

# 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  $\mu$ Ci equals 5 rem TEDE (WHOLE BODY)

Minimum Inhalation: 30  $\mu$ Ci equals 5 rem TEDE (WHOLE BODY)

## **Doses:**

**Skin Dose:** Reported for 1  $\mu$ Ci over 10 cm<sup>2</sup> 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 $\mu$ Ci
Containers Require Labeling When Greater Than	1 $\mu$ Ci
Rooms Require Posting When There Is Greater Than	10 $\mu$ Ci
Contamination Lasting More than 24 hrs Require NRC Notification At	150 $\mu$ Ci