RADIONUCLIDE DATA SHEET
Scandium – 46

Sc – 46 21 protons 25 neutrons

Radiation: **Decay mode:** Beta

Major Betas:

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

Max. Beta Range in air 93 cm or 3.05 ft
Max. Beta Range in water 0.11 cm

Major Gammas:

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

Avg. gamma E = 1.00 MeV

Half – life: 83.81 days

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

Radiological data:

Min. Ingestion ALI: 900 μCi equals 5 rem TEDE (Whole Body)
Min. Inhalation ALI: 200 μCi equals 5 rem TEDE (Whole Body)

Doses:

Skin Dose: Reported for 1 μCi over 10 cm^2 of skin
34.9 mrad/hr (gamma dose)
Point Source: 427 mrad/hr (beta dose)
Disk Source: 430 mrad/hr (beta dose)

Shielding data:

Max. 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 estimated efficiencies
(Use efficiencies listed on instrument when available)

Ludlum 3 with pancake probe at 1 cm:	4 %	**Liq. Scint. Counter:**	90 %
Ludlum 3 with 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 when greater than	1000 μCi

Updated – 08/02/2005