

STOUT HARDCOROWY

- Gravity **15.9 BLG**
- ABV ---
- IBU **65**
- SRM **55**
- Style **American Stout**

Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **22.5 liter(s)**
- Total mash volume **30 liter(s)**

Steps

- Temp **68 C**, Time **70 min**
- Temp **72 C**, Time **10 min**
- Temp **76 C**, Time **5 min**

Mash step by step

- Heat up **22.5 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **70 min** at **68C**
- Keep mash **10 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **16.7 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale Maris Otter	3.6 kg (48%)	80 %	5
Grain	Strzegom Monachijski typ I	1.4 kg (18.7%)	79 %	16
Grain	słód kawowy Belgia	0.5 kg (6.7%)	75.5 %	500
Grain	Słód Midnight Wheat Briess	0.4 kg (5.3%)	73 %	1100
Grain	palony Black (Belgia)	0.4 kg (5.3%)	73.5 %	1350
Grain	żytni czekoladowy Weyermann	0.3 kg (4%)	73 %	700
Grain	Pszeniczny	0.3 kg (4%)	85 %	4
Grain	Żytni	0.2 kg (2.7%)	85 %	8
Grain	Strzegom Karmel 600	0.2 kg (2.7%)	68 %	601
Grain	Płatki owsiane	0.2 kg (2.7%)	85 %	3

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	26 g	60 min	15.5 %
Boil	Citra	10 g	15 min	12 %

Boil	Cascade	10 g	15 min	6 %
Boil	Mosaic	10 g	15 min	10 %
Boil	Simcoe	10 g	15 min	13.2 %
Boil	Citra	20 g	5 min	12 %
Boil	Cascade	20 g	5 min	6 %
Boil	Mosaic	20 g	5 min	10 %
Boil	Simcoe	20 g	5 min	13.2 %
Whirlpool	Citra	20 g	80 min	12 %
Whirlpool	Cascade	20 g	80 min	6 %
Whirlpool	Mosaic	20 g	80 min	10 %
Whirlpool	Simcoe	20 g	80 min	13.2 %

Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M44 US West Coast	Ale	Dry	11 g	Mangrove Jack's

Extras

Type	Name	Amount	Use for	Time
Water Agent	kreda	5 g	Mash	20 min
Fining	mech	5 g	Boil	15 min