

## forest stout

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- Gravity **13.8 BLG**
- ABV **5.7 %**
- IBU **42**
- SRM **32.1**
- Style **Foreign Extra Stout**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **5 %/h**
- Boil size **24.1 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.2 liter(s) / kg**
- Mash size **17.8 liter(s)**
- Total mash volume **23.3 liter(s)**

### Steps

- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **17.8 liter(s)** of strike water to **70.9C**
- Add grains
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **11.9 liter(s)** of **76C** water or to achieve **24.1 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pale Ale	4 kg (72.1%)	83 %	6
Grain	Karmelowy Jasny 30EBC	0.5 kg (9%)	75 %	30
Grain	Strzegom Pszeniczny	0.5 kg (9%)	81 %	6
Grain	Jęczmień palony	0.3 kg (5.4%)	55 %	985
Grain	Strzegom Czekoladowy ciemny	0.25 kg (4.5%)	68 %	1200

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Citra	30 g	60 min	12 %
Aroma (end of boil)	Ekuanot	15 g	5 min	14 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale