

## # 9

- Gravity **8.8 BLG**
- ABV **3.4 %**
- IBU **18**
- SRM **3.2**
- Style **Grodziskie/Graetzer**

### Batch size

- Expected quantity of finished beer **15.6 liter(s)**
- Trub loss **5 %**
- Size with trub loss **16.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **19.7 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **7.85 liter(s) / kg**
- Mash size **20.4 liter(s)**
- Total mash volume **23 liter(s)**

### Steps

- Temp **50 C**, Time **10 min**
- Temp **62 C**, Time **60 min**
- Temp **72 C**, Time **25 min**
- Temp **77 C**, Time **10 min**

### Mash step by step

- Heat up **20.4 liter(s)** of strike water to **51.9C**
- Add grains
- Keep mash **10 min** at **50C**
- Keep mash **60 min** at **62C**
- Keep mash **25 min** at **72C**
- Keep mash **10 min** at **77C**
- Sparge using **1.9 liter(s)** of **76C** water or to achieve **19.7 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pszeniczny	2 kg (76.9%)	85 %	5
Grain	Grodziski pszeniczny wędzony dębem	0.5 kg (19.2%)	80 %	6
Grain	Płatki pszeniczne	0.1 kg (3.8%)	60 %	3

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Warrior	4 g	45 min	14.7 %
Aroma (end of boil)	Fuggles	4 g	15 min	6 %
Aroma (end of boil)	Warrior	4 g	15 min	14.7 %
Aroma (end of boil)	Willamette	2 g	15 min	5 %
Aroma (end of boil)	Willamette	5 g	7 min	5 %
Aroma (end of boil)	Fuggles	4 g	7 min	6 %

### Yeasts

Name	Type	Form	Amount	Laboratory
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Fermentis K-97	Wheat	Dry	11.5 g	lassafre
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## Notes

- przerwa białkowa, żeby piwo nie było mętne? tak, ale nie długa, bo zmniejsza trwałość piany (płatki pszenne dodane po niej)  
*Mar 13, 2023, 6:40 PM*