

## ESB

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- Gravity **13.6 BLG**
- ABV **5.6 %**
- IBU **31**
- SRM **16.9**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

### Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **15.2 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **9.7 liter(s)**
- Total mash volume **13 liter(s)**

### Steps

- Temp **67 C**, Time **60 min**
- Temp **78 C**, Time **10 min**

### Mash step by step

- Heat up **9.7 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **10 min** at **78C**
- Sparge using **8.7 liter(s)** of **76C** water or to achieve **15.2 liter(s)** of wort

### Fermentables

Type	Name	Amount	Yield	EBC
Grain	Simpsons - Maris Otter	2.7 kg (83.3%)	81 %	6
Grain	Simpsons - Crystal Medium	0.2 kg (6.2%)	74 %	108
Grain	Simpsons - Crystal Dark	0.15 kg (4.6%)	74 %	158
Grain	Biscuit Malt	0.1 kg (3.1%)	79 %	45
Grain	Chocolate Malt (UK)	0.08 kg (2.5%)	73 %	887
Grain	Black (Patent) Malt	0.01 kg (0.3%)	55 %	985

### Hops

Use for	Name	Amount	Time	Alpha acid
Boil	East Kent Goldings	30 g	60 min	5.1 %
Boil	East Kent Goldings	20 g	5 min	5.1 %

### Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11 g	Safale