

**The Swedish Radiation Protection Authority's regulations
on amendments to the regulations (SSI FS 1995:4) on Control of
Shipments of Radioactive Waste into or out of Sweden:**

issued on April 14th 2004.

On the basis of sections 7 and 8 of the Swedish Radiation Protection Ordinance (1988:293) the Swedish Radiation Protection Authority prescribes¹ that Section 1 in the Authority's regulations (SSI FS 1995:4) on Control of Shipments of Radioactive Waste into or out of Sweden shall read as follows and that *Annex 1* to the regulations shall read as follows.

Application

1 § These regulations apply to matters concerning licences and documents related to transports of radioactive waste into or out of Sweden. The regulations also apply when Sweden is a transit country.

The regulations do not apply if the total activity in one shipment does not exceed the values given in Annex 1 or if the specific activity at even distribution of the radioactive substances does not exceed the values given in the same Annex.

The regulations shall, according to sections 10-12, not apply to certain reshipping, nor shall they apply to shipping of high level waste of fissile substances that will not be used any longer.

These regulations enter into force on July 1st 2004.

On behalf of the Board of the Swedish Radiation Protection Authority

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¹ Cf. the CE-Directive 92/3/Euratom, OJ L35, 12.2.92, p.24 (Celex 392L0003).

The highest activity or specific activity allowed making exemption from the regulations

Nuclides with the notation + or sec represent mother-nuclides in balance with their daughter-nuclides. In those cases the values in the Table refers to the mother-nuclide but the presence of daughters is taken into account.

Nuclide	Activity (Bq)	Specific activity (kBq/kg)	Nuclide	Activity (Bq)	Specific activity (kBq/kg)
H-3	10^9	10^6	Mn-56	10^5	10
Be-7	10^7	10^3	Fe-52	10^6	10
C-14	10^7	10^4	Fe-55	10^6	10^4
O-15	10^9	10^2	Fe-59	10^6	10
F-18	10^6	10	Co-55	10^6	10
Na-22	10^6	10	Co-56	10^5	10
Na-24	10^5	10	Co-57	10^6	10^2
Si-31	10^6	10^3	Co-58	10^6	10
P-32	10^5	10^3	Co-58m	10^7	10^4
P-33	10^8	10^5	Co-60	10^5	10
S-35	10^8	10^5	Co-60m	10^6	10^3
Cl-36	10^6	10^4	Co-61	10^6	10^2
Cl-38	10^5	10	Co-62m	10^5	10
Ar-37	10^8	10^6	Ni-59	10^8	10^4
Ar-41	10^9	10^2	Ni-63	10^8	10^5
K-40	10^6	10^2	Ni-65	10^6	10
K-42	10^6	10^2	Cu-64	10^6	10^2
K-43	10^6	10	Zn-65	10^6	10
Ca-45	10^7	10^4	Zn-69	10^6	10^4
Ca-47	10^6	10	Zn-69m	10^6	10^2
Sc-46	10^6	10	Ga-72	10^5	10
Sc-47	10^6	10^2	Ge-71	10^8	10^4
Sc-48	10^5	10	As-73	10^7	10^3
V-48	10^5	10	As-74	10^6	10
Cr-51	10^7	10^3	As-76	10^5	10^2
Mn-51	10^5	10	As-77	10^6	10^3
Mn-52	10^5	10	Se-75	10^6	10^2
Mn-52m	10^5	10	Br-82	10^6	10
Mn-53	10^9	10^4	Kr-74	10^9	10^2
Mn-54	10^6	10	Kr-76	10^9	10^2

Annex 1

Nuclide	Activity (Bq)	Specific activity (kBq/kg)	Nuclide	Activity (Bq)	Specific activity (kBq/kg)
Kr-77	10 ⁹	10 ²	Tc-97	10 ⁸	10 ³
Kr-79	10 ⁵	10 ³	Tc-97m	10 ⁷	10 ³
Kr-81	10 ⁷	10 ⁴	Tc-99	10 ⁷	10 ⁴
Kr-83m	10 ¹²	10 ⁵	Tc-99m	10 ⁷	10 ²
Kr-85	10 ⁴	10 ⁵	Ru-97	10 ⁷	10 ²
Kr-85m	10 ¹⁰	10 ³	Ru-103	10 ⁶	10 ²
Kr-87	10 ⁹	10 ²	Ru-105	10 ⁶	10
Kr-88	10 ⁹	10 ²	Ru-106+	10 ⁵	10 ²
Rb-86	10 ⁵	10 ²	Rh-103m	10 ⁸	10 ⁴
Sr-85	10 ⁶	10 ²	Rh-105	10 ⁷	10 ²
Sr-85m	10 ⁷	10 ²	Pd-103	10 ⁸	10 ³
Sr-87m	10 ⁶	10 ²	Pd-109	10 ⁶	10 ³
Sr-89	10 ⁶	10 ³	Ag-105	10 ⁶	10 ²
Sr-90+	10 ⁴	10 ²	Ag-108m+	10 ⁶	10
Sr-91	10 ⁵	10	Ag-110m	10 ⁶	10
Sr-92	10 ⁶	10	Ag-111	10 ⁶	10 ³
Y-90	10 ⁵	10 ³	Cd-109	10 ⁶	10 ⁴
Y-91	10 ⁶	10 ³	Cd-115	10 ⁶	10 ²
Y-91m	10 ⁶	10 ²	Cd-115m	10 ⁶	10 ³
Y-92	10 ⁵	10 ²	In-111	10 ⁶	10 ²
Y-93	10 ⁵	10 ²	In-113m	10 ⁶	10 ²
Zr-93+	10 ⁷	10 ³	In-114m	10 ⁶	10 ²
Zr-95	10 ⁶	10	In-115m	10 ⁶	10 ²
Zr-97+	10 ⁵	10	Sn-113	10 ⁷	10 ³
Nb-93m	10 ⁷	10 ⁴	Sn-125	10 ⁵	10 ²
Nb-94	10 ⁶	10	Sb-122	10 ⁴	10 ²
Nb-95	10 ⁶	10	Sb-124	10 ⁶	10
Nb-97	10 ⁶	10	Sb-125	10 ⁶	10 ²
Nb-98	10 ⁵	10	Te-123m	10 ⁷	10 ²
Mo-90	10 ⁶	10	Te-125m	10 ⁷	10 ³
Mo-93	10 ⁸	10 ³	Te-127	10 ⁶	10 ³
Mo-99	10 ⁶	10 ²	Te-127m	10 ⁷	10 ³
Mo-101	10 ⁶	10	Te-129	10 ⁶	10 ²
Tc-96	10 ⁶	10	Te-129m	10 ⁶	10 ³
Tc-96m	10 ⁷	10 ³	Te-131	10 ⁵	10 ²

Annex 1

Nuclide	Activity (Bq)	Specific activity (kBq/kg)	Nuclide	Activity (Bq)	Specific activity (kBq/kg)
Te-131m	10 ⁶	10	Pr-143	10 ⁶	10 ⁴
Te-132	10 ⁷	10 ²	Nd-147	10 ⁶	10 ²
Te-133	10 ⁵	10	Nd-149	10 ⁶	10 ²
Te-133m	10 ⁵	10	Pm-147	10 ⁷	10 ⁴
Te-134	10 ⁶	10	Pm-149	10 ⁶	10 ³
I-123	10 ⁷	10 ²	Sm-151	10 ⁸	10 ⁴
I-125	10 ⁶	10 ³	Sm-153	10 ⁶	10 ²
I-126	10 ⁶	10 ²	Eu-152	10 ⁶	10
I-129	10 ⁵	10 ²	Eu-152m	10 ⁶	10 ²
I-130	10 ⁶	10	Eu-154	10 ⁶	10
I-131	10 ⁶	10 ²	Eu-155	10 ⁷	10 ²
I-132	10 ⁵	10	Gd-153	10 ⁷	10 ²
I-133	10 ⁶	10	Gd-159	10 ⁶	10 ³
I-134	10 ⁵	10	Tb-160	10 ⁶	10
I-135	10 ⁶	10	Dy-165	10 ⁶	10 ³
Xe-131m	10 ⁴	10 ⁴	Dy-166	10 ⁶	10 ³
Xe-133	10 ⁴	10 ³	Ho-166	10 ⁵	10 ³
Xe-135	10 ¹⁰	10 ³	Er-169	10 ⁷	10 ⁴
Cs-129	10 ⁵	10 ²	Er-171	10 ⁶	10 ²
Cs-131	10 ⁶	10 ³	Tm-170	10 ⁶	10 ³
Cs-132	10 ⁵	10	Tm-171	10 ⁸	10 ⁴
Cs-134m	10 ⁵	10 ³	Yb-175	10 ⁷	10 ³
Cs-134	10 ⁴	10	Lu-177	10 ⁷	10 ³
Cs-135	10 ⁷	10 ⁴	Hf-181	10 ⁶	10
Cs-136	10 ⁵	10	Ta-182	10 ⁴	10
Cs-137+	10 ⁴	10	W-181	10 ⁷	10 ³
Cs-138	10 ⁴	10	W-185	10 ⁷	10 ⁴
Ba-131	10 ⁶	10 ²	W-187	10 ⁶	10 ²
Ba-140+	10 ⁵	10	Re-186	10 ⁶	10 ³
La-140	10 ⁵	10	Re-188	10 ⁵	10 ²
Ce-139	10 ⁶	10 ²	Os-185	10 ⁶	10
Ce-141	10 ⁷	10 ²	Os-191	10 ⁷	10 ²
Ce-143	10 ⁶	10 ²	Os-191m	10 ⁷	10 ³
Ce-144+	10 ⁵	10 ²	Os-193	10 ⁶	10 ²
Pr-142	10 ⁵	10 ²	Ir-190	10 ⁶	10

