

# Porter Zero Waste

- Gravity **31.2 BLG**
- ABV **15.7 %**
- IBU **7**
- SRM **35.1**
- Style **Russian Imperial Stout**

## Batch size

- Expected quantity of finished beer **14 liter(s)**
- Trub loss **5 %**
- Size with trub loss **14.7 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **17.7 liter(s)**

## Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **2 liter(s) / kg**
- Mash size **20.7 liter(s)**
- Total mash volume **31 liter(s)**

## Steps

- Temp **66 C**, Time **60 min**
- Temp **72 C**, Time **20 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **20.7 liter(s)** of strike water to **77.5C**
- Add grains
- Keep mash **60 min** at **66C**
- Keep mash **20 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **7.4 liter(s)** of **76C** water or to achieve **17.7 liter(s)** of wort

## Fermentables

| Type  | Name                         | Amount         | Yield  | EBC  |
|-------|------------------------------|----------------|--------|------|
| Grain | Weyermann - Pilsner Malt     | 5 kg (48.3%)   | 81 %   | 5    |
| Grain | Weyermann - Pale Ale Malt    | 2 kg (19.3%)   | 85 %   | 7    |
| Grain | Platki owsiane               | 1 kg (9.7%)    | 60 %   | 3    |
| Grain | Weyermann - Carapils         | 0.5 kg (4.8%)  | 78 %   | 4    |
| Grain | Simpsons - Golden Naked Oats | 0.5 kg (4.8%)  | 73 %   | 20   |
| Grain | Platki pszeniczne            | 0.5 kg (4.8%)  | 60 %   | 3    |
| Grain | Special B Malt               | 0.25 kg (2.4%) | 65.2 % | 315  |
| Grain | Weyermann - Carawheat        | 0.1 kg (1%)    | 77 %   | 97   |
| Grain | Weyermann - Chocolate Rye    | 0.1 kg (1%)    | 20 %   | 493  |
| Grain | Weyermann - Chocolate Wheat  | 0.1 kg (1%)    | 74 %   | 788  |
| Grain | Strzegom Czekoladowy 400     | 0.1 kg (1%)    | 68 %   | 400  |
| Grain | Carafa III                   | 0.1 kg (1%)    | 70 %   | 1034 |

|       |                       |             |      |     |
|-------|-----------------------|-------------|------|-----|
| Grain | Weyermann - Carafa II | 0.1 kg (1%) | 70 % | 837 |
|-------|-----------------------|-------------|------|-----|

## Hops

| Use for | Name     | Amount | Time   | Alpha acid |
|---------|----------|--------|--------|------------|
| Boil    | Amarillo | 10 g   | 90 min | 9.5 %      |

## Yeasts

| Name  | Type | Form | Amount | Laboratory |
|-------|------|------|--------|------------|
| US-05 | Ale  | Dry  | 22 g   | ---        |