

## marcowe

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- Gravity **12.8 BLG**
- ABV ---
- IBU **40**
- SRM **13.7**
- Style **Oktoberfest/Märzen**

### Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **27.8 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **15.6 liter(s)**
- Total mash volume **20.8 liter(s)**

### Steps

- Temp **53 C**, Time **10 min**
- Temp **63 C**, Time **30 min**
- Temp **72 C**, Time **20 min**
- Temp **76 C**, Time **5 min**

### Mash step by step

- Heat up **15.6 liter(s)** of strike water to **58.5C**
- Add grains
- Keep mash **10 min** at **53C**
- Keep mash **30 min** at **63C**
- Keep mash **20 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **17.4 liter(s)** of **76C** water or to achieve **27.8 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	1.5 kg (28.8%)	80 %	4
Grain	Strzegom Monachijski typ I	3 kg (57.7%)	79 %	16
Grain	Weyermann - Carapils	0.5 kg (9.6%)	78 %	4
Grain	Strzegom Karmel 300	0.2 kg (3.8%)	70 %	299

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	20 g	60 min	13.5 %
Aroma (end of boil)	Magnum	10 g	10 min	13.5 %
Aroma (end of boil)	Amarillo	5 g	10 min	9.5 %
Aroma (end of boil)	Columbus/Tomahawk/Zeus	5 g	10 min	15.5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
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GLW35	Lager	Liquid	150 ml	---
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