

Munich Dunkel

- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **24**
- SRM **20.8**
- Style **Munich Dunkel**

Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **26.5 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **16.8 liter(s)**
- Total mash volume **22.4 liter(s)**

Steps

- Temp **64 C**, Time **45 min**
- Temp **72 C**, Time **15 min**
- Temp **78 C**, Time **10 min**

Mash step by step

- Heat up **16.8 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **45 min** at **64C**
- Keep mash **15 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **15.3 liter(s)** of **76C** water or to achieve **26.5 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Monachijski typ I	4.7 kg (83.9%)	79 %	16
Grain	Słód Caramunich Typ II Weyermann	0.5 kg (8.9%)	73 %	120
Grain	Weