

Ale

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **35**
- SRM **4.8**
- Style **American Pale Ale**

Batch size

- Expected quantity of finished beer **80 liter(s)**
- Trub loss **5 %**
- Size with trub loss **84 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **101.2 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **64.8 liter(s)**
- Total mash volume **83.3 liter(s)**

Steps

- Temp **52 C**, Time **10 min**
- Temp **62 C**, Time **20 min**
- Temp **72 C**, Time **40 min**
- Temp **78 C**, Time **5 min**

Mash step by step

- Heat up **64.8 liter(s)** of strike water to **56.6C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **20 min** at **62C**
- Keep mash **40 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **54.9 liter(s)** of **76C** water or to achieve **101.2 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	13 kg (70.3%)	81 %	4
Grain	Monachijski	4 kg (21.6%)	80 %	16
Grain	Pszeniczny	1 kg (5.4%)	85 %	4
Grain	Strzegom Karmel 30	0.5 kg (2.7%)	75 %	30

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Chinook	70 g	60 min	11.7 %
Aroma (end of boil)	Centennial	100 g	10 min	9.5 %
Aroma (end of boil)	Cascade	50 g	10 min	5.8 %

Yeasts

Name	Type	Form	Amount	Laboratory
Us-05	Ale	Dry	34.5 g	---