

APA zacier

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **42**
- SRM **4.4**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **27 liter(s)**
- Trub loss **5 %**
- Size with trub loss **28.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **34.2 liter(s)**

Mash information

- Mash efficiency **97 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **17.5 liter(s)**
- Total mash volume **22.5 liter(s)**

Steps

- Temp **51 C**, Time **15 min**
- Temp **62 C**, Time **15 min**
- Temp **72 C**, Time **45 min**

Mash step by step

- Heat up **17.5 liter(s)** of strike water to **55.4C**
- Add grains
- Keep mash **15 min** at **51C**
- Keep mash **15 min** at **62C**
- Keep mash **45 min** at **72C**
- Sparge using **21.7 liter(s)** of **76C** water or to achieve **34.2 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------|-------------|-------|-----|
| Grain | Castle Pale Ale | 5 kg (100%) | 80 % | 8 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|------------|--------|--------|------------|
| Boil | Iunga | 10 g | 30 min | 10.5 % |
| Boil | Galaxy | 10 g | 10 min | 13.6 % |
| Boil | Centennial | 20 g | 10 min | 9.1 % |
| Boil | Topaz | 20 g | 10 min | 17.6 % |
| Boil | Galaxy | 10 g | 5 min | 13.6 % |
| Boil | Centennial | 30 g | 5 min | 9.1 % |
| Boil | Topaz | 30 g | 5 min | 17.6 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|----------------------|-------|-------|--------|------------------|
| FM31 Bawarska Dolina | Lager | Slant | 200 ml | Fermentum Mobile |