RADIONUCLIDE SAFETY DATA SHEET

RADIONUCLIDE: Ag-110m FORMS: Soluble

PHYSICAL CHARACTERISTICS
HALF-LIFE: 249.8 days

DECAY EMISSIONS

<table>
<thead>
<tr>
<th>E (keV)</th>
<th>%</th>
<th>E (keV, Ave)</th>
<th>%</th>
<th>E (keV)</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>658</td>
<td>94</td>
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<td>1384</td>
<td>25</td>
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</tbody>
</table>

- Only 4 most probable emissions per decay type included. Emissions below 10 keV or 1% excluded.

STANFORD HAZARD CATEGORY
C – level (low hazard): Up to 2 mCi
B – level (moderate hazard): > 2 mCi, < 100 mCi
A – level (high hazard): > 100 mCi

EXTERNAL RADIATION HAZARDS
Gamma dose rate, point source at 1 ft, 1 mCi: 14.33 mrem/h

Beta dose rate to skin, point source at 1 ft, 1 mCi: 79.5 mrem/h

Contamination skin dose, uniform deposit of 1 µCi per cm²: 2500 mrem/h

SHIELDING
Gammas/X-rays: 3.3 cm of lead will reduce the gamma dose rate by 90%.

Betas/electrons: 1.4 mm of plastic will absorb all emissions. Bremsstrahlung may be created and require additional shielding.

INTERNAL RADIATION HAZARDS
Annual Limit on Intake: 500 µCi (Ingestion)
90 µCi (Inhalation)

The values above indicate the activity taken into the body that would result in either 5 rem to the whole body (CEDE) or 50 rem to an organ or tissue (CDE).

DOSIMETRY AND BIOASSAY REQS
Whole-body and finger-ring dosimeters are required for handling 5 mCi or more, or 1 mCi amounts weekly. Urine assays may be required after large spills or contaminations.

SPECIAL PROBLEMS AND PRECAUTIONS:
1. Recommended survey probe: NaI, PGM
2. Always wear protective gloves, a lab coat, and safety eyewear to protect the skin and eyes from contamination. Change gloves often.
3. Survey work areas before, during, and after work. Work areas may require shielding to keep dose ALARA. Instrument and smear surveys are required.
4. Segregate waste to those with half-lives of greater than 120 days (excluding H3 and/or C14). Survey the waste disposal area to ensure exposure rates are less than 2 mR/hr at 1 foot.
5. Limit soluble waste to the sewer to less than 10 µCi/day per lab.

References: