



RADIONUCLIDE DATA SHEET

Phosphorous – 33



P – 33 15 protons 18 neutrons

Radiation: Decay mode: Beta

Major Betas:

| Max E (MeV) | Avg E (MeV) | # per 100 dis |
|-------------|-------------|---------------|
| 0.249 | 0.077 | 100 |
| | | |
| | | |

Major Gammas:

| E (MeV) | # per 100 dis |
|---------|---------------|
| None | |
| | |
| | |

Max. Beta Range in air 56 cm or 1.84 ft
 Max. Beta Range in water 0.63 cm

Avg. gamma E = 0 MeV

Half – life: 25.3 days

Gamma constant: 0 mR/hr per 1 mCi at 30 cm

Radiological data:

Min. Ingestion ALI: 6000 μ Ci equals 5 rem TEDE (Whole Body)
Min. Inhalation ALI: 3000 μ Ci equals 5 rem TEDE (Whole Body)

Doses:

Skin Dose: Reported for 1 μ Ci over 10 cm² of skin
 0 mrad/hr (gamma dose)
Point Source: 311 mrad/hr (beta dose)
Disk Source: 314 mrad/hr (beta dose)

Shielding data:

| | | | |
|---|----------|---|---------|
| Max. range for beta: | Plastic | = | 0.63 cm |
| | Aluminum | = | 0.03 cm |
| Tenth Value Thickness for average gamma: | Concrete | = | 0 cm |
| | Lead | = | 0 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: | 85 % |
| Ludlum 3 with NaI probe near surface: 0 % | Gamma Counter: | 0 % |

Action Quantities:

| | |
|---|----------------|
| Bench top quantity must be less than | 30000 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 when greater than | 15000 μ Ci |