

## Ragnarok - 5.4%

### International Amber Lager

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Type: All Grain

IBU	: 26 (Tinseth)
BU/GU	: 0.48
Colour	: 18 EBC
Carbonation	: 2.5 CO <sub>2</sub> -vol

Pre-Boil Gravity	: 1.041
Original Gravity	: 1.054
Final Gravity	: 1.013

### Fermentables (1.47 kg)

1.467 kg - Floor-Malted Bohemian Dark Malt 16...

### Hops (16 g)

First Wort 60 - 7.6 g - Brewer's Gold (T90) - ...  
 ^ The Malt Miller (UK) HOP-06-011  
 15 min - 8.4 g - Hallertauer Mittelfrueh (T90...  
 ^ The Malt Miller (UK) HOP-06-008

### Miscellaneous

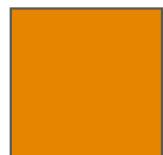
Mash - 0.17 g - Baking Soda (NaHCO<sub>3</sub>)  
 ^ Lot # 41190621/3  
 ^ Brouwstore (NL) 003.106.2  
 Mash - 2.14 g - Calcium Chloride (CaCl<sub>2</sub>) 33 %...  
 ^ Lot # 115038  
 ^ Brouwstore (NL) 055.035.0  
 Mash - 0.16 g - Canning Salt (NaCl)  
 ^ Albert Heijn (NL)  
 Mash - 0.28 g - Epsom Salt (MgSO<sub>4</sub>)  
 ^ Lot # /2119000091  
 ^ Brouwstore (NL) 055.027.7  
 Mash - 0.64 g - Gypsum (CaSO<sub>4</sub>)  
 ^ The Malt Miller (UK) CHE-03-004  
 Mash - 0.1 ml - Lactic Acid 80% 80%  
 ^ Lot # 20200213  
 ^ Brouwstore (NL) 003.002.3  
 15 min - Boil - 0.28 items - Protafloc

### Yeast

0.3 pkg - White Labs German Lager X WLP835

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

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



18 EBC

Mash Water	: 4.4 L
Sparge Water	: 4.89 L
Boil Time	: 60 min
Total Water	: 9.29 L

Brewhouse Efficiency: 71.8%

Mash Efficiency: 73.3%

### Mash Profile

01 One Step Mash (60 min)  
 71 °C - Strike Temp  
 65 °C - 60 min - Temperature

### Fermentation Profile

01 Ale + DR + Conditioning  
 18 °C - 10 days - Primary  
 21 °C - 4 days - Diacetyl rest  
 18 °C - 14 days - Carbonation  
 18 °C - 28 days - Conditioning

### Water Profile

02 NL Spa Reine Flat Mineral Water ([www.ah.nl...](http://www.ah.nl...)  
 Ca 48 Mg 5 Na 15 Cl 64 SO 54 HCO 30

SO/Cl ratio: 0.9

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

target: IBU = 30, OG = 1.054, FG = 1.010.

Reduce -HCO<sub>3</sub> to around 40 ppm.