

TRANSLATION. ORIGINAL TEXT IN FINNISH.

Decision on the clearance levels of radioactive materials

By virtue of Section 17, paragraph 1, point 4 of the Radiation Act (592/1991), the Radiation and Nuclear Safety Authority (STUK) has decided that the disposal, recycling and reuse of radioactive materials that originate from practices subject to the safety licence or notification obligation does not require a safety licence or approval as long as the activity concentration of the solid radioactive materials is lower than the clearance level presented in the appendix.

If a radioactive material contains several radionuclides, approval is not required if the following condition is met:

$$\sum_k \frac{C_k}{C_{c,k}} \leq 1 \quad (1)$$

In the formula,

C_k is the activity concentration of the radionuclide k

$C_{c,k}$ is the clearance level for the radionuclide k .

Director General

Petteri Tiippana

Director

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Appendix

Clearance levels for radioactive materials

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Clearance levels for radioactive materials

Radionuclide	Clearance level
	Activity concentration (Bq/g)
H-3	10 ²
Be-7	10
C-14	1
F-18 *	10
Na-22	0.1
Na-24*	1
Si-31	10 ³
P-32	10 ³
P-33	10 ³
S-35	10 ²
Cl-36	1
Cl-38*	10
K-42	10 ²
K-43 *	10
Ca-45	10 ²
Ca-47	10
Sc-46	0.1
Sc-47	100
Sc-48	1
V-48	1
Cr-51	10 ²
Mn-51*	10
Mn-52	1
Mn-52m *	10
Mn-53	10 ²
Mn-54	0.1
Mn-56*	10
Fe-52 *	10
Fe-55	10 ³
Fe-59	1
Co-55 *	10
Co-56	0.1
Co-57	1
Co-58	1
Co-58m*	10 ⁴
Co-60	0.1

Radionuclide	Clearance level
	Activity concentration (Bq/g)
Co-60m*	10 ³
Co-61*	10 ²
Co-62m*	10
Ni-59	10 ²
Ni-63	10 ²
Ni-65*	10
Cu-64*	10 ²
Zn-65	0.1
Zn-69*	10 ³
Zn-69m*	10
Ga-72*	10
Ge-71	10 ⁴
As-73	10 ³
As-74*	10
As-76*	10
As-77	10 ³
Se-75	1
Br-82	1
Rb-86	10 ²
Sr-85	1
Sr-85m*	10 ²
Sr-87m*	10 ²
Sr-89	10 ³
Sr-90	1
Sr-91*	10
Sr-92*	10
Y-90	10 ³
Y-91	10 ²
Y-91m*	10 ²
Y-92*	10 ²
Y-93*	10 ²
Zr-93*	10
Zr-95	1
Zr-97*	10
Nb-93m	10
Nb-94	0.1

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Radionuclide	Clearance level
	Activity concentration (Bq/g)
Nb-95	1
Nb-97*	10
Nb-98*	10
Mo-90*	10
Mo-93	10
Mo-99	10
Mo-101*	10
Tc-96	1
Tc-96m*	10 ³
Tc-97	10
Tc-97m	10 ²
Tc-99	1
Tc-99m*	10 ²
Ru-97	10
Ru-103	1
Ru-105*	10
Ru-106	0.1
Rh-103m*	10 ⁴
Rh-105	10 ²
Pd-103	10 ³
Pd-109	10 ²
Ag-105	1
Ag-110m	0.1
Ag-111	10 ²
Cd-109	1
Cd-115	10
Cd-115m	10 ²
In-111	10
In-113m*	10 ²
In-114m	10
In-115m*	10 ²
Sn-113	1
Sn-125	10
Sb-122	10
Sb-124	1
Sb-125	0.1
Te-123m	1
Te-125m	10 ³

