Radiation:  Electron Capture

Major Gammas:

<table>
<thead>
<tr>
<th>E (MeV)</th>
<th># per 100 dis</th>
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<tbody>
<tr>
<td>0.088</td>
<td>3.70</td>
</tr>
<tr>
<td>0.0219</td>
<td>28.9</td>
</tr>
<tr>
<td>0.0221</td>
<td>54.5</td>
</tr>
</tbody>
</table>

Max. Beta Range in air: N/A cm or N/A ft  
Max. Beta Range in water: N/A cm  
Avg. gamma E = 0.09 MeV

Half – life: 462.6 days

Gamma constant: 0.198 mR/hr per mCi at 30 cm

Radiological data:

Min. Ingestion ALI: 400μCi equals 5rem TEDE (Whole Body)  
300μCi equals 50rem CEDE (Kidneys)  
Min. Inhalation ALI: 50μCi equals 5rem TEDE (Whole Body)  
40μCi equals 50rem CEDE (Kidneys)

Doses:

Skin Dose: Reported for 1 μCi over 10 cm² of skin  
32.1 mrad/hr (gamma dose)  
Point Source: 0 mrad/hr (beta dose)  
Disk Source: 0 mrad/hr (beta dose)

Shielding data:

Max. range for beta:  
Plastic = N/A cm  
Aluminum = N/A cm  
Concrete = cm  
Lead = cm

Tenth Value Thickness for average gamma:

Detection Information: Usable Detectors listed with estimated efficiencies (Use efficiencies listed on instrument when available)

Ludlum 3 with pancake probe at 1 cm: %  
Liq. Scint. Counter: %  
Ludlum 3 with NaI probe near surface: %  
Gamma Counter: %

Action Quantities:

Bench top quantity must be less than 400 μCi  
Containers require labeling when greater than 1 μCi  
Rooms require posting when there is greater than 10 μCi  
Contamination lasting more than 24 hrs require NRC notification when greater than 200 μCi