

## P california lager

- Gravity **13.1 BLG**
- ABV **5.3 %**
- IBU **33**
- SRM **5**
- Style **Bohemian Pilsener**

### Batch size

- Expected quantity of finished beer **43 liter(s)**
- Trub loss **5 %**
- Size with trub loss **45.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **54.5 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **34.2 liter(s)**
- Total mash volume **45.6 liter(s)**

### Steps

- Temp **63 C**, Time **20 min**
- Temp **68 C**, Time **20 min**
- Temp **75 C**, Time **20 min**

### Mash step by step

- Heat up **34.2 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **20 min** at **63C**
- Keep mash **20 min** at **68C**
- Keep mash **20 min** at **75C**
- Sparge using **31.7 liter(s)** of **76C** water or to achieve **54.5 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	10 kg (87.7%)	80 %	4
Grain	Strzegom Monachijski typ II	1 kg (8.8%)	79 %	22
Grain	Strzegom Karmel 30	0.4 kg (3.5%)	75 %	30

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Bravo	40 g	60 min	13.7 %
Boil	Lublin (Lubelski)	40 g	10 min	4 %
Boil	Bravo	10 g	10 min	13.7 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M54 California Lager Yeast	Lager	Dry	20 g	Mangrove Jack's