

milk

- Gravity **16.1 BLG**
- ABV ---
- IBU **30**
- SRM **30.1**
- Style **Sweet Stout**

Batch size

- Expected quantity of finished beer **20 liter(s)**
- Trub loss **5 %**
- Size with trub loss **21 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **25.3 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18 liter(s)**
- Total mash volume **24 liter(s)**

Steps

- Temp **66 C**, Time **60 min**
- Temp **76 C**, Time **10 min**

Mash step by step

- Heat up **18 liter(s)** of strike water to **73.7C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **10 min** at **76C**
- Sparge using **13.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|----------------------------|---------------|--------|-----|
| Grain | Pilzneński | 2 kg (30.8%) | 81 % | 4 |
| Grain | Strzegom Karmel 150 | 1 kg (15.4%) | 75 % | 150 |
| Grain | Strzegom Czekoladowy jasny | 1 kg (15.4%) | 68 % | 400 |
| Grain | Viking Pale Ale malt | 1 kg (15.4%) | 80 % | 5 |
| Grain | Monachijski | 1 kg (15.4%) | 80 % | 16 |
| Sugar | Milk Sugar (Lactose) | 0.5 kg (7.7%) | 76.1 % | 0 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|---------|--------|--------|------------|
| Boil | Marynka | 20 g | 60 min | 10 % |
| Aroma (end of boil) | Marynka | 30 g | 10 min | 10 % |

Yeasts

| Name | Type | Form | Amount | Laboratory |
|--------------|------|------|--------|------------|
| Safale US-05 | Ale | Dry | 11.5 g | Fermentis |