Annex 1

Nuclide	Activity (Bq)	Specific activity (kBq/kg)	Nuclide	Activity (Bq)	Specific activity (kBq/kg)
Ir-192	10 ⁴	10	Ac-228	10 ⁶	10
Ir-194	10 ⁵	10 ²	Th-226+	10 ⁷	10 ³
Pt-191	10 ⁶	10 ²	Th-227	10 ⁴	10
Pt-193m	10 ⁷	10 ³	Th-228+	10 ⁴	1
Pt-197	10 ⁶	10 ³	Th-229+	10 ³	1
Pt-197m	10 ⁶	10 ²	Th-230	10 ⁴	1
Au-198	10 ⁶	10 ²	Th-231	10 ⁷	10 ³
Au-199	10 ⁶	10 ²	Th-232sec	10 ³	1
Hg-197	10 ⁷	10 ²	Th-234+	10 ⁵	10 ³
Hg-197m	10 ⁶	10 ²	Pa-230	10 ⁶	10
Hg-203	10 ⁵	10 ²	Pa-231	10 ³	1
Tl-200	10 ⁶	10	Pa-233	10 ⁷	10 ²
Tl-201	10 ⁶	10 ²	U-230+	10 ⁵	10
Tl-202	10 ⁶	10 ²	U-231	10 ⁷	10 ²
Tl-204	10 ⁴	10 ⁴	U-232+	10 ³	1
Pb-203	10 ⁶	10 ²	U-233	10 ⁴	10
Pb-210+	10 ⁴	10	U-234	10 ⁴	10
Pb-212+	10 ⁵	10	U-235+	10 ⁴	10
Bi-206	10 ⁵	10	U-236	10 ⁴	10
Bi-207	10 ⁶	10	U-237	10 ⁶	10 ²
Bi-210	10 ⁶	10 ³	U-238+	10 ⁴	10
Bi-212+	10 ⁵	10	U-238sec	10 ³	1
Po-203	10 ⁶	10	U-239	10 ⁶	10 ²
Po-205	10 ⁶	10	U-240	10 ⁷	10 ³
Po-207	10 ⁶	10	U-240+	10 ⁶	10
Po-210	10 ⁴	10	Np-237+	10 ³	1
At-211	10 ⁷	10 ³	Np-239	10 ⁷	10 ²
Rn-220+	10 ⁷	10 ⁴	Np-240	10 ⁶	10
Rn-222+	10 ⁸	10	Pu-234	10 ⁷	10 ²
Ra-223+	10 ⁵	10 ²	Pu-235	10 ⁷	10 ²
Ra-224+	10 ⁵	10	Pu-236	10 ⁴	10
Ra-225	10 ⁵	10 ²	Pu-237	10 ⁷	10 ³
Ra-226+	10 ⁴	10	Pu-238	10 ⁴	1
Ra-227	10 ⁶	10 ²	Pu-239	10 ⁴	1
Ra-228+	10 ⁵	10	Pu-240	10 ³	1

Nuclide	Activity (Bq)	Specific activity (kBq/kg)	Nuclide	Activity (Bq)	Specific activity (kBq/kg)
Pu-241	10 ⁵	10 ²	Bk-249	10 ⁶	10 ³
Pu-242	10 ⁴	1	Cf-246	10 ⁶	10 ³
Pu-243	10 ⁷	10 ³	Cf-248	10 ⁴	10
Pu-244	10 ⁴	1	Cf-249	10 ³	1
Am-241	10 ⁴	1	Cf-250	10 ⁴	10
Am-242	10 ⁶	10 ³	Cf-251	10 ³	1
Am-242m+	10 ⁴	1	Cf-252	10 ⁴	10
Am-243+	10 ³	1	Cf-253	10 ⁵	10 ²
Cm-242	10 ⁵	10 ²	Cf-254	10 ³	1
Cm-243	10 ⁴	1	Es-253	10 ⁵	10 ²
Cm-244	10 ⁴	10	Es-254	10 ⁴	10
Cm-245	10 ³	1	Es-254m	10 ⁶	10 ²
Cm-246	10 ³	1	Fm-254	10 ⁷	10 ⁴
Cm-247	10 ⁴	1	Fm-255	10 ⁶	10 ³
Cm-248	10 ³	1			

If more than one nuclide appear simultaneously exemption applies if

$$\sum_k A_k/L_k \leq 1$$

where A_k is the total activity or specific activity for the nuclide k, and L_k is the corresponding limit for exemption of nuclide k.