

RADIONUCLIDE DATA SHEET

[SCANDIUM]



Sc-46

21 protons

25 neutrons

Half Life: 83.81 days

Radiation: Decay Mode: Beta

Gamma Constant: 13 mR/hr per 1 mCi at 30 cm

Major Beta:

Major Gammas:

Max E(MeV)	Avg E (MeV)	# per 100 dis
0.357	0.112	100

E(MeV)	# per 100 Dis
0.889	100
1.121	100

Max. Beta Range in Air : 93 cm
 Max. Beta Range in Water : 0.11 cm

Average gamma E = 1.00 MeV

Intake Data (annual):

Minimum Ingestion: 900 µCi equals 5 rem TEDE (WHOLE BODY)
 Minimum Inhalation: 200 µCi equals 5 rem TEDE (WHOLE BODY)

Doses:

Skin Dose: Reported for 1 µCi over 10 cm² of skin
 34.9 mrad/hr (gamma dose)
 Point Source: 427 mrad/hr (beta dose)
 Disk Source: 430 mrad/hr (beta dose)

Shielding Information:

Maximum Range For Beta	Plastic	0.11 cm
	Aluminum	0.05 cm
Tenth Value Thickness For Average Gamma:	Concrete	16 cm
	Lead	2.9 cm

Detection information: Usable Detectors listed with estimate efficiencies

Ludlum 3 w/ pancake probe at 1 cm	4%	Liq. Scint. Counter	90%
Ludlum 3 w/ NaI probe near surface	1%	Gamma Counter	15%

Action Quantities:

Bench Top Quantity Must Be Less Than	2000 µCi
Containers Require Labeling When Greater Than	10 µCi
Rooms Require Posting When There Is Greater Than	100 µCi
Contamination Lasting More than 24 hrs Require NRC Notification At	1000 µCi