

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 | --- |