

## xBmt-20190520 Hot Break Removal - 4.9%

### Munich Helles

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Type: All Grain

IBU : 21 (Tinseth)  
BU/GU : 0.41  
Colour : 11 EBC  
Carbonation : 2.8 CO2-vol

Pre-Boil Gravity : 1.037  
Original Gravity : 1.048  
Total Gravity : 1.050  
Final Gravity : 1.013

### Fermentables (1.24 kg)

1.026 kg - Pelton Pilsner-style Malt (Mecca G...  
181 g - Metolius Munich-style Malt (Mecca Gra...  
30 g - Opal 22 Graham & Cocoa Malt (Mecca Gra...  
32 g - Bottling - Sugar, Table (Sucrose) 2 EBC  
^ Albert Heijn (NL)

### Hops (3.3 g)

50 min - 3.3 g - Hallertau Magnum - 13.2% (21...

### Miscellaneous

Mash - 0.04 g - Baking Soda (NaHCO3)  
^ Lot # 41190621/3  
^ Brouwstore (NL) 003.106.2  
Mash - 0.78 g - Calcium Chloride (CaCl2) 33 %...  
^ Lot # 115038  
^ Brouwstore (NL) 055.035.0  
Mash - 0.78 g - Canning Salt (NaCl)  
^ Albert Heijn (NL)  
Mash - 0.2 g - Epsom Salt (MgSO4)  
^ Lot # /2119000091  
^ Brouwstore (NL) 055.027.7  
Mash - 0.2 g - Gypsum (CaSO4)  
^ The Malt Miller (UK) CHE-03-004  
Mash - 0.8 ml - Lactic Acid 80% 80%  
^ Lot # 20200213  
^ Brouwstore (NL) 003.002.3

### Yeast

0 ml - Imperial Yeast Harvest L17

### 01 Brouwpunt 5L (60min) (rev 4)

Batch Size : 5.6 L  
Boil Size : 7.76 L  
Post-Boil Vol : 5.96 L

Mash Water : 3.71 L  
Sparge Water : 5.36 L  
Boil Time : 60 min  
Total Water : 9.07 L



11 EBC

Brewhouse Efficiency: 71.8%

Mash Efficiency: 73.3%

### Mash Profile

Single Infusion, Medium Body  
72.9 °C - Strike Temp  
66.7 °C - 60 min - Mash In  
75.6 °C - 10 min - Mash Out

### Fermentation Profile

Imported  
19.4 °C - 10 days - Primary  
19.4 °C - 10 days - Secondary  
18.3 °C - 7 days - Conditioning

### Water Profile

02 NL Spa Reine Flat Mineral Water (www.ah.nl...  
Ca 20 Mg 4 Na 38 Cl 75 SO 25

SO/Cl ratio: 0.3

Mash pH: 5.4

Sparge pH: 6

### Measurements

Mash pH:

Boil Volume:

Pre-Boil Gravity:

Post-Boil Kettle Volume:

Original Gravity:

Fermenter Top-Up:

Fermenter Volume:

Final Gravity:

Bottling Volume:

### Recipe Notes

Water Profile: Ca 53 | Mg 0 | Na 30 | SO4 75 | Cl 75

<https://brulosophy.com/2019/05/20/the-impact-of-removing-hot-break-during-the-boil-exbeeriment-results/>