

gratis apa

- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **58**
- SRM **4.4**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **16.4 liter(s)**
- Total mash volume **21.1 liter(s)**

Steps

- Temp **66 C**, Time **70 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **16.4 liter(s)** of strike water to **72.6C**
- Add grains
- Keep mash **70 min** at **66C**
- Keep mash **10 min** at **78C**
- Sparge using **14.7 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------------|----------------|-------|-----|
| Grain | Viking Pale Ale malt | 3.5 kg (74.5%) | 80 % | 5 |
| Grain | Viking Vienna Malt | 1 kg (21.3%) | 79 % | 7 |
| Grain | Karmelowy Jasny 30EBC | 0.2 kg (4.3%) | 75 % | 30 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|----------|--------|----------|------------|
| Boil | Citra | 30 g | 60 min | 12 % |
| Boil | Citra | 15 g | 30 min | 12 % |
| Boil | Citra | 10 g | 5 min | 12 % |
| Aroma (end of boil) | Amarillo | 10 g | 1 min | 9.5 % |
| Dry Hop | Amarillo | 60 g | 5 day(s) | 9.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale | Dry | 11.5 g | Safale |

Extras

| Type | Name | Amount | Use for | Time |
|------|------|--------|---------|------|
|------|------|--------|---------|------|

| | | | | |
|--------|--------------|-------|------|--------|
| Fining | whirlfloc | 1 g | Boil | 15 min |
| Other | łuska ryżowa | 500 g | Mash | 80 min |