



Soleris® vial uninoculated (left) and inoculated vial (right).

The *Staphylococcus aureus* (S2-STA) Vial is a screening vial specifically for *Staphylococcus aureus*. The vial has an assay time of 22 hours for most applications. The vial contains a selective medium and an antibiotic supplement is added to the vial. The vial is a CO<sub>2</sub> vial. As organisms grow in the broth medium, the carbon dioxide (CO<sub>2</sub>) produced diffuses through a membrane layer into a soft agar plug containing a dye indicator. The membrane layer also serves as a barrier, eliminating product interference with the reading window. The CO<sub>2</sub> released during the organism growth changes the agar plug from green/blue-green to yellow. The color change in the dye is read by the instrument.

### Materials Required:

1. S2-STA, *Staphylococcus aureus* (S2-STA) vial
2. Tryptic Soy broth (BLX-TSB90)
  - a. If required, use a designated neutralization broth, such as D/E Neutralizer, TAT Broth, Modified Letheen Broth, etc.
3. S2 *Staphylococcus aureus* supplement (S2-SSA)
4. Coagulase SA Reagent (BLX-COG)

### Dependent on Sample Tested:

1. Sterile 1 N to 5 N sodium hydroxide (NaOH) and/or hydrochloric acid (HCl)
2. pH meter or pH paper

### Vial Specifications

1. Vial pH is 7.2 ± 0.2
2. Vial sample capacity up to 0.1 mL

### Sample Preparation

1. For USP testing, perform 1:10 dilution by adding 10 g of sample in 90 mL of Tryptic Soy Broth (See Neogen Rapid Microbiology System Validation Book, Introduction, p.5) or designated neutralization broth.
  - a. Check pH and adjust, if necessary, to 7.0 ± 1.0.
2. Incubate for 18–24 hours at 35°C.

### Vial Preparation

1. Remove S2-STA vials from the refrigerator and allow to equilibrate to room temperature

### Inoculation of Vial

1. Transfer 0.2 mL of the *Staphylococcus aureus* supplement (S2-SSA) to the S2-STA vial.
2. Cap the vial and gently invert 3 times to mix sample.
3. Transfer 0.1 mL of the incubated enrichment to the S2-STA vial.
4. Cap the vial and gently invert 3 times to mix sample. Keep cap tight.
5. Insert the vial into the BioLumix® instrument set at 35°C and run for the pre-programmed test duration. It is not recommended to adjust the parameters without consulting Neogen Technical Services.
6. If detection occurs, perform the coagulase *Staphylococcus aureus* confirmation test.

### Algorithm Utilized:

Test	Test Type	Detection Level	Resolution	Ignore	Test Duration	Temp
S2-STA	Yellow	15	1	30	22 hours	35°C

### *Staphylococcus aureus* Confirmation Step

1. Remove the S2-STA vial positive (detecting) vial from the instrument.
2. Transfer 0.5 mL from a positive S2-STA vial into a sterile tube
3. Add 0.5 mL of the from the Coagulase SA Reagent (BLX-COG), swirl gently to mix.
4. Incubate at 35°C for 4 hours.
5. Gently slant the tube to look for clotting. If no clot is visible after 4 hours, re-incubate at 35°C for up to 24 hours.
  - a. **NOTE:** Results after 24 hours may be invalid, as the fibrinogen in the plasma can break down over time.
6. If a clot is seen after the incubation, the sample is positive for *S. aureus*. If it remains liquid, the sample does not contain *S. aureus*.

### Disclaimers:

Information provided is based on validation procedures that Neogen performed in Neogen laboratories. Deviation from procedures is possible, but should be discussed with Neogen Technical Services.

Samples may need to be pH adjusted for all vials.

Appearance of the vials should be inspected prior to use.

Certain product matrices may require parameter adjustments, including increased test duration. For more information contact Neogen Technical Services.