

# SM

- Gravity **16.1 BLG**
- ABV **6.8 %**
- IBU **61**
- SRM **37.2**
- Style **American Stout**

## Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **29 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **21.6 liter(s)**
- Total mash volume **28.8 liter(s)**

## Steps

- Temp **66 C**, Time **45 min**
- Temp **68 C**, Time **15 min**
- Temp **68 C**, Time **10 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **21.6 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **45 min** at **66C**
- Keep mash **10 min** at **68C**
- Keep mash **15 min** at **68C**
- Keep mash **5 min** at **78C**
- Sparge using **14.6 liter(s)** of **76C** water or to achieve **29 liter(s)** of wort

## Fermentables

| Type  | Name                           | Amount        | Yield | EBC |
|-------|--------------------------------|---------------|-------|-----|
| Grain | Viking Pale Ale malt           | 4 kg (55.6%)  | 80 %  | 5   |
| Grain | Słód Wędzony Steinbach         | 1 kg (13.9%)  | 80 %  | 5   |
| Grain | Brown Malt (British Chocolate) | 0.3 kg (4.2%) | 70 %  | 128 |
| Grain | Fawcett - Pale Chocolate       | 0.3 kg (4.2%) | 71 %  | 600 |
| Grain | Chocolate Malt (UK)            | 0.3 kg (4.2%) | 73 %  | 887 |
| Grain | Jęczmień palony                | 0.4 kg (5.6%) | 55 %  | 985 |
| Grain | Płatki owsiane                 | 0.5 kg (6.9%) | 85 %  | 3   |
| Grain | Płatki pszeniczne              | 0.4 kg (5.6%) | 85 %  | 3   |

## Hops

| Use for             | Name    | Amount | Time     | Alpha acid |
|---------------------|---------|--------|----------|------------|
| Boil                | Warrior | 40 g   | 60 min   | 15.5 %     |
| Aroma (end of boil) | Mosaic  | 30 g   | 10 min   | 10 %       |
| Dry Hop             | Mosaic  | 20 g   | 7 day(s) | 10 %       |

## Yeasts

| Name        | Type | Form | Amount | Laboratory |
|-------------|------|------|--------|------------|
| Safale S-04 | Ale  | Dry  | 5 g    | Safale     |