

## Pils (K)

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- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **28**
- SRM **3.9**
- Style **German Pilsner (Pils)**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **80 min**
- Evaporation rate **15 %/h**
- Boil size **28.8 liter(s)**

### Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **4 liter(s) / kg**
- Mash size **21.2 liter(s)**
- Total mash volume **26.5 liter(s)**

### Steps

- Temp **46 C**, Time **1 min**
- Temp **50 C**, Time **10 min**
- Temp **67 C**, Time **60 min**
- Temp **76 C**, Time **15 min**

### Mash step by step

- Heat up **21.2 liter(s)** of strike water to **49.3C**
- Add grains
- Keep mash **1 min** at **46C**
- Keep mash **10 min** at **50C**
- Keep mash **60 min** at **67C**
- Keep mash **15 min** at **76C**
- Sparge using **12.9 liter(s)** of **76C** water or to achieve **28.8 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	BESTMALZ - Pilsneński	5 kg (94.3%)	80.5 %	4
Grain	Bestmalz - Monachijski	0.2 kg (3.8%)	80 %	16
Grain	Cara-Pils/Dextrine	0.1 kg (1.9%)	72 %	4

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Hersbrucker	20 g	30 min	4.1 %
Boil	Tettnang	10 g	30 min	4 %
Boil	Hersbrucker	20 g	20 min	4.1 %
Boil	Tettnang	15 g	20 min	4 %
Aroma (end of boil)	Hersbrucker	20 g	10 min	4.1 %
Aroma (end of boil)	Tettnang	15 g	10 min	4 %
Aroma (end of boil)	Hersbrucker	20 g	5 min	4.1 %
Aroma (end of boil)	Tettnang	10 g	5 min	4 %
Aroma (end of boil)	Hersbrucker	20 g	1 min	4.1 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Oslo	Ale	Slant	50 ml	Priv
Fermentacja w temperaturze 25-28				

## Extras

Type	Name	Amount	Use for	Time
Fining	Whirlfloc	1.25 g	Boil	5 min
Water Agent	Kwas fosforowy 75%	5 g	Boil	75 min