

## Kowalik (Bitter)

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- Gravity **10.5 BLG**
- ABV **4.2 %**
- IBU **37**
- SRM **12.1**
- Style **Special/Best/Premium Bitter**

### Batch size

- Expected quantity of finished beer **15 liter(s)**
- Trub loss **5 %**
- Size with trub loss **15.8 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **19 liter(s)**

### Mash information

- Mash efficiency **60 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **11.1 liter(s)**
- Total mash volume **14.8 liter(s)**

### Steps

- Temp **66 C**, Time **50 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **11.1 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **50 min** at **66C**
- Keep mash **10 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **11.6 liter(s)** of **76C** water or to achieve **19 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	2.5 kg (67.6%)	85 %	7
Grain	Weyermann - Light Munich Malt	1 kg (27%)	82 %	14
Grain	Caraaroma	0.2 kg (5.4%)	78 %	400

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Sovereign	30 g	60 min	6.1 %
Boil	Fusion UK	30 g	10 min	4.57 %

### Yeasts

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

### Notes

- Piwo bardzo udane. Może ździebko zbyt karmelowe.  
*Apr 24, 2019, 11:56 AM*