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Preparation of Unit Dose Pulmolite (MAA)

Tc-99m Activity (mCi)	Volume of Saline to Remove (mL)	Average* Particles per Vial (millions)	Volume of Sodium Pertechnetate (mL)	Final Kit Volume (mL)	Particle Concentration (millions/mL)	Maximum Volume/Dose (mL)	Dose Volume 4 mCi (mL)	Particles per Dose 4 mCi (millions)	Dose Volume 5 mCi (mL)	Particles per Dose 5 mCi (millions)	Dose Volume 6 mCi (mL)	Particles per Dose 6 mCi (millions)
25	3.5	1.5	1.0	2.5	0.60	1.17	0.40	0.24	0.50	0.30	0.60	0.36
20	3.75	1.25	1.0	2.25	0.56	1.26	0.45	0.25	0.56	0.31	0.68	0.38
15	4.0	1.0	1.0	2.0	0.50	1.40	0.53	0.27	0.67	0.33	0.80	0.40
10	4.25	0.75	1.0	1.75	0.43	1.63	0.70	0.30	0.88	0.38	1.05	0.45

Instructions for Preparation of Unit Dose Pulmolite										Tc-99m Decay Factors	
1. Add 5 mL of sterile saline to a non-radioactive vial of Pulmolite, maintaining negative pressure.										0.5 hr	0.944
2. After determining the amount of activity to add to the kit, remove the volume listed in column 2 from the vial.										1 hr	0.891
3. Dilute the Tc-99m activity to 1 mL and inject into reconstituted Pulmolite vial.										2 hr	0.794
4. Let kit stand at room temperature for 15 minutes after preparation.										3 hr	0.708
5. Unit dose volumes for 4, 5, and 6 mCi doses are calculated for preparation time.										4 hr	0.631
6. For unit doses injected after preparation time, do not exceed Maximum Volume/Dose based on 700,000 particles.										5 hr	0.562
7. Divide dose volume and number of particles by decay factor for doses injected after preparation time.										6 hr	0.501

Example using 20 mCi Tc-99m:											
1. Add 5 mL of sterile saline to a non-radioactive vial of Pulmolite, maintaining negative pressure.											
2. Remove 3.75 mL from the vial.											
3. Dilute 20 mCi of Tc-99m to a volume of 1 mL and inject into the reconstituted vial.											
4. Let kit stand at room temperature for 15 minutes after preparation.											
5. The volume for a 5 mCi dose is 0.56 mL and it will contain approximately 250,000 particles.											
6. If the dose is needed 2 hour after preparation time, determine the required dose volume by dividing the dose volume by 0.794.											
<p style="margin-left: 40px;">Dose Volume at 2 hours = 0.56 mL/0.794 = 0.71 mL</p> <p style="margin-left: 40px;">Approximate Number of Particles at 2 hours = 250,000 particles/0.794 = 315,000 particles</p>											

*Note: Each vial contains 3.5 to 6.5 million particles