mn-52	Manganese (25)	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁵	2.7×10 ⁻⁶
Mn-53		1.0×10 ⁴	2.7×10 ⁻⁷	1.0×10 ⁹	2.7×10 ⁻²
Mn-54		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Mn-56		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁵	2.7×10 ⁻⁶
Mo-93	Molybdenum (42)	1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ⁸	2.7×10 ⁻³
Mo-99		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁶	2.7×10 ⁻⁵
N-13	Nitrogen (7)	1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁹	2.7×10 ⁻²
Na-22	Sodium (11)	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Na-24		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁵	2.7×10 ⁻⁶
Nb-93m	Niobium (41)	1.0×10 ⁴	2.7×10 ⁻⁷	1.0×10 ⁷	2.7×10 ⁻⁴
Nb-94		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Nb-95		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Nb-97		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Nd-147	Neodymium (60)	1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁶	2.7×10 ⁻⁵
Nd-149		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁶	2.7×10 ⁻⁵
Ni-59	Nickel (28)	1.0×10 ⁴	2.7×10 ⁻⁷	1.0×10 ⁸	2.7×10 ⁻³
Ni-63		1.0×10 ⁵	2.7×10 ⁻⁶	1.0×10 ⁸	2.7×10 ⁻³
Ni-65		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Np-235	Neptunium (93)	1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ⁷	2.7×10 ⁻⁴
Np-236 (short-lived)		1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ⁷	2.7×10 ⁻⁴
Np-236 (long-lived)		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁵	2.7×10 ⁻⁶
Np-237 (b)		1.0	2.7×10 ⁻¹¹	1.0×10 ³	2.7×10 ⁻⁸
Np-239		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁷	2.7×10 ⁻⁴
Os-185	Osmium (76)	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Os-191		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁷	2.7×10 ⁻⁴
Os-191m		1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ⁷	2.7×10 ⁻⁴
Os-193		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁶	2.7×10 ⁻⁵
Os-194		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁵	2.7×10 ⁻⁶
P-32	Phosphorus (15)	1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ⁵	2.7×10 ⁻⁶
P-33		1.0×10 ⁵	2.7×10 ⁻⁶	1.0×10 ⁸	2.7×10 ⁻³
Pa-230	Protactinium (91)	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Pa-231		1.0	2.7×10 ⁻¹¹	1.0×10 ³	2.7×10 ⁻⁸
Pa-233		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁷	2.7×10 ⁻⁴
Pb-201	Lead (82)	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Pb-202		1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ⁶	2.7×10 ⁻⁵
Pb-203		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁶	2.7×10 ⁻⁵
Pb-205		1.0×10 ⁴	2.7×10 ⁻⁷	1.0×10 ⁷	2.7×10 ⁻⁴
Pb-210 (b)		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁴	2.7×10 ⁻⁷
Pb-212 (b)		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁵	2.7×10 ⁻⁶
Pd-103	Palladium (46)	1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ⁸	2.7×10 ⁻³
Pd-107		1.0×10 ⁵	2.7×10 ⁻⁶	1.0×10 ⁸	2.7×10 ⁻³
Pd-109		1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ⁶	2.7×10 ⁻⁵
Pm-143	Promethium (61)	1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁶	2.7×10 ⁻⁵
Pm-144		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Pm-145		1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ⁷	2.7×10 ⁻⁴
Pm-147		1.0×10 ⁴	2.7×10 ⁻⁷	1.0×10 ⁷	2.7×10 ⁻⁴
Pm-148m		1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Pm-149		1.0×10 ³	2.7×10 ⁻⁸	1.0×10 ⁶	2.7×10 ⁻⁵
Pm-151		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁶	2.7×10 ⁻⁵
Po-210	Polonium (84)	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁴	2.7×10 ⁻⁷
Pr-142	Praseodymium (59)	1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁵	2.7×10 ⁻⁶
Pr-143		1.0×10 ⁴	2.7×10 ⁻⁷	1.0×10 ⁶	2.7×10 ⁻⁵
Pt-188	Platinum (78)	1.0×10 ¹	2.7×10 ⁻¹⁰	1.0×10 ⁶	2.7×10 ⁻⁵
Pt-191		1.0×10 ²	2.7×10 ⁻⁹	1.0×10 ⁶	2.7×10 ⁻⁵
Pt-193		1.0×10 ⁴	2.7×10 ⁻⁷	1.0×10 ⁷	2.7×10 ⁻⁴

