

## 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 |