

# MOS

- Gravity **18.7 BLG**
- ABV ---
- IBU **57**
- SRM **37.9**
- Style **Foreign Extra Stout**

## Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **75 min**
- Evaporation rate **10 %/h**
- Boil size **25.9 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 **62 C**, Time **20 min**
- Temp **72 C**, Time **45 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **21.6 liter(s)** of strike water to **69C**
- Add grains
- Keep mash **20 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **11.5 liter(s)** of **76C** water or to achieve **25.9 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Czekoladowy ciemny	0.2 kg (2.8%)	68 %	1200
Grain	Karmelowy żytni Strzegom	2 kg (27.8%)	75 %	150
Grain	Żytni	1 kg (13.9%)	85 %	8
Grain	Viking Pale Ale malt	2 kg (27.8%)	80 %	5
Grain	karmelowy 150	1 kg (13.9%)	70 %	150
Grain	Płatki owsiane	1 kg (13.9%)	75 %	30

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnum	25 g	60 min	13.5 %
Boil	East Kent Goldings	25 g	25 min	5.1 %
Boil	Fuggles	25 g	25 min	4.5 %
Boil	East Kent Goldings	25 g	10 min	5.1 %
Boil	Fuggles	25 g	10 min	4.5 %

## Yeasts

<b>Name</b>	<b>Type</b>	<b>Form</b>	<b>Amount</b>	<b>Laboratory</b>
gęstwa z S-04	Ale	Slant	100 ml	---

### **Extras**

<b>Type</b>	<b>Name</b>	<b>Amount</b>	<b>Use for</b>	<b>Time</b>
Flavor	laktoza	200 g	Boil	10 min