

# Marcowe

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- Gravity **13.1 BLG**
- ABV ---
- IBU **21**
- SRM **12.4**
- Style **German Pilsner (Pils)**

## Batch size

- Expected quantity of finished beer **13.5 liter(s)**
- Trub loss **5 %**
- Size with trub loss **14.2 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **17.8 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **11.6 liter(s)**
- Total mash volume **14.9 liter(s)**

## Steps

- Temp **52 C**, Time **10 min**
- Temp **64 C**, Time **15 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **11.6 liter(s)** of strike water to **56.6C**
- Add grains
- Keep mash **10 min** at **52C**
- Keep mash **15 min** at **64C**
- Keep mash **20 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **9.5 liter(s)** of **76C** water or to achieve **17.8 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Wiedeński	1 kg (30.3%)	79 %	10
Grain	Pilzneński	0.5 kg (15.2%)	81 %	4
Grain	Strzegom Monachijski typ I	1 kg (30.3%)	79 %	16
Grain	Caramunich Malt	0.2 kg (6.1%)	71.7 %	110
Grain	Acid Malt	0.1 kg (3%)	58.7 %	6
Grain	Strzegom Monachijski typ II	0.5 kg (15.2%)	79 %	22

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Marynka	10 g	60 min	10 %
Boil	Lublin (Lubelski)	10 g	20 min	4 %

## Yeasts

Name	Type	Form	Amount	Laboratory
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Mangrove Jack's M84 Bohemian Lager	Lager	Slant	800 ml	Mangrove Jack's
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### Extras

Type	Name	Amount	Use for	Time
Water Agent	chlorek wapnia	4 g	Boil	70 min
Fining	mech irlandzki	3 g	Boil	15 min

### Notes

- woda miękka 5,5 PH - z Tesco lub z filtra Brita  
*Feb 18, 2016, 6:56 PM*