

APA v4 #84

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **34**
- SRM **4.6**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21.4 liter(s)**
- Boil time **90 min**
- Evaporation rate **12 %/h**
- Boil size **25.7 liter(s)**

Mash information

- Mash efficiency **80.9 %**
- Liquor-to-grist ratio **4.53 liter(s) / kg**
- Mash size **20.1 liter(s)**
- Total mash volume **24.5 liter(s)**

Steps

- Temp **66 C**, Time **45 min**
- Temp **72 C**, Time **30 min**
- Temp **75 C**, Time **7 min**

Mash step by step

- Heat up **20.1 liter(s)** of strike water to **71.1C**
- Add grains
- Keep mash **45 min** at **66C**
- Keep mash **30 min** at **72C**
- Keep mash **7 min** at **75C**
- Sparge using **10 liter(s)** of **76C** water or to achieve **25.7 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|-----------------------|------------------|--------|-----|
| Grain | Mep©Ale | 3 kg (67.7%) | 82.1 % | 6 |
| Grain | Viking - pilzneński | 0.6 kg (13.5%) | 80 % | 4 |
| Grain | Viking - rye malt | 0.018 kg (0.4%) | 81 % | 8 |
| Grain | Bruntal - pszeniczny | 0.613 kg (13.8%) | 83 % | 5 |
| Grain | Weyermann - Carabelge | 0.2 kg (4.5%) | 74 % | 30 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|------------|--------|----------|------------|
| Boil | Warrior | 12 g | 60 min | 14.7 % |
| Aroma (end of boil) | Ekuanot | 15 g | 10 min | 13.1 % |
| Aroma (end of boil) | Mosaic | 20 g | 5 min | 10.4 % |
| Aroma (end of boil) | Cascade US | 30 g | 1 min | 6.9 % |
| Dry Hop | Ekuanot | 20 g | 3 day(s) | 13.1 % |
| Dry Hop | Cascade US | 25 g | 3 day(s) | 6.9 % |
| Dry Hop | Mosaic | 15 g | 3 day(s) | 10.4 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|-----------------------------|------|-------|--------|------------------|
| FM54 Gorączka kalifornijska | Ale | Slant | 145 ml | Fermentum Mobile |

Extras

| Type | Name | Amount | Use for | Time |
|-------------|------------------------|--------|---------|-------|
| Water Agent | gips | 2 g | Mash | --- |
| Water Agent | kwask mlekowy 80% [ml] | 4.24 g | Mash | --- |
| Water Agent | chlorek wapnia [ml] | 5.14 g | Mash | --- |
| Water Agent | epsom | 1.5 g | Mash | --- |
| Water Agent | mech irlandzki | 3 g | Boil | 5 min |