

Bitter Polish Hops #1

- Gravity **10.2 BLG**
- ABV **4.1 %**
- IBU **31**
- SRM **8.2**
- Style **Special/Best/Premium Bitter**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **10 %**
- Size with trub loss **22 liter(s)**
- Boil time **60 min**
- Evaporation rate **15 %/h**
- Boil size **27.6 liter(s)**

Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12 liter(s)**
- Total mash volume **16 liter(s)**

Steps

- Temp **64 C**, Time **60 min**
- Temp **78 C**, Time **1 min**

Mash step by step

- Heat up **12 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **60 min** at **64C**
- Keep mash **1 min** at **78C**
- Sparge using **19.6 liter(s)** of **76C** water or to achieve **27.6 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|------------------------|----------------|-------|-----|
| Grain | Simpsons - Maris Otter | 3.3 kg (82.5%) | 81 % | 6 |
| Grain | Fawcett - Crystal | 0.3 kg (7.5%) | 70 % | 160 |
| Grain | Biscuit Malt | 0.4 kg (10%) | 79 % | 45 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------|---------|--------|--------|------------|
| Boil | Marynka | 15 g | 60 min | 10 % |
| Boil | Zula | 10 g | 20 min | 9 % |
| Boil | Oktawia | 10 g | 10 min | 8 % |
| Boil | Zula | 20 g | 5 min | 9 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|----------------------------|------|-------|--------|------------|
| WLP002 - English Ale Yeast | Ale | Slant | 70 ml | White Labs |