

# polski jasne

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- Gravity **12.1 BLG**
- ABV ---
- IBU **19**
- SRM **5**
- Style **German Pilsner (Pils)**

## Batch size

- Expected quantity of finished beer **45 liter(s)**
- Trub loss **5 %**
- Size with trub loss **47.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **57 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **33 liter(s)**
- Total mash volume **44 liter(s)**

## Steps

- Temp **67 C**, Time **90 min**

## Mash step by step

- Heat up **33 liter(s)** of strike water to **74.8C**
- Add grains
- Keep mash **90 min** at **67C**
- Sparge using **35 liter(s)** of **76C** water or to achieve **57 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	10 kg (90.9%)	80 %	4
Grain	Caramel/Crystal Malt - 20L	1 kg (9.1%)	75 %	39

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Mandarina Bavaria	15 g	60 min	9.1 %
Boil	Saaz (Czech Republic)	50 g	20 min	4.5 %
Boil	Saaz (Czech Republic)	50 g	10 min	4.5 %
Boil	Mandarina Bavaria	15 g	5 min	9.1 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Mangrove Jack's M84 Bohemian Lager	Lager	Slant	150 ml	Mangrove Jack's