

ESB

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **33**
- SRM **8.5**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21.2 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **26.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **17.2 liter(s)**
- Total mash volume **22.1 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **72 C**, Time **10 min**
- Temp **75 C**, Time **1 min**

Mash step by step

- Heat up **17.2 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **10 min** at **72C**
- Keep mash **1 min** at **75C**
- Sparge using **14.4 liter(s)** of **76C** water or to achieve **26.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	4.1 kg (83.7%)	80 %	5
Grain	Strzegom Monachijski typ I	0.4 kg (8.2%)	79 %	16
Grain	Strzegom Karmel 150	0.4 kg (8.2%)	75 %	150

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Pilgrim	35 g	60 min	8.5 %
Aroma (end of boil)	Endavour	10 g	0 min	8.5 %

Yeasts

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