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Pt-193m	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Pt-195m	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Pt-197	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Pt-197m	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Pu-236	Plutonium (94)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Pu-237	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Pu-238	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ⁴	2.7x10 ⁻⁷
Pu-239	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ⁴	2.7x10 ⁻⁷
Pu-240	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
Pu-241	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Pu-242	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ⁴	2.7x10 ⁻⁷
Pu-244	.....	1.0	2.7x10 ⁻¹¹	1.0x10 ⁴	2.7x10 ⁻⁷
Ra-223 (b)	Radium (88)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Ra-224 (b)	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Ra-225	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Ra-226 (b)	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Ra-228 (b)	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Rb-81	Rubidium (37)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Rb-83	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Rb-84	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Rb-86	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Rb-87	.....	1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁷	2.7x10 ⁻⁴
Rb(nat)	.....	1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁷	2.7x10 ⁻⁴
Re-184	Rhenium (75)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Re-184m	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Re-186	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Re-187	.....	1.0x10 ⁶	2.7x10 ⁻⁵	1.0x10 ⁹	2.7x10 ⁻²
Re-188	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Re-189	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Re(nat)	.....	1.0x10 ⁶	2.7x10 ⁻⁵	1.0x10 ⁹	2.7x10 ⁻²
Rh-99	Rhodium (45)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Rh-101	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Rh-102	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Rh-102m	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Rh-103m	.....	1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁸	2.7x10 ⁻³
Rh-105	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Rn-222 (b)	Radon (86)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁸	2.7x10 ⁻³
Ru-97	Ruthenium (44)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Ru-103	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Ru-105	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Ru-106 (b)	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
S-35	Sulphur (16)	1.0x10 ⁵	2.7x10 ⁻⁶	1.0x10 ⁸	2.7x10 ⁻³
Sb-122	Antimony (51)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁴	2.7x10 ⁻⁷
Sb-124	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Sb-125	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Sb-126	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Sc-44	Scandium (21)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Sc-46	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Sc-47	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Sc-48	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Se-75	Selenium (34)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Se-79	.....	1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁷	2.7x10 ⁻⁴
Si-31	Silicon (14)	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Si-32	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Sm-145	Samarium (62)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Sm-147	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Sm-151	.....	1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁸	2.7x10 ⁻³
Sm-153	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Sn-113	Tin (50)	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Sn-117m	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Sn-119m	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Sn-121m	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Sn-123	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Sn-125	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Sn-126	.....	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Sr-82	Strontium (38)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Sr-85	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Sr-85m	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Sr-87m	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Sr-89	.....	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Sr-90 (b)	.....	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁴	2.7x10 ⁻⁷

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)
Sr-91		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Sr-92		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
T(H-3)	Tritium (1)	1.0x10 ⁶	2.7x10 ⁻⁵	1.0x10 ⁹	2.7x10 ⁻²
Ta-178 (long-lived)	Tantalum (73)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Ta-179		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Ta-182		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Tb-157	Terbium (65)	1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁷	2.7x10 ⁻⁴
Tb-158		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Tb-160		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Tc-95m	Technetium (43)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Tc-96		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Tc-96m		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Tc-97		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁸	2.7x10 ⁻³
Tc-97m		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Tc-98		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Tc-99		1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁷	2.7x10 ⁻⁴
Tc-99m		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Te-121	Tellurium (52)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Te-121m		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
Te-123m		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Te-125m		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Te-127		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Te-127m		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Te-129		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Te-129m		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Te-131m		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Te-132		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Th-227	Thorium (90)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Th-228 (b)		1.0	2.7x10 ⁻¹¹	1.0x10 ⁴	2.7x10 ⁻⁷
Th-229 (b)		1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
Th-230		1.0	2.7x10 ⁻¹¹	1.0x10 ⁴	2.7x10 ⁻⁷
Th-231		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Th-232		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
Th-234 (b)		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁵	2.7x10 ⁻⁶
Th (nat) (b)		1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
Ti-44	Titanium (22)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
Tl-200	Thallium (81)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Tl-201		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Tl-202		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Tl-204		1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁴	2.7x10 ⁻⁷
Tm-167	Thulium (69)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵
Tm-170		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵
Tm-171		1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁸	2.7x10 ⁻³
U-230 (fast lung absorption) (b),(d)	Uranium (92)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
U-230 (medium lung absorption) (e)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
U-230 (slow lung absorption) (f)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
U-232 (fast lung absorption) (b),(d)		1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
U-232 (medium lung absorption) (e)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
U-232 (slow lung absorption) (f)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
U-233 (fast lung absorption) (d)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
U-233 (medium lung absorption) (e)		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
U-233 (slow lung absorption) (f)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
U-234 (fast lung absorption) (d)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
U-234 (medium lung absorption) (e)		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
U-234 (slow lung absorption) (f)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
U-235 (all lung absorption types) (b),(d),(e),(f)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
U-236 (fast lung absorption) (d)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
U-236 (medium lung absorption) (e)		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶
U-236 (slow lung absorption) (f)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
U-238 (all lung absorption types) (b),(d),(e),(f)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁴	2.7x10 ⁻⁷
U (nat) (b)		1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
U (enriched to 20% or less)(g)		1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
U (dep)		1.0	2.7x10 ⁻¹¹	1.0x10 ³	2.7x10 ⁻⁸
V-48	Vanadium (23)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶
V-49		1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁷	2.7x10 ⁻⁴
W-178	Tungsten (74)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
W-181		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
W-185		1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁷	2.7x10 ⁻⁴
W-187		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵

