Also known as
CHRISTENSEN Agar

Specification
Solid medium for the detection of urease, according to ISO standards and DIN standard.

Formula * in g/L
Gelatin peptone..... 1,000
Dextrose..... 1,000
Sodium chloride..... 5,000
Monopotassium phosphate..... 2,000
Phenol red..... 0,012
Agar..... 15,000

Final pH 7,0 ±0,2 at 25 ºC
* Adjusted and /or supplemented as required to meet performance criteria

Directions
Suspend 24 g of powder in 950 mL of distilled water and bring to the boil. Sterilize in the autoclave at 121°C for 15 minutes. Let it cool to 50-55°C. Add 50 mL of Urea Sterile Solution 40% (Art. DSHB3006) and mix well. Distribute aseptically in tubes and let them solidify in a slanted position.

Description
Urea Agar complies with Christensen's specifications, and is recommended for the detection of ureolytic or urea degrading microorganisms, especially Enterobacteriaceae, although it can be used with Gram positive bacteria.

Technique
A pure culture is inoculated by surface streaking, and then incubated à 37°C. Generally, organisms with strong urease activity can be read after 3-5 hours. Reaction is evident as the medium changes colour form orange to pink-fuchsia, due to a strong alkalinization produced by ammonia release.

Quality control
Incubation temperature: 37°C ±1.0 **Incubation time:** 5-18 h
Inoculum: ≥ 10³ CFU (specificity) according to ISO 11133:2014/Amd 1:2018 & Adm 2:2020

Microorganism	Growth	Remarks
Escherichia coli ATCC® 25922	Good to very good	Urease (-)
Salmonella typhimurium ATCC® 14028	Good to very good	Urease (-)
Proteus mirabilis ATCC® 29906	Good to very good	Urease (+)
Klebsiella pneumoniae ATCC® 13883	Good to very good	Urease (+)
Salmonella enteritidis ATCC® 13076	Good to very good	Urease (-)
Shigella sonnei ATCC® 9290	Good to very good	Urease (-)
Shigella flexneri ATCC® 12022	Good to very good	Urease (-)

References
· ATLAS, R.M. & L.C. PARK (1993) Handbook of Microbiological Media. CRC Press Inc. London.
· CHRISTENSEN W.B. (1946) Urea decomposition as means of differentiating Proteus and Paracolon cultures from each other and from Salmonella and Shigella types. J. Bact. 52:461.
· DIN Standard 10160. Untersuchung von Fleisch und Fleischerzeugnissen. Nachweis von Salmonellen. Referenzverfahren.
· DOWNES, F.P. & K. ITO (2001) Compendium of methods for the microbiological examination of foods. 4th ed. APHA. Washington DC. USA.
· EDWARDS & EWING (1962) Identificacion of Enterobacteriaceae Burgess Pub. Co.
· FIL-IDF 93 Standard (2001) Milk and Milk products. Detection of Salmonella.
· ISO 6340 Standard (1995) Water Quality - Detection of Salmonella spp.
· ISO Standard 6579-1 (2017) Microbiology of food chain - Horizontal method for the detection, enumeration and serotyping of Salmonella - Part 1 : Detection of Salmonella spp.
· ISO 6785 Standard (2001) Milk and Milk products - Detection of Salmonella spp.
· ISO 21567 Standard (2004) Microbiology of food and animal feeding stuffs.- Horizontal method for the detection of Shigella spp.
· MARSHALL, R.T. (1992) Standard methods for the examination of dairy products. 16th ed. APHA. Washington DC. USA.
. ISO 11133:2014/ Adm 1:2018/ Adm 2:2020/ Microbiology of food, animal feed and water. Preparation, production, storage and performance testing of culture media.

Storage
For laboratory use only. Keep tightly closed, away from bright light, in a cool dry place (+4 ºC to 30 ºC).