

# Milkshake IPA

- Gravity **14.3 BLG**
- ABV **5.9 %**
- IBU **36**
- SRM **4**
- Style **American IPA**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **24.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **28.9 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **17.7 liter(s)**
- Total mash volume **23.6 liter(s)**

## Steps

- Temp **65 C**, Time **50 min**
- Temp **75 C**, Time **10 min**
- Temp **78 C**, Time **5 min**

## Mash step by step

- Heat up **17.7 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **50 min** at **65C**
- Keep mash **10 min** at **75C**
- Keep mash **5 min** at **78C**
- Sparge using **17.1 liter(s)** of **76C** water or to achieve **28.9 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pilzneński	2.9 kg (46.3%)	81 %	4
Grain	Simpsons - Maris Otter	1.75 kg (27.9%)	81 %	6
Grain	Płatki owsiane	0.9 kg (14.4%)	85 %	3
Grain	Weyermann - Carapils	0.18 kg (2.9%)	78 %	4
Grain	Weyermann - Acidulated Malt	0.18 kg (2.9%)	80 %	6
Adjunct	mąka pszenna	0.13 kg (2.1%)	--- %	---
Sugar	Milk Sugar (Lactose)	0.227 kg (3.6%)	76.1 %	0

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Columbus/Tomahawk/Zeus	8 g	60 min	15.5 %
Aroma (end of boil)	Citra	28 g	10 min	12 %
Aroma (end of boil)	Galaxy	28 g	10 min	15 %
Whirlpool	Citra	42 g	0 min	12 %
Whirlpool	Galaxy	42 g	0 min	15 %

Dry Hop	Citra	28 g	5 day(s)	12 %
Dry Hop	Galaxy	28 g	5 day(s)	15 %
Dry Hop	Citra	42 g	4 day(s)	12 %
Dry Hop	Galaxy	42 g	4 day(s)	15 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Wyeast - London Ale III	Ale	Liquid	1000 ml	Wyeast Labs

## Extras

Type	Name	Amount	Use for	Time
Spice	laska wanilli	1 g	Secondary	3 day(s)
Flavor	mango	1500 g	Secondary	3 day(s)

## Notes

- Laktoza dodana na 20 min przed końcem gotowania
- Chmienie na whirlpool prze 82 stopniach, hop steep przez 15 min.
- Pierwsze chmienie na zimno na burzliwą, czas 5 dni
- Drugie chmienie na zimno na cichą, 4 dni przed zabutelkowaniem  
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