

Full Aroma Hops

- Gravity **12.4 BLG**
- ABV **5 %**
- IBU **19**
- SRM **3.5**
- Style **Special/Best/Premium Bitter**

Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **90 min**
- Evaporation rate **15 %/h**
- Boil size **16.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **8.7 liter(s)**
- Total mash volume **11.6 liter(s)**

Steps

- Temp **40 C**, Time **0 min**
- Temp **61 C**, Time **12 min**
- Temp **71 C**, Time **45 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **8.7 liter(s)** of strike water to **43.3C**
- Add grains
- Keep mash **0 min** at **40C**
- Keep mash **12 min** at **61C**
- Keep mash **45 min** at **71C**
- Keep mash **10 min** at **76C**
- Sparge using **10.9 liter(s)** of **76C** water or to achieve **16.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	2.9 kg (100%)	80 %	3.75

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Styrian Cardinal	10 g	60 min	8.5 %
Boil	Centennial	5 g	10 min	10.5 %
Whirlpool	Centennial	25 g	0 min	10.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Us-05	Ale	Slant	185 ml	Safale