

# 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) |
|--------|------------------------------|------|-----------|-----------|