

AnOtter Munich Helles (SMaSH) - 5%

Munich Helles
Author: The Thirsty Otter

Type: All Grain

IBU : 17 (Tinseth)
BU/GU : 0.39
Colour : 6 EBC
Carbonation : 2.5 CO2-vol

Pre-Boil Gravity : 1.029
Original Gravity : 1.042
Total Gravity : 1.045
Final Gravity : 1.007

Fermentables (1.08 kg)
1.075 kg - Swaen Pilsner 3.7 EBC (100%)
^ Brouwmaatje (NL) BM-SWAENPILSNER1
28 g - Bottling - Sugar, Table (Sucrose) 2 EBC
^ Albert Heijn (NL)

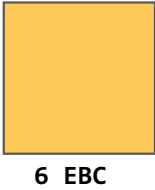
Hops (14 g)
60 min - 7 g - Saaz - 3.6% (13 IBU)
^ Lot # T9020044SAA
^ Brouwmaatje (NL) BM-HUM.420000 Humlegarden...
10 min - 7 g - Saaz - 3.6% (4 IBU)
^ Lot # T9020044SAA
^ Brouwmaatje (NL) BM-HUM.420000 Humlegarden...

Miscellaneous
Mash - 0.03 g - Baking Soda (NaHCO3)
^ Lot # 41190621/3
^ Brouwstore (NL) 003.106.2
Mash - 2.05 g - Calcium Chloride (CaCl2) 33 %...
^ Lot # 115038
^ Brouwstore (NL) 055.035.0
Mash - 0.03 g - Canning Salt (NaCl)
^ Albert Heijn (NL)
Mash - 0.3 g - Epsom Salt (MgSO4)
^ Lot # /2119000091
^ Brouwstore (NL) 055.027.7
Mash - 0.78 g - Gypsum (CaSO4)
^ The Malt Miller (UK) CHE-03-004
Mash - 1 ml - Lactic Acid 80% 80%
^ Lot # 20200213
^ Brouwstore (NL) 003.002.3

Yeast
0.8 pkg - Fermentis Saflager Lager W-34/70

01 Brouwpunt 5L (90min) (rev 4)
Batch Size : 5.6 L
Boil Size : 8.66 L
Post-Boil Vol : 5.96 L

Mash Water : 3.22 L
Sparge Water : 6.59 L
Boil Time : 90 min
Total Water : 9.81 L



Brewhouse Efficiency: 71.8%
Mash Efficiency: 73.3%

Mash Profile
Munich Helles Step Mash
37 °C - Strike Temp
35 °C - 0 min - Dough In
52 °C - 30 min - Protein Rest Low
63 °C - 30 min - Beta Amalaysse
72 °C - 30 min - Alpha Amalaysse
78 °C - 10 min - Mashout

Fermentation Profile
Lager
8 °C - 0 days - Pitch
10 °C - 21 days - Free rise to 10c and hold
13 °C - 7 days - Diacetyl rest
2 °C - 3 days - Cold Crash
2 °C - 28 days - Conditioning
2 °C - 7 days - Carbonation

Water Profile
02 NL Spa Reine Flat Mineral Water (www.ah.nl...
Ca 48 Mg 5 Na 5 Cl 51 SO 60 HCO 19

SO/Cl ratio: 1.2
Mash pH: 5.21
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:

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Recipe Notes

Adapted for local malts and hops.

Original recipe by: Oskar Long / Westburn Brewing

Avoid shitty Brewfather water calculations and use Brun Water

Water: RO water: all figures in PPM Calcium: 54, Magnesium: 5, Sodium: 5, Sulfate: 51, Chloride: 60, So4/CL ratio 0.8

Great video for making a lager water profile: <https://www.youtube.com/watch?v=5dNszuyjShQ>

Mash: 5.18pH, Dough in at 35 C to make sure grains are mixed in properly before the first rest. You can avoid and mash in at 52 C for the first rest

Boil: Boil long and at a high pH to avoid DMS, which Weyermann pilsner malt produces a lot of. Add your sparge salts 10 minutes to the end of the boil to bring it down to a pH of 5.2. Cool as quickly as possible

Fermentation:

Pitch low at 8 C and let it free rise to 10 C. Pitch big and aim for a 1.75 million/ml pitch rate

Once near FG, let it free rise to 10 degrees C

Near terminal gravity give it a diacetyl rest at 13 C

Aiming for a final beer pH of 4.1-4.2

Lagered beer at 2 C for 4 weeks to clean up the beer

Added Biofine to the keg prior to transfer

Carbonated at 2 C for 7 days

Be patient with this beer and you will be rewarded!

Email me at long.oskar@gmail.com if you have any questions about this recipe!