

## North German Style Pils - 4.5%

### German Pils

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Type: All Grain

IBU : 48 (Tinseth)  
 BU/GU : 1.06  
 Colour : 5 EBC  
 Carbonation : 2.8 CO2-vol

Pre-Boil Gravity : 1.031  
 Original Gravity : 1.045  
 Final Gravity : 1.011

### Fermentables (1.14 kg)

1.039 kg - Pilsen Malt 2-Row 2 EBC (91.1%)  
 101 g - Carapils 4 EBC (8.9%)  
 ^ Lot # 694-201130-111430-176081-1/1  
 ^ The Malt Miller (UK) MAL-01-016

### Hops (23 g)

First Wort - 4.5 g - Tettnang - 4.5% (13 IBU)  
 First Wort - 2.8 g - Hallertauer Mittelfrueh...  
 ^ The Malt Miller (UK) HOP-06-008  
 90 min - 7.1 g - Tettnang - 4.5% (18 IBU)  
 90 min - 2.4 g - Hallertauer Mittelfrueh (T90...  
 ^ The Malt Miller (UK) HOP-06-008  
 10 min - 6.2 g - Hallertauer Mittelfrueh (T90...  
 ^ The Malt Miller (UK) HOP-06-008

### Miscellaneous

Mash - 0.04 g - Baking Soda (NaHCO3)  
 ^ Lot # 41190621/3  
 ^ Brouwstore (NL) 003.106.2  
 Mash - 0.86 g - Calcium Chloride (CaCl2) 33 %...  
 ^ Lot # 115038  
 ^ Brouwstore (NL) 055.035.0  
 Mash - 0.84 g - Canning Salt (NaCl)  
 ^ Albert Heijn (NL)  
 Mash - 1 g - Epsom Salt (MgSO4)  
 ^ Lot # /2119000091  
 ^ Brouwstore (NL) 055.027.7  
 Mash - 1 g - Gypsum (CaSO4)  
 ^ The Malt Miller (UK) CHE-03-004  
 Mash - 0.6 ml - Lactic Acid 80% 80%  
 ^ Lot # 20200213  
 ^ Brouwstore (NL) 003.002.3

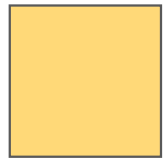
### Yeast

0.6 pkg - Mangrove Jack's Bavarian Lager M76

### 01 Brouwpunt 5L (90min) (rev 4)

Batch Size : 5.6 L  
 Boil Size : 8.66 L  
 Post-Boil Vol : 5.96 L

Mash Water : 3.42 L  
 Sparge Water : 6.45 L  
 Boil Time : 90 min  
 Total Water : 9.87 L



5 EBC

Brewhouse Efficiency: 71.8%  
 Mash Efficiency: 73.3%

### Mash Profile

01 One Step Mash (95 min)  
 72.1 °C - Strike Temp  
 66 °C - 95 min - Temperature

### Fermentation Profile

Lager (Standard)  
 11 °C - 18 days - Primary  
 15 °C - 3 days - Primary

### Water Profile

02 NL Spa Reine Flat Mineral Water (www.ah.nl...  
 Ca 39 Mg 12 Na 38 Cl 75 SO 100

SO/Cl ratio: 1.3  
 Mash pH: 5.39  
 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

Target: ABV = 4.8 %, IBU = 45, EBC = 4, OG = 1.047, FG = 1.011.