

## K375 LEAD ACETATE STRIPS

### PRINCIPLE/DISCUSSION:

Key Lead Acetate Strips are used to detect the production of hydrogen sulfide by Enterobacteriaceae. The strips are more sensitive than TSI or KI agar and may be positive when the agar butt reaction would be inconclusive.

### MATERIAL SAFETY DATA:

Each strip is impregnated with a solution of lead acetate and water.  
Lead is harmful if ingested or handled. See MSDS for hazards..

### STORAGE:

Store tightly covered in a dry place at room temperature.

### QUALITY CONTROL:

Strips should be tested before use with known hydrogen sulfide positive and negative organisms. Key suggests *Proteus vulgaris*, ATCC 8427 for a positive and *Escherichia coli* ATCC 25922 for a negative. Dispose of all used material in a manner appropriate for biohazardous material.

### MATERIALS REQUIRED:

Lead Acetate Strips are sold 30 per bottle. Lead Acetate Strips require fresh 24 hour growth on media appropriate for the specimen. Consult a clinical microbiology manual for suggestions. The following items are required but not provided:  
Culture media containing sulphur (ex. KIA or TSIA) Inoculating loop

### PROCEDURE:

- (1) Inoculate a tube of media containing sulphur compounds.
- (2) Insert a Key Lead Acetate Strip between the plug and inner wall of the tube, above the level of the media.
- (3) Follow the directions of the media you are using for incubation length and temperature.
- (4) After incubation observe for blackening of the strip.

### INTERPRETATION OF RESULTS:

The blackening of the lead acetate strip indicates production of hydrogen sulfide gas in the tube. If the strip is touching the media, it may show a small amount of discoloration around the edges. This is mainly a problem when the organism has produced gas in the butt of a slant and pushed the media up the tube. You should disregard this discoloration as it is not a positive test. A true positive test will exhibit blackening of the interior of the strip as well as the edges.

### SOME EXPECTED REACTIONS:

Positive: *Proteus*, *Salmonella*  
(most serotypes),  
*Citrobacter freundii*  
Negative: *Citrobacter diversus*, *E. coli*,  
*Shigella* species, *Klebsiella*,  
*Enterobacter*, *Providencia*

### REFERENCES:

(1) Bailey and Scott's Diagnostic Microbiology, Fifth Edition, Chapter 43 "Reagents and Tests".



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