

## **Broth for Beer spoiling bacteria (BfB) with Indicator**

Version: 12/2020  
M&S item number: 4008 (25x20ml)  
Profile: Glass tubes  
Color: Reddish  
Storage: Dark and dry at 4 – 12 °C  
Shelf life: 8 months

### **Description and application range**

BfB-Broth with indicator used for enrichment, cultivation and detection of beer-spoiling bacteria and Non-Saccharomyces yeasts for all kinds of samples during brewing process and for quality control of finished products. The broth is also convenient for production hygiene to detect Lactobacilli and indicator bacteria.

The nutrient formulation of the broth especial promotes the growth of *Leuconostoc*,-*Pectinatus*,-*Pediococcus*-species and *Lactobacilli*. Non-Saccharomyces yeasts and some wild yeasts also grow in this broth. *Saccharomyces* culture yeasts are inhibited by Cycloheximide.

The inserted indicators make it easy to detect beer-spoiling bacteria through color changing of the broth from reddish to yellow. Non-Saccharomyces yeasts appear partly with explicit turbidity, intense foam formation while slewing and color changing from reddish to yellowish-brownish. Indicator bacteria appear with explicit turbidity and color changing from reddish to yellow at acid formation or from reddish to cherry-red/violet when growth is without forming acid. The medium is manufactured and quality tested in compliance with DIN EN ISO 11133:2014 + Amd 2:2020 standard.

Final pH: **6.3 ± 0.2** at 25 °C

### **Microbiological quality control**

#### **Bacterial contamination**

Incubation: aerobically at room temperature for 3 days, specification: no growth

#### **Productivity** qualitative analysis

Incubation: 1-6 days at 30 ± 1 °C, aerobically / microaerophilic

<b>Microorganism</b>	<b>Test strain</b>	<b>Specification</b>	<b>Appearance</b>
<i>Lactobacillus sakei</i>	WDCM 00015	Turbidity (2)	Turbidity and color change to yellow in 24h
<i>Lactobacillus lactis</i>	WDCM 00016	Turbidity (2)	Turbidity and color change to yellow in 24h
<i>Pediococcus damnosus</i>	DSM 20331	Turbidity (2)	Turbidity and color change to yellow in 72h
<i>Pediococcus pentosaceus</i>	DSM 20336	Turbidity (2)	Turbidity and color change to yellow in 24h
<i>Leuconostoc pseudomesenteroides</i>	DSM 20193	Turbidity (2)	Turbidity and color change to yellow in 24h

<i>Pectinatus spp.</i>	Wild strain, isolated from spoiled beer	Turbidity (2)	Turbidity, flocculation, gas forming, color change to dark yellow in 48 – 72h
<i>Enterobacter cloacae</i>	WDCM 00083	Turbidity (2)	Turbidity, intense CO <sub>2</sub> -forming, color change to yellow in 48 – 72h with cherry-red zone on top
<i>Escherichia coli</i>	WDCM 00179	Turbidity (2)	Turbidity and color change to yellow in 24h
<i>Pseudomonas aeruginosa</i>	WDCM 00024	Turbidity (1-2)	Turbidity, flocculation, flower formation, color change to violet in 72h
<i>Pseudomonas aeruginosa</i>	WDCM 00025	Turbidity (2)	Turbidity, flower formation, color change to brownish with violet zone on top
<i>Zygosaccharomyces rouxii</i>	DSM 7525	Turbidity (2)	Turbidity, color change to dark yellow in 6 days
<i>Schizosaccharomyces pombe</i>	DSM 70576	Turbidity (2)	Turbidity, color change to orange in 72h, to dark yellow in 6 days, foaming
Wild yeast	Wild strain, isolated from young wine	Turbidity (2)	Turbidity, color change to yellow in 48h, exuberant
<i>Saccharomyces cerevisiae</i>	WDCM 00058	No growth	Full inhibited after 7 days
<i>Saccharomyces cerevisiae</i>	DSM 70449	No growth	Full inhibited after 7 days



1 2 3 4 5 6 7

1. Control BfB-Broth not inoculated
2. BfB + 1ml Pils beer, inoculated with *Schizosaccharomyces pombe*
3. BfB + 1ml Pils beer, inoculated with *Pediococcus damnosus*
4. BfB + 1ml Pils beer, inoculated with *Leuconostoc pseudomesenteroides*
5. BfB + 1ml Pils beer, inoculated with *Pectinatus spp.*
6. BfB + 1ml Pils beer, inoculated with *Escherichia coli* WDCM 00179
7. BfB + 1ml Pils beer, inoculated with *Enterobacter cloacae*