

## MS22

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- Gravity **17.1 BLG**
- ABV **7.3 %**
- IBU **52**
- SRM **7.1**
- Style **American IPA**

### Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21.4 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.2 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **21.6 liter(s)**
- Total mash volume **28.8 liter(s)**

### Steps

- Temp **63 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **21.6 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **40 min** at **63C**
- Keep mash **30 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **11.8 liter(s)** of **76C** water or to achieve **26.2 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	6.5 kg (90.3%)	80 %	5
Grain	Karmelowy Czerwony	0.5 kg (6.9%)	75 %	59
Grain	Płatki owsiane	0.2 kg (2.8%)	60 %	3

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Ahtanum	50 g	60 min	5 %
Boil	Ahtanum	50 g	30 min	5 %
Boil	Ahtanum	50 g	10 min	5 %
Whirlpool	Ahtanum	50 g	10 min	5 %
Dry Hop	Ahtanum	100 g	3 day(s)	5 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M44 US West Coast	Ale	Dry	10 g	Mangrove Jack's