

PREPARATION AND USE OF STS FOR CUT ROSE FLOWERS

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1. Preparation of stock solution

Weights to be used depend on the type of sodium thiosulfate. Check the label and weigh out:

	Grams	Ounces
EITHER		
(a) prismatic sodium thiosulfate pentahydrate	120	4 1/2
OR		
(b) anhydrous sodium thiosulfate	80	2 3/4

Dissolve the weighed material (a) or (b) in one pint of water. Then weigh out:

(c) silver nitrate	20	3/4
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Dissolve this in a separate pint of water.

Prepare the stock solution by slowly pouring the silver nitrate solution into the sodium thiosulfate solution, stirring rapidly. Some browning of the stock solution may occur during mixing, but this will not matter. Store the stock solution in a dark glass bottle in the refrigerator.

2. Deciding on the treatment conditions

To conveniently determine the optimum times and concentrations for pretreatment of roses with STS, use a nomogram in the following way:

A. Determine water uptake rate of the flowers under the proposed pretreatment conditions (packing room or cool store). This is done by measuring 100 ml of water (using a graduated measuring cylinder) into a jar, then placing a typical bunch of flowers (25 flowers) into the water for exactly 1 hour. The difference between 100 ml and the final volume is the uptake rate in ml per bunch per hour.

B. Decide on the most convenient pretreatment time (overnight, 10 minutes, 2 hours, or the like).

C. Use the nomogram to determine the concentration of STS required.

3. Preparing the treatment solution.

Add the number of ounces of stock solution determined from the nomogram to each gallon of water required. This will give the proper concentration of STS for the treatment conditions and time that you have selected.

Example.

A bunch of 'Royalty' roses took up 10 ml of water in one hour. (That is, 90 ml was left after the one-hour test period.) Mark 10 on the left-hand scale. Mark the desired treatment time (say, 30 minutes) on the center scale. Draw a straight line between the two marks and extend the line to where it crosses the right-hand scale. This point on the right-hand scale gives the number of fluid ounces of the stock STS solution needed to make 1 gallon of treatment solution--in this example 5 ounces.

Nomogram used to determine STS pretreatment times and concentrations.

