

German Pils

- Gravity **11.7 BLG**
- ABV **4.7 %**
- IBU **45**
- SRM **3.5**
- Style **German Pilsner (Pils)**

Batch size

- Expected quantity of finished beer **22 liter(s)**
- Trub loss **5 %**
- Size with trub loss **23.1 liter(s)**
- Boil time **90 min**
- Evaporation rate **15 %/h**
- Boil size **32.3 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16 liter(s)**
- Total mash volume **21.4 liter(s)**

Steps

- Temp **52 C**, Time **7 min**
- Temp **64 C**, Time **20 min**
- Temp **72 C**, Time **40 min**
- Temp **78 C**, Time **0 min**

Mash step by step

- Heat up **16 liter(s)** of strike water to **57.4C**
- Add grains
- Keep mash **7 min** at **52C**
- Keep mash **20 min** at **64C**
- Keep mash **40 min** at **72C**
- Keep mash **0 min** at **78C**
- Sparge using **21.7 liter(s)** of **76C** water or to achieve **32.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------|----------------|--------|-----|
| Grain | Strzegom Pilzneński | 5 kg (93.5%) | 80 % | 4 |
| Grain | Castlemalting - Cara Clair | 0.3 kg (5.6%) | 78 % | 4 |
| Grain | Acid Malt | 0.05 kg (0.9%) | 58.7 % | 6 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|------------------------|--------|--------|------------|
| Boil | Polaris | 20 g | 40 min | 18.5 % |
| Aroma (end of boil) | Hallertau Spalt Select | 25 g | 30 min | 3.4 % |
| Aroma (end of boil) | Hallertau | 35 g | 7 min | 6.5 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|----------------------|-------|--------|--------|------------------|
| FM31 Bawarska Dolina | Lager | Liquid | 600 ml | Fermentum Mobile |

Extras

| Type | Name | Amount | Use for | Time |
|-------------|----------------|--------|---------|--------|
| Water Agent | fhirlfloc t | 1.5 g | Boil | 10 min |
| Water Agent | chlorek wapnia | 5 g | Mash | 0 min |