

Recommended Procedure for Ampule Handling and Dispensing of Solution

1. The ampule contains a strongly acidic radioactive solution. Appropriate protective clothing should be worn, and the ampules opened and handled in a fume hood.
2. Before opening the ampule, ensure that any dried uranium or condensed liquid in the neck or body of the ampule is redissolved into solution. This can be accomplished by inverting the ampule several times, with shaking or gentle tapping to clear the neck of any solution.
3. Ensure that all of the liquid has drained from the top and neck of the ampule. Gently shake or tap the neck if necessary.
4. The glass ampules are scored at the neck for ease of opening. However, glass burrs and fragments pose a cut hazard to anyone opening the ampules. In order to minimize the risk of injury, precautions should be taken when opening and handling the ampules. Heavy, puncture-resistant gloves should be worn at all times when handling the ampules.
5. Moisten the scored line on the neck with distilled water. This will make for a cleaner break at the score.
6. Wrap the neck of the ampule with a heavy cloth or towel. Holding the ampule upright, grasp the body of the ampule firmly with the right hand, placing the thumb just below the score. With the left hand, place the thumb just above the scored area of the neck, just above the right hand thumb, with the fingers of the left hand wrapped around the top portion of the ampule. Exert pressure on the score with the thumbs while pulling back with the left hand fingers to cause the glass to fail at the score. This should be accomplished with a smooth, quick motion, with the ampule in the vertical position at all times.
7. The top portion of the ampule may be disposed of as radioactive waste. Generally, the edges at the break will contain very sharp glass burrs and shards. Precaution must be taken at all times when handling the ampule.
8. Because of the narrow neck of the ampule, it may be difficult or impossible to pour the solution out. In order to enable the solution to drain through the narrow neck, obtain an approximately 12-cm length of plastic capillary tubing (approx. dimensions: i.d. of 0.1", o.d. of 0.16"). Insert one end of the tubing fully into the ampule. Fold the remaining length of tubing down along the outside of the ampule, ensuring that the tubing is not crimped, thereby allowing air flow through the bent tubing and into the ampule. Holding the ampule and tubing in one hand, and a beaker or dispensing bottle in the other, carefully but quickly invert the ampule over the container, allowing the solution to drain into it. The bent capillary tubing allows air to flow into the ampule, thereby removing the "air lock" caused by the narrow neck of the open end of the ampule. Be cautious during this procedure, both for spills and the possibility of cuts due to the sharp edges of the neck.
9. The user should be wary of evaporative losses once the ampule is opened. It is recommended the entire solution be accurately weighed and aliquanted as soon as possible after opening the ampule.