

## #12 Munich Helles

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- Gravity **11.2 BLG**
- ABV **4.5 %**
- IBU **20**
- SRM **3.8**
- Style **Munich Helles**

### Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **3 %**
- Size with trub loss **21.6 liter(s)**
- Boil time **80 min**
- Evaporation rate **10 %/h**
- Boil size **26.9 liter(s)**

### Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **16.1 liter(s)**
- Total mash volume **20.7 liter(s)**

### Steps

- Temp **50 C**, Time **20 min**
- Temp **64 C**, Time **30 min**
- Temp **70 C**, Time **30 min**

### Mash step by step

- Heat up **16.1 liter(s)** of strike water to **54.3C**
- Add grains
- Keep mash **20 min** at **50C**
- Keep mash **30 min** at **64C**
- Keep mash **30 min** at **70C**
- Sparge using **15.4 liter(s)** of **76C** water or to achieve **26.9 liter(s)** of wort

### Fermentables

| Type  | Name                       | Amount         | Yield | EBC |
|-------|----------------------------|----------------|-------|-----|
| Grain | Strzegom Pilzneński        | 3.5 kg (76.1%) | 80 %  | 4   |
| Grain | Strzegom Wiedeński         | 0.5 kg (10.9%) | 79 %  | 10  |
| Grain | Strzegom Monachijski typ I | 0.1 kg (2.2%)  | 79 %  | 16  |
| Grain | Bestmalz Carmel Pils       | 0.5 kg (10.9%) | 75 %  | 5   |

### Hops

| Use for | Name    | Amount | Time   | Alpha acid |
|---------|---------|--------|--------|------------|
| Boil    | Sybilla | 10 g   | 70 min | 7 %        |
| Boil    | Sybilla | 30 g   | 15 min | 7 %        |

### Yeasts

| Name             | Type  | Form | Amount | Laboratory |
|------------------|-------|------|--------|------------|
| Saflager W 34/70 | Lager | Dry  | 11.5 g | Fermentis  |