

TM 053 – BUSHNELL HAAS BROTH

INTENDED USE

For examination of fuels for microbial contamination and hydrocarbon deterioration by bacteria.

PRODUCT SUMMARY AND EXPLANATION

Bushnell Haas Broth is prepared as per the formula of Bushnell and Haas and recommended for the microbiological examination of fuels by the SIM Committee on microbiological deteriorations of fuels. These media contain all nutrients except carbon source, necessary for the growth of bacteria. Only those bacteria that are able to decompose hydrocarbon will grow in these media. Specific carbon source i.e. hydrocarbon can be added to this medium and their utilization by different microorganisms can be studied. These bacteria can decompose a variety of hydrocarbons like kerosene, mineral oil, paraffin wax and gasoline. For liquid hydrocarbon the hydrocarbon is layered on the surface of inoculated agar. For testing volatile hydrocarbons such as gasoline the Petri-plates containing the medium are inverted and the hydrocarbon is poured into the lid.

COMPOSITION

Ingredients	Gms / Ltr
Magnesium sulphate	0.200
Calcium chloride anhydrous	0.020
Potassium dihydrogen phosphate	1.000
Dipotassium hydrogen phosphate	1.000
Ammonium nitrate	1.000
Ferric chloride	0.050

PRINCIPLE

Magnesium sulphate, calcium chloride and ferric chloride provide trace elements. Ammonium nitrate is a nitrogen source while Potassium dihydrogen phosphate and Dipotassium hydrogen phosphate buffers the medium.

INSTRUCTION FOR USE

- Dissolve 3.27 grams in 1000 ml purified / distilled water.
- Heat if necessary to dissolve the medium completely.
- Dispense into tubes or flasks as desired.
- Sterilize by autoclaving at 15 psi pressure (121°C) for 15 minutes.
- A white precipitate prior to sterilization becoming yellow to orange after sterilization is normal.

QUALITY CONTROL SPECIFICATIONS

Appearance of Powder	: White to cream homogeneous free flowing powder.
Appearance of prepared medium	: Colourless clear to slightly opalescent solution with slight brown precipitate in tubes.
pH (at 25°C)	: 7.0±0.2

INTERPRETATION

Cultural characteristics observed after incubation.



Microorganism	ATCC	Inoculum (CFU/ml)	Growth (plain)	Recovery (plain)	Growth w/minerals	Recovery (plain)	Incubation Temperature	Incubation Period
<i>Pseudomonas aeruginosa</i>	27853	50-100	Poor	10-20%	Good-luxuriant	>=50%	25-30°C	Within 1 week
<i>Pseudomonas aeruginosa</i>	9027	50-100	Poor	10-20%	Good-luxuriant	>=50%	25-30°C	Within 1 week

PACKAGING:

In pack size of 100 gm and 500 gm bottles.

STORAGE

Dehydrated powder, hygroscopic in nature, store in a dry place, in tightly-sealed containers between 25-30°C and protect from direct sunlight. Under optimal conditions, the medium has a shelf life of 4 years. When the container is opened for the first time, note the time and date on the label space provided on the container. After the desired amount of medium has been taken out replace the cap tightly to protect from hydration.










Product Deterioration: Do not use if they show evidence of microbial contamination, discoloration, drying or any other signs of deterioration.

DISPOSAL

After use, prepared plates, specimen/sample containers and other contaminated materials must be sterilized before discarding.

REFERENCES

- Allred, DeGray, Edwards, Hedrick, Klemme, Rogers, Wulf and Hodge, 1963, Proposed Procedures for Microbiological Examination of Fuels, SIM Special Publications, No. 1. Merck, Sharp & Dohme Research Laboratories, Rahway, N.J.
- Bushnell and Haas, 1941, J. Bacteriol., 41:653.

 GMP Good Manufacturing Practices Certified	 Best Before	 Quantity	 Catalogue Number	 Manufacturer
 Temperature Unit	 Lot / Batch Number	 Consults Instructions for Use	 QR Code	

NOTE: Please consult the Material Safety Data Sheet for information regarding hazards and safe handling Practices.

***For Lab Use Only**
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