

GMT

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **37**
- SRM **11**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

Batch size

- Expected quantity of finished beer **8.5 liter(s)**
- Trub loss **5 %**
- Size with trub loss **8.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **10.8 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.1 liter(s) / kg**
- Mash size **5.8 liter(s)**
- Total mash volume **7.7 liter(s)**

Steps

- Temp **65 C**, Time **65 min**
- Temp **75 C**, Time **5 min**

Mash step by step

- Heat up **5.8 liter(s)** of strike water to **72.3C**
- Add grains
- Keep mash **65 min** at **65C**
- Keep mash **5 min** at **75C**
- Sparge using **6.9 liter(s)** of **76C** water or to achieve **10.8 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------|----------------|-------|------|
| Grain | Briess - Rye Malt | 0.2 kg (10.6%) | 80 % | 7 |
| Grain | Briess - Pale Ale Malt | 1.6 kg (85.1%) | 80 % | 7 |
| Grain | Briess - Black Barley | 0.03 kg (1.6%) | 55 % | 1300 |
| Grain | Caramel/Crystal Malt - 30L | 0.05 kg (2.7%) | 75 % | 59 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|---------|--------|--------|------------|
| Aroma (end of boil) | Fuggles | 25 g | 25 min | 5.9 % |
| Boil | Fuggles | 15 g | 10 min | 5.9 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale | Dry | 5 g | Safale |