

# Willow

- Gravity **14.5 BLG**
- ABV **6 %**
- IBU **47**
- SRM **12.2**
- Style **American Brown Ale**

## Batch size

- Expected quantity of finished beer **23 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **29.5 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3.3 liter(s) / kg**
- Mash size **20.8 liter(s)**
- Total mash volume **27.1 liter(s)**

## Steps

- Temp **62 C**, Time **35 min**
- Temp **72 C**, Time **45 min**
- Temp **76 C**, Time **5 min**

## Mash step by step

- Heat up **20.8 liter(s)** of strike water to **68.4C**
- Add grains
- Keep mash **35 min** at **62C**
- Keep mash **45 min** at **72C**
- Keep mash **5 min** at **76C**
- Sparge using **15 liter(s)** of **76C** water or to achieve **29.5 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński/ Pale ale	5 kg (79.4%)	80 %	4
Grain	Strzegom Karmel 150	1 kg (15.9%)	75 %	150
Grain	Płatki pszeniczne	0.3 kg (4.8%)	85 %	3

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Equanot (USA)	30 g	60 min	14.5 %
Boil	Cascade PL	50 g	10 min	5.2 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale US-05	Ale	Dry	11.2 g	---

## Extras

Type	Name	Amount	Use for	Time
Fining	mech irlandzki	10 g	Boil	10 min