

## Modern Bitter (12 BLG) #20

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- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **39**
- SRM **4.1**
- Style **American Pale Ale**

### Batch size

- Expected quantity of finished beer **50 liter(s)**
- Trub loss **3 %**
- Size with trub loss **51.5 liter(s)**
- Boil time **60 min**
- Evaporation rate **7 %/h**
- Boil size **60.5 liter(s)**

### Mash information

- Mash efficiency **81 %**
- Liquor-to-grist ratio **5 liter(s) / kg**
- Mash size **55 liter(s)**
- Total mash volume **66 liter(s)**

### Steps

- Temp **55 C**, Time **10 min**
- Temp **64 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **75.6 C**, Time **5 min**

### Mash step by step

- Heat up **55 liter(s)** of strike water to **58.5C**
- Add grains
- Keep mash **10 min** at **55C**
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **75.6C**
- Sparge using **16.5 liter(s)** of **76C** water or to achieve **60.5 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pilsner malt	5 kg (45.5%)	82 %	4
Grain	Strzegom Wiedeński	3 kg (27.3%)	79 %	10
Grain	Weyermann - Carapils	2 kg (18.2%)	78 %	4
Grain	Viking Pale Ale malt	1 kg (9.1%)	80 %	5

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	60 g	60 min	10 %
Boil	Cascade	40 g	30 min	6 %
Boil	Cascade	60 g	5 min	6 %
Aroma (end of boil)	Citra	60 g	0 min	12 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	22 g	Fermentis