

## # 198 Munich Helles KRA

- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **19**
- SRM **4.3**
- Style **Munich Helles**

### Batch size

- Expected quantity of finished beer **15 liter(s)**
- Trub loss **15 %**
- Size with trub loss **19.5 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **24.1 liter(s)**

### Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **16.6 liter(s)**
- Total mash volume **21.4 liter(s)**

### Steps

- Temp **64 C**, Time **15 min**
- Temp **67 C**, Time **30 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **16.6 liter(s)** of strike water to **70.3C**
- Add grains
- Keep mash **15 min** at **64C**
- Keep mash **30 min** at **67C**
- Keep mash **15 min** at **72C**
- Keep mash **5 min** at **78C**
- Sparge using **12.3 liter(s)** of **76C** water or to achieve **24.1 liter(s)** of wort

### Fermentables

| Type  | Name                       | Amount         | Yield | EBC |
|-------|----------------------------|----------------|-------|-----|
| Grain | Strzegom Pilzneński        | 4.2 kg (88.4%) | 79 %  | 4   |
| Grain | Strzegom Monachijski typ I | 0.4 kg (8.4%)  | 79 %  | 16  |
| Grain | Weyermann - Carapils       | 0.15 kg (3.2%) | 78 %  | 4   |

### Hops

| Use for | Name                 | Amount | Time   | Alpha acid |
|---------|----------------------|--------|--------|------------|
| Boil    | Magnum               | 9 g    | 40 min | 15.5 %     |
| Boil    | Hallertau Mittelfruh | 10 g   | 10 min | 4.8 %      |
| Boil    | Hallertau Mittelfruh | 20 g   | 5 min  | 4.8 %      |

### Yeasts

| Name                        | Type  | Form   | Amount | Laboratory |
|-----------------------------|-------|--------|--------|------------|
| WLP830 - German Lager Yeast | Lager | Liquid | 200 ml | White Labs |