

# kozak

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- Gravity **10.5 BLG**
- ABV **4.2 %**
- IBU **19**
- SRM **5.4**
- Style **German Pilsner (Pils)**

## Batch size

- Expected quantity of finished beer **19 liter(s)**
- Trub loss **5 %**
- Size with trub loss **19.9 liter(s)**
- Boil time **70 min**
- Evaporation rate **5 %/h**
- Boil size **23.2 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **14 liter(s)**
- Total mash volume **18 liter(s)**

## Steps

- Temp **54 C**, Time **15 min**
- Temp **62 C**, Time **50 min**
- Temp **72 C**, Time **15 min**

## Mash step by step

- Heat up **14 liter(s)** of strike water to **58.9C**
- Add grains
- Keep mash **15 min** at **54C**
- Keep mash **50 min** at **62C**
- Keep mash **15 min** at **72C**
- Sparge using **13.2 liter(s)** of **76C** water or to achieve **23.2 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	2 kg (50%)	80 %	4
Grain	Strzegom Wiedeński	1 kg (25%)	79 %	10
Grain	Strzegom Monachijski typ II	1 kg (25%)	79 %	22

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	15 g	30 min	9.5 %
Boil	Target	10 g	5 min	10.5 %
Aroma (end of boil)	Marynka	10 g	5 min	9.5 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Fermentis Safbrew BE-256	Lager	Dry	11.5 g	Fermentis