

TABLE 44-A
CLASSIFICATION OF ISOTOPES ACCORDING TO RELATIVE
RADIOTOXICITY PER UNIT ACTIVITY

The isotopes in each class are listed in order of increasing atomic number

CLASS 1 (very high toxicity)	Sr-90 + Y-90, *Pb-210 + Bi-210 (Ra D + E), Po-210, At-211, Ra-226 + 55 per cent *daughter products, Ac-227, *U-233, Pu-239, *Am-241, Cm-242
CLASS 2 (high toxicity)	Ca-45, *Fe-59, Sr-89, Y-91, Ru-106 + *Rh-106, *I-131, *Ba-140 + La-140, Ce-144 + *Pr-144, Sm-151, *Eu-154, *Tm-170, *Th-234 + *Pa-234, *natural uranium
CLASS 3 (moderate toxicity)	*Na-22, *Na-24, P-32, S-35, Cl-36, *K-42, *Sc-46, Sc-47, *Sc-48, *V-48, *Mn-52, *Mn-54, *Mn-56, Fe-55, *Co-58, *Co-60, Ni-59, *Cu-64, *Zn-65, *Ga-72, *As-74, *As-76, *Br-82, *Rb-86, *Zr-95 + *Nb-95, *Nb-95, *Mo-99, Tc-98, *Rh-105, Pd-103 + Rh-103, *Ag-105, Ag-111, Cd-109 + *Ag-109, *Sn-113, *Te-127, *Te-129, *I-132, Cs-137 + *Ba-137, *La-140, Pr-143, Pm-147, *Ho-166, *Lu-177, *Ta-182, *W-181, *Re-183, *Ir-190, *Ir-192, Pt-191, *Pt-193, *Au-196, *Au-198, *Au-199, Tl-200, Tl-202, Tl-204, *Pb-203
CLASS 4 (slight toxicity)	H-3, *Be-7, C-14, F-18, *Cr-51, Ge-71, *Ti-201

*Gamma-emitters

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TABLE 44-B
TYPE OF LABORATORY OR WORKING PLACE REQUIRED
FOR ISOTOPES OF INCREASING RADIOTOXICITY

Radio-toxicity of isotopes	Minimum significant quantity	Type of laboratory or working place required		
		Type C Good Chemical Laboratory	Type B Radioisotope Laboratory	Type A High Level Laboratory
Very high	0.1 μ c	10 μ c or less	10 μ c - 10 mc	10 mc or more
High	1.0 μ c	100 μ c or less	100 μ c - 100 mc	100 mc or more
Moderate	10 μ c	1 mc or less	1 mc - 1 c	1 c or more
Slight	100 μ c	10 mc or less	10 mc - 10 c	10 c or more

Procedure	Modifying factor
Storage (stock solutions)	x 100
Very simple wet operations	x 10
Normal chemical operations	x 1
Complex wet operations with risk of spills	x] 0.1
Simple dry operations	x]
Dry and dusty operations	x 0.01

NOTE Modifying factors should be applied to the quantities shown in the last three columns as follows, according to the complexity of the procedures to be followed. Factors are suggested only because due regard must be paid to the circumstances affecting individual cases.

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