Radionuclide	Clearance level
	Activity concentration (Bq/g)
Te-127	10 ³
Te-127m	10
Te-129*	10 ²
Te-129m	10
Te-131*	10 ²
Te-131m	10
Te-132	1
Te-133*	10
Te-133m*	10
Te-134*	10
I-123	10 ²
I-125	10 ²
I-126	10
I-129	0.01
I-130*	10
I-131	10
I-132*	10
I-133*	10
I-134*	10
I-135*	10
Cs-129	10
Cs-131	10 ³
Cs-132	10
Cs-134	0.1
Cs-134m*	10 ³
Cs-135	10 ²
Cs-136	1
Cs-137	0.1
Cs-138*	10
Ba-131	10
Ba-140	1
La-140	1
Ce-139	1
Ce-141	10 ²
Ce-143	10
Ce-144	10
Pr-142*	10 ²
Pr-143	10 ³

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Radionuclide	Clearance level
	Activity concentration (Bq/g)
Nd-147	10 ²
Nd-149*	10 ²
Pm-147	10 ³
Pm-149	10 ³
Sm-151	10 ³
Sm-153	10 ²
Eu-152	0.1
Eu-152m*	10 ²
Eu-154	0.1
Eu-155	1
Gd-153	10
Gd-159*	10 ²
Tb-160	1
Dy-165*	10 ³
Dy-166	10 ²
Ho-166	10 ²
Er-169	10 ³
Er-171*	10 ²
Tm-170	10 ²
Tm-171	10 ³
Yb-175	10 ²
Lu-177	10 ²
Hf-181	1
Ta-182	0.1
W-181	10
W-185	10 ³
W-187	10
Re-186	10 ³
Re-188*	10 ²
Os-185	1
Os-191	10 ²
Os-191m*	10 ³
Os-193	10 ²
Ir-190	1
Ir-192	1
Ir-194*	10 ²
Pt-191	10
Pt-193m	10 ³

Radionuclide	Clearance level
	Activity concentration (Bq/g)
Pt-197*	10 ³
Pt-197m*	10 ²
Au-198	10
Au-199	10 ²
Hg-197	10 ²
Hg-197m	10 ²
Hg-203	10
Tl-200	10
Tl-201	10 ²
Tl-202	10
Tl-204	1
Pb-203	10
Bi-206	1
Bi-207	0.1
Po-203*	10
Po-205*	10
Po-207*	10
At-211	10 ³
Ra-225	10
Ra-227	10 ²
Th-226	10 ³
Th-229	0.1
Pa-230	10
Pa-233	10
U-230	10
U-231	10 ²
U-232	0.1
U-233	1
U-236	10
U-237	10 ²
U-239*	10 ²
U-240*	10 ²
Np-237	1
Np-239	10 ²
Np-240*	10
Pu-234*	10 ²
Pu-235*	10 ²
Pu-236	1

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Radionuclide	Clearance level
	Activity concentration (Bq/g)
Pu-237	10 ²
Pu-238	0.1
Pu-239	0.1
Pu-240	0.1
Pu-241	10
Pu-242	0.1
Pu-243*	10 ³
Pu-244	0.1
Am-241	0.1
Am-242*	10 ³
Am-242m	0.1
Am-243	0.1
Cm-242	10
Cm-243	1
Cm-244	1
Cm-245	0.1
Cm-246	0.1

Radionuclide	Clearance level
	Activity concentration (Bq/g)
Cm-247	0.1
Cm-248	0.1
Bk-249	10 ²
Cf-246	10 ³
Cf-248	1
Cf-249	0.1
Cf-250	1
Cf-251	0.1
Cf-252	1
Cf-253	10 ²
Cf-254	1
Es-253	10 ²
Es-254	0.1
Es-254m	10
Fm-254*	10 ⁴
Fm-255*	10 ²

Nuclides marked with * have half-lives of less than 1 day.

Source:

International Atomic Energy Agency. Application of the concepts of exclusion, exemption and clearance. IAEA Safety Standards Series. Safety Guide RS-G-1.7. Vienna: IAEA; 2004.