

## #19 Marcowe

- Gravity **11.7 BLG**
- ABV **4.7 %**
- IBU **24**
- SRM **6.8**
- Style **Oktoberfest/Märzen**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.4 liter(s)**

### Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **15.9 liter(s)**
- Total mash volume **20.5 liter(s)**

### Steps

- Temp **62 C**, Time **20 min**
- Temp **72 C**, Time **45 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **15.9 liter(s)** of strike water to **68C**
- Add grains
- Keep mash **20 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **15.1 liter(s)** of **76C** water or to achieve **26.4 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	1.2 kg (26.4%)	81 %	4
Grain	Monachijski	2.45 kg (53.8%)	80 %	16
Grain	Karmelowy Jasny 30EBC	0.5 kg (11%)	75 %	30
Grain	Strzegom Wiedeński	0.4 kg (8.8%)	79 %	10

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	hallertauer taurus	15 g	60 min	14 %
Boil	Hallertau	15 g	5 min	4.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M76 Bavarian lager	Lager	Dry	10 g	---