

# Niemiecki Pils na roboczo

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- Gravity **11.7 BLG**
- ABV **4.7 %**
- IBU **30**
- SRM **3.5**
- Style **German Pilsner (Pils)**

## Batch size

- Expected quantity of finished beer **35 liter(s)**
- Trub loss **5 %**
- Size with trub loss **36.8 liter(s)**
- Boil time **90 min**
- Evaporation rate **10 %/h**
- Boil size **46.3 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **24 liter(s)**
- Total mash volume **32 liter(s)**

## Steps

- Temp **63 C**, Time **40 min**
- Temp **72 C**, Time **30 min**
- Temp **79 C**, Time **1 min**

## Mash step by step

- Heat up **24 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **40 min** at **63C**
- Keep mash **30 min** at **72C**
- Keep mash **1 min** at **79C**
- Sparge using **30.3 liter(s)** of **76C** water or to achieve **46.3 liter(s)** of wort

## Fermentables

| Type  | Name       | Amount      | Yield | EBC |
|-------|------------|-------------|-------|-----|
| Grain | Pilzneński | 8 kg (100%) | 81 %  | 4   |

## Hops

| Use for             | Name              | Amount | Time   | Alpha acid |
|---------------------|-------------------|--------|--------|------------|
| Boil                | Perle             | 100 g  | 20 min | 7 %        |
| Aroma (end of boil) | Mandarina Bavaria | 64 g   | 2 min  | 7.6 %      |

## Yeasts

| Name                 | Type  | Form   | Amount | Laboratory       |
|----------------------|-------|--------|--------|------------------|
| FM31 Bawarska Dolina | Lager | Liquid | 100 ml | Fermentum Mobile |