

## MS22

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- Gravity **12.1 BLG**
- ABV **4.9 %**
- IBU **35**
- SRM **8.8**
- Style **American Pale Ale**

### 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 **90 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **12 liter(s)**
- Total mash volume **16 liter(s)**

### Steps

- Temp **63 C**, Time **40 min**
- Temp **73 C**, Time **30 min**
- Temp **78 C**, Time **5 min**

### Mash step by step

- Heat up **12 liter(s)** of strike water to **70.2C**
- Add grains
- Keep mash **40 min** at **63C**
- Keep mash **30 min** at **73C**
- Keep mash **5 min** at **78C**
- Sparge using **17.3 liter(s)** of **76C** water or to achieve **25.3 liter(s)** of wort

### Fermentables

| Type  | Name                   | Amount         | Yield | EBC |
|-------|------------------------|----------------|-------|-----|
| Grain | Viking Pale Ale malt   | 2.5 kg (75%)   | 80 %  | 5   |
| Grain | Pszeniczny             | 1 kg (12.5%)   | 85 %  | 4   |
| Grain | Strzegom Karmel<br>150 | 0.5 kg (12.5%) | 75 %  | 150 |

### Hops

| Use for             | Name       | Amount | Time     | Alpha acid |
|---------------------|------------|--------|----------|------------|
| Boil                | Centennial | 30 g   | 60 min   | 10.5 %     |
| Boil                | Ahtanum    | 20 g   | 30 min   | 5 %        |
| Aroma (end of boil) | Centennial | 20 g   | 1 min    | 10.5 %     |
| Aroma (end of boil) | Ahtanum    | 30 g   | 1 min    | 5 %        |
| Dry Hop             | Centennial | 50 g   | 3 day(s) | 10.5 %     |
| Dry Hop             | Ahtanum    | 70 g   | 3 day(s) | 5 %        |

### Yeasts

| Name | Type | Form | Amount | Laboratory |
|------|------|------|--------|------------|
|------|------|------|--------|------------|

|  |     |     |        |                 |
|--|-----|-----|--------|-----------------|
| Mangrove Jack's<br>M42 New World<br>Strong Ale | Ale | Dry | 11.5 g | Mangrove Jack's |
|--|-----|-----|--------|-----------------|