

## German PA

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- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **54**
- SRM **5.5**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **12.5 liter(s)**
- Trub loss **4 %**
- Size with trub loss **13 liter(s)**
- Boil time **70 min**
- Evaporation rate **20 %/h**
- Boil size **16.5 liter(s)**

### Mash information

- Mash efficiency **79 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **9.2 liter(s)**
- Total mash volume **11.8 liter(s)**

### Steps

- Temp **76 C**, Time **10 min**
- Temp **68 C**, Time **60 min**

### Mash step by step

- Heat up **9.2 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **10 min** at **76C**
- Sparge using **9.9 liter(s)** of **76C** water or to achieve **16.5 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	1.5 kg (57.1%)	80 %	4
Grain	Strzegom Monachijski typ I	1 kg (38.1%)	79 %	16
Grain	Caramel/Crystal Malt - 10L	0.125 kg (4.8%)	75 %	20

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Mandarina Bavaria	10 g	30 min	10 %
Boil	Ariana	10 g	30 min	12.1 %
Boil	Mandarina Bavaria	10 g	15 min	10 %
Boil	Ariana	10 g	15 min	12.1 %
Aroma (end of boil)	Mandarina Bavaria	10 g	0 min	10 %
Aroma (end of boil)	Ariana	10 g	0 min	12.1 %
Dry Hop	Mandarina Bavaria	20 g	5 day(s)	10 %
Dry Hop	Ariana	20 g	5 day(s)	12.1 %
Dry Hop	Smaragd	50 g	5 day(s)	3.9 %

### Yeasts

<b>Name</b>	<b>Type</b>	<b>Form</b>	<b>Amount</b>	<b>Laboratory</b>
K-97 German ale	Ale	Dry	5 g	Safale

### **Extras**

<b>Type</b>	<b>Name</b>	<b>Amount</b>	<b>Use for</b>	<b>Time</b>
Water Agent	Gips piwowarski	2 g	Mash	60 min