

RADIONUCLIDE DATA SHEET

[RHENIUM]

Re-186

75protons

111neutrons

Half Life: 3.777 days

Radiation: Decay Mode: Beta

Gamma Constant: 0.2 mR/hr per 1 mCi at 30 cm

Major Betas:

Max E(MeV)	Avg E (MeV)	# per 100 dis
0.939	0.309	22
1.077	0.362	71

Major Gammas:

E(MeV)	# per 100 Dis
0.137	10

Max. Beta Range in Air : 450 cm

Max. Beta Range in Water : 0.48 cm

Average gamma E = 0.102 MeV

Intake Data (annual):

Minimum Ingestion: 2000 μ Ci equals 5 rem TEDE (WHOLE BODY)

Minimum Inhalation: 2000 μ Ci equals 5 rem TEDE (WHOLE BODY)

Doses:

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

Point Source: 613 mrad/hr (beta dose)

Disk Source: 615 mrad/hr (beta dose)

Shielding Information:

Maximum Range For Beta	Plastic	0.48 cm
	Aluminum	0.23 cm
Tenth Value Thickness For Average Gamma:	Concrete	5.6 cm
	Lead	0.01 cm

Detection information: Usable Detectors listed with estimate efficiencies

Ludlum 3 w/ pancake probe at 1 cm	11%	Liq. Scint. Counter	85%
Ludlum 3 w/ NaI probe near surface	3%	Gamma Counter	80%

Action Quantities:

Bench Top Quantity Must Be Less Than	20000 μ Ci
Containers Require Labeling When Greater Than	100 μ Ci
Rooms Require Posting When There Is Greater Than	1000 μ Ci
Contamination Lasting More than 24 hrs Require NRC Notification At	10000 μ Ci