

APA

- Gravity **13.3 BLG**
- ABV ---
- IBU **64**
- SRM **4.1**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **45 liter(s)**
- Trub loss **5 %**
- Size with trub loss **47.3 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **57.8 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **32.4 liter(s)**
- Total mash volume **43.2 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **0 min**

Mash step by step

- Heat up **32.4 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **0 min** at **78C**
- Sparge using **36.2 liter(s)** of **76C** water or to achieve **57.8 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------|---------------|-------|-----|
| Grain | Pilzneński | 6 kg (55.6%) | 81 % | 4 |
| Grain | Viking Pale Ale malt | 3 kg (27.8%) | 80 % | 6 |
| Grain | Weyermann - Carapils | 0.5 kg (4.6%) | 78 % | 4 |
| Grain | Żytni | 0.3 kg (2.8%) | 85 % | 8 |
| Grain | Płatki owsiane | 1 kg (9.3%) | 85 % | 3 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|------------------------|--------|--------|------------|
| Boil | Columbus/Tomahawk/Zeus | 30 g | 50 min | 15.5 % |
| Boil | Amarillo | 10 g | 25 min | 9.5 % |
| Boil | Citra | 10 g | 25 min | 12 % |
| Boil | Galaxy | 10 g | 25 min | 15 % |
| Boil | Centennial | 10 g | 25 min | 10.5 % |
| Boil | Amarillo | 30 g | 10 min | 9.5 % |
| Boil | Galaxy | 30 g | 10 min | 15 % |
| Boil | Citra | 30 g | 10 min | 12 % |
| Boil | Centennial | 20 g | 10 min | 10.5 % |

| | | | | |
|-----------|------------|------|----------|--------|
| Whirlpool | Amarillo | 20 g | 1 min | 9.5 % |
| Whirlpool | Galaxy | 20 g | 1 min | 15 % |
| Whirlpool | Citra | 20 g | 1 min | 12 % |
| Whirlpool | Centennial | 20 g | 1 min | 10.5 % |
| Dry Hop | Amarillo | 30 g | 3 day(s) | 9.5 % |
| Dry Hop | Galaxy | 30 g | 3 day(s) | 15 % |
| Dry Hop | Citra | 30 g | 3 day(s) | 12 % |
| Dry Hop | Centennial | 50 g | 3 day(s) | 10.5 % |

Yeasts

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

Extras

| Type | Name | Amount | Use for | Time |
|-------------|------|--------|---------|--------|
| Water Agent | gips | 4 g | Boil | 60 min |