Symbol of radionuclide	Element and atomic number	Activity concentration for exempt material (Bq/g)	Activity concentration for exempt material (Ci/g)	Activity limit for exempt consignment (Bq)	Activity limit for exempt consignment (Ci)	
W-188	Xenon (54)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶	
Xe-122		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁹	2.7x10 ⁻²	
Xe-123		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁹	2.7x10 ⁻²	
Xe-127		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁵	2.7x10 ⁻⁶	
Xe-131m		1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁴	2.7x10 ⁻⁷	
Xe-133		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁴	2.7x10 ⁻⁷	
Xe-135	Yttrium (39)	1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ¹⁰	2.7x10 ⁻¹	
Y-87		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵	
Y-88		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵	
Y-90		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁵	2.7x10 ⁻⁶	
Y-91		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁶	2.7x10 ⁻⁵	
Y-91m		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵	
Y-92		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶	
Y-93		1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁵	2.7x10 ⁻⁶	
Yb-169		Ytterbium (70)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁷	2.7x10 ⁻⁴
Yb-175			1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴
Zn-65		Zinc (30)	1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵
Zn-69			1.0x10 ⁴	2.7x10 ⁻⁷	1.0x10 ⁶	2.7x10 ⁻⁵
Zn-69m	1.0x10 ²		2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵	
Zr-88	Zirconium (40)	1.0x10 ²	2.7x10 ⁻⁹	1.0x10 ⁶	2.7x10 ⁻⁵	
Zr-93 (b)		1.0x10 ³	2.7x10 ⁻⁸	1.0x10 ⁷	2.7x10 ⁻⁴	
Zr-95		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁶	2.7x10 ⁻⁵	
Zr-97 (b)		1.0x10 ¹	2.7x10 ⁻¹⁰	1.0x10 ⁵	2.7x10 ⁻⁶	

^a [Reserved]

^b Parent nuclides and their progeny included in secular equilibrium are listed in the following:

- Sr-90 Y-90
- Zr-93 Nb-93m
- Zr-97 Nb-97
- Ru-106 Rh-106
- Cs-137 Ba-137m
- Ce-134 La-134
- Ce-144 Pr-144
- Ba-140 La-140
- Bi-212 Tl-208 (0.36), Po-212 (0.64)
- Pb-210 Bi-210, Po-210
- Pb-212 Bi-212, Tl-208 (0.36), Po-212 (0.64)
- Rn-220 Po-216
- Rn-222 Po-218, Pb-214, Bi-214, Po-214
- Ra-223 Rn-219, Po-215, Pb-211, Bi-211, Tl-207
- Ra-224 Rn-220, Po-216, Pb-212, Bi-212, Tl-208(0.36), Po-212 (0.64)
- Ra-226 Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
- Ra-228 Ac-228
- Th-226 Ra-222, Rn-218, Po-214
- Th-228 Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
- Th-229 Ra-225, Ac-225, Fr-221, At-217, Bi-213, Po-213, Pb-209
- Th-nat Ra-226, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
- Th-234 Pa-234m
- U-230 Th-226, Ra-222, Rn-218, Po-214
- U-232 Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Tl-208 (0.36), Po-212 (0.64)
- U-235 Th-231
- U-238 Th-234, Pa-234m
- U-nat Th-234, Pa-234m, U-234, Th-230, Ra-226, Rn-222, Po-218, Pb-214, Bi-214, Po-214, Pb-210, Bi-210, Po-210
- U-240 Np-240m
- Np-237 Pa-233
- Am-242 mAm-242
- Am-243 Np-239

^c [Reserved]

^d These values apply only to compounds of uranium that take the chemical form of UF₆, UO₂F₂ and UO₂(NO₃)₂ in both normal and accident conditions of transport.

^e These values apply only to compounds of uranium that take the chemical form of UO₃, UF₄, UCl₄ and hexavalent compounds in both normal and accident conditions of transport.

^f These values apply to all compounds of uranium other than those specified in notes (d) and (e) of this table.

^g These values apply to unirradiated uranium only.

[69 FR 3685, Jan. 26, 2004]

§ 173.441 Radiation level limitations and exclusive use provisions.

(a) Except as provided in paragraph (b) of this section, each package of Class 7 (radioactive) materials offered

for transportation must be designed and prepared for shipment, so that under conditions normally incident to transportation, the radiation level does not exceed 2 mSv/hour (200 mrem/hour) at any point on the external surface of