**TSI Reactions**

Acid reaction (A) = yellow color Alkaline reaction (K) = red color

Hydrogen Sulfide production (H2S) = black color or precipitate Gas production (G) = bubbles, cracks, or media displacement

|  |  |  |
| --- | --- | --- |
| **Reactions (slant/butt)** | **Symbol** | **Interpretation** |
| Yellow/Yellow | A/A | Glucose in addition to lactose and/or sucrose |
| Yellow/Yellow with gas production | A/A, G | Glucose in addition to lactose and/or sucrose, gas produced |
| Yellow/Yellow with black precipitate | A/A, H2S | Glucose in addition to lactose and/or sucrose, hydrogen sulfide produced |
| Red/Yellow | K/A | Glucose fermentation only |
| Red/Yellow with gas production | K/A, G | Glucose fermentation only, gas produced |
| Red/Yellow with black precipitate | K/A, H2S | Glucose fermentation only, hydrogen sulfide produced |
| Red/Yellow with gas production and black precipitate | K/A, G, H2S | Glucose fermentation only, gas produced, hydrogen sulfide produced |
| Red/Red | K/K | No carbohydrate fermentation (non-fermenter) |

****

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| A/A | A/A | A/A | K/A | K/A | K/A | K/A |  K/K |
|  | Gas |  |  | Gas |  | Gas |  |
|  |  | HydrogenSulfide |  |  | HydrogenSulfide | HydrogenSulfide |  |