

German PA

- 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

Name	Type	Form	Amount	Laboratory
K-97 German ale	Ale	Dry	5 g	Safale

Extras

Type	Name	Amount	Use for	Time
Water Agent	Gips piwowarski	2 g	Mash	60 min