

RADIONUCLIDE DATA SHEET

[COBALT]

Co-60

27 protons

33 neutrons

Half Life: 5.27 years

Radiation: Decay Mode: Beta

Gamma Constant: 15.2 mR/hr per 1 mCi at 30 cm

Major Betas:

Max E(MeV)	Avg E (MeV)	# per 100 dis
0.318	0.096	

Major Gammas:

E(MeV)	# per 100 Dis
1.173	100
1.333	100

Max. Beta Range in Air : 74 cm

Max. Beta Range in Water : 0.1 cm

Average gamma E = 1.25 MeV

Intake Data (annual):

Minimum Ingestion: 200 μ Ci equals 5 rem TEDE (WHOLE BODY)

Minimum Inhalation: 30 μ Ci equals 5 rem TEDE (WHOLE BODY)

Doses:

Skin Dose: Reported for 1 μ Ci over 10 cm² of skin
41.7 mrad/hr (gamma dose)

Point Source: 377 mrad/hr (beta dose)

Disk Source: 380 mrad/hr (beta dose)

Shielding Information:

Maximum Range For Beta	Plastic	0.1 cm
	Aluminum	0.04 cm
Tenth Value Thickness For Average Gamma:	Concrete	17 cm
	Lead	3.3 cm

Detection information: Usable Detectors listed with estimate efficiencies

Ludlum 3 w/ pancake probe at 1 cm	9%	Liq. Scint. Counter	85%
Ludlum 3 w/ NaI probe near surface	1%	Gamma Counter	15%

Action Quantities:

Bench Top Quantity Must Be Less Than	300 μ Ci
Containers Require Labeling When Greater Than	1 μ Ci
Rooms Require Posting When There Is Greater Than	10 μ Ci
Contamination Lasting More than 24 hrs Require NRC Notification At	150 μ Ci