

Apa vol.2.2

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **44**
- SRM **3.8**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **40 liter(s)**
- Trub loss **5 %**
- Size with trub loss **42 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **50.6 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.14 liter(s) / kg**
- Mash size **31.7 liter(s)**
- Total mash volume **41.8 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **31.7 liter(s)** of strike water to **74.5C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **5 min** at **78C**
- Sparge using **29 liter(s)** of **76C** water or to achieve **50.6 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	9 kg (89.1%)	81 %	4
Grain	Strzegom Karmel 30	0.1 kg (1%)	75 %	30
Grain	Pszeniczny	1 kg (9.9%)	85 %	4

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	20 g	45 min	15.5 %
Boil	Centennial	50 g	45 min	5.4 %
Aroma (end of boil)	Columbus/Tomahawk/Zeus	20 g	15 min	15.5 %
Aroma (end of boil)	Cascade	50 g	5 min	3.2 %
Aroma (end of boil)	Centennial	80 g	5 min	5.4 %
Aroma (end of boil)	Columbus/Tomahawk/Zeus	10 g	0 min	15.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11.5 g	Safale
Safale S-04	Ale	Dry	11.5 g	Safale