

Ronin

- Gravity **18 BLG**
- ABV **7.7 %**
- IBU **43**
- SRM **48**
- Style **Foreign Extra Stout**

Batch size

- Expected quantity of finished beer **18 liter(s)**
- Trub loss **5 %**
- Size with trub loss **18.9 liter(s)**
- Boil time **65 min**
- Evaporation rate **10 %/h**
- Boil size **22.9 liter(s)**

Mash information

- Mash efficiency **85 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **18 liter(s)**
- Total mash volume **24 liter(s)**

Steps

- Temp **67 C**, Time **60 min**
- Temp **72 C**, Time **15 min**

Mash step by step

- Heat up **18 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **60 min** at **67C**
- Keep mash **15 min** at **72C**
- Sparge using **10.9 liter(s)** of **76C** water or to achieve **22.9 liter(s)** of wort

Fermentables

| Type | Name | Amount | Yield | EBC |
|-------|---------------------------|---------------|-------|------|
| Grain | Briess - Pale Ale Malt | 3 kg (50%) | 80 % | 7 |
| Grain | Simpsons - Roasted Barley | 0.5 kg (8.3%) | 70 % | 1084 |
| Grain | Rice, Flaked | 0.5 kg (8.3%) | 70 % | 2 |
| Grain | Chocolate Malt (UK) | 0.5 kg (8.3%) | 73 % | 887 |
| Grain | Munich Malt | 1.5 kg (25%) | 80 % | 18 |

Hops

| Use for | Name | Amount | Time | Alpha acid |
|---------------------|-------|--------|--------|------------|
| Boil | Perle | 35 g | 60 min | 8.4 % |
| Aroma (end of boil) | perle | 45 g | 10 min | 8.4 % |

Yeasts

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

Extras

| Type | Name | Amount | Use for | Time |
|-------|-------------|--------|---------|--------|
| Spice | Tonka Beans | 10 g | Boil | 15 min |