

# Piwo Czekoladowe

- Gravity **14.7 BLG**
- ABV **6.1 %**
- IBU **21**
- SRM **21.1**

## Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **4 %**
- Size with trub loss **23.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.4 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **23.6 liter(s)**
- Total mash volume **30.4 liter(s)**

## Steps

- Temp **69 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

## Mash step by step

- Heat up **23.6 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **69C**
- Keep mash **10 min** at **76C**
- Sparge using **10.6 liter(s)** of **76C** water or to achieve **27.4 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale	5 kg (74.1%)	80 %	7
Grain	Weyermann Caramunich 3	0.3 kg (4.4%)	76 %	150
Grain	Brown	0.25 kg (3.7%)	75 %	185
Grain	Słód Chocolate	0.2 kg (3%)	70 %	1200
Grain	Płatki owsiane	1 kg (14.8%)	60 %	3

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Willamette	20 g	60 min	5.2 %
Aroma (end of boil)	Summit	15 g	15 min	15.8 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Us-04	Ale	Slant	100 ml	---

## Extras

Type	Name	Amount	Use for	Time
Spice	Cacao	100 g	Boil	10 min

Flavor	Esencja o smaku czekoladowym	80 g	Secondary	10 day(s)
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