

## FES #2

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- Gravity **18.7 BLG**
- ABV **8.1 %**
- IBU **62**
- SRM **39.1**
- Style **Foreign Extra Stout**

### Batch size

- Expected quantity of finished beer **11 liter(s)**
- Trub loss **5 %**
- Size with trub loss **11.6 liter(s)**
- Boil time **65 min**
- Evaporation rate **10 %/h**
- Boil size **14.1 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12.3 liter(s)**
- Total mash volume **16.4 liter(s)**

### Steps

- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **30 min**
- Temp **76 C**, Time **0 min**

### Mash step by step

- Heat up **12.3 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **30 min** at **72C**
- Keep mash **0 min** at **76C**
- Sparge using **5.9 liter(s)** of **76C** water or to achieve **14.1 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Słód Pilsner® 2,5-4,5 EBC Weyermann	2.35 kg (54.7%)	80 %	4
Grain	Strzegom Pszeniczny	0.4 kg (9.3%)	81 %	6
Grain	Strzegom Monachijski typ I	0.1 kg (2.3%)	79 %	16
Grain	Caramunich® typ I	0.1 kg (2.3%)	73 %	80
Grain	Caraaroma	0.25 kg (5.8%)	78 %	400
Grain	Carafa	0.15 kg (3.5%)	70 %	664
Grain	Jęczmień palony	0.25 kg (5.8%)	55 %	985
Grain	płatki jęczmienne	0.5 kg (11.6%)	60 %	4
Sugar	CUKIER	0.2 kg (4.7%)	--- %	---

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Lublin (Lubelski)	30 g	55 min	6.5 %
Boil	Challenger	30 g	15 min	6.1 %
Boil	Citra	25 g	10 min	12.4 %

Aroma (end of boil)	Challenger	20 g	0 min	6.1 %
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## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Fermentis