

makos

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **16**
- SRM **21.8**
- Style **Dunkelweizen**

Batch size

- Expected quantity of finished beer **10 liter(s)**
- Trub loss **5 %**
- Size with trub loss **10.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **12.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **5 liter(s) / kg**
- Mash size **13 liter(s)**
- Total mash volume **15.6 liter(s)**

Steps

- Temp **46 C**, Time **10 min**
- Temp **53 C**, Time **10 min**
- Temp **63 C**, Time **40 min**
- Temp **73 C**, Time **10 min**

Mash step by step

- Heat up **13 liter(s)** of strike water to **48.6C**
- Add grains
- Keep mash **10 min** at **46C**
- Keep mash **10 min** at **53C**
- Keep mash **40 min** at **63C**
- Keep mash **10 min** at **73C**
- Sparge using **2.3 liter(s)** of **76C** water or to achieve **12.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pszeniczny	1.3 kg (50%)	81 %	6
Grain	Pilzneński	0.9 kg (34.6%)	81 %	4
Grain	Strzegom Karmel 300	0.3 kg (11.5%)	70 %	299
Grain	Czekoladowy	0.1 kg (3.8%)	60 %	788

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Cascade	20 g	20 min	6 %
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Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Wheat	Dry	5 g	Safale