

13005 Sulfate API Agar (Sulfat Reducing API Agar)

Sulfate API medium is used for detection and estimation of sulfate reducing bacteria as per American Petroleum Institute Recommended Practice. These bacteria are able to grow and reduce sulphate to sulphide in this medium.

Composition:

Ingredients	Grams/Litre
Yeast extract	1.0
Dipotassium phosphate	0.01
Ascorbic acid	0.1
Sodium chloride	10.0
Magnesium sulfate	0.2
Ferrous ammonium sulfate	0.1
Agar	14.0

Final pH 7.4 +/- 0.2 at 25°C

Store prepared media below 8°C, protected from direct light. Store dehydrated powder, in a dry place, in tightly-sealed containers at 2-25°C.

Directions:

Suspend 25.4 g in 1000 ml of purified water. Add 4 ml of sodium lactate solution (Fluka 71718; 60% in water, sterile filtered). Heat with frequent agitation to dissolve the medium completely. Dispense, preferably in screw-capped tubes in 9 ml amounts. Sterilize at 121°C for 10 minutes. Close the caps immediately while the medium is still hot.

Principle and Interpretation:

Sulfate API Agar is prepared according to the American Petroleum Institute (1) for detection of sulfate reducing bacteria. Sulfate-reducing bacteria cause corrosion of oil well systems resulting in perforations in the pipes. The bacteria reduce sulfate to sulfide which builds with the ferrous ions a black color complex. The insoluble iron sulfide results in plugging.

The detection and estimation of these bacteria is done on the basis of their ability to grow and produce sulfide in this medium. For the estimation, dilutions of water samples are inoculated.

Cultural characteristics after up to 1 week at 30°C, when incubated anaerobically

Organisms (ATCC)	Growth
<i>Desulfovibrio desulfuricans</i> (29577)	+++

References:

1. American Petroleum Institute Recommended Practice 28, First Ed.(1959)
2. U.S. Army Biological Laboratories, Fort Detrick, Frederick, Maryland, Growth of *Desulfovibrio* on the Surface of Agar Media, *Appl Microbiol.*, 14(4): 529–534 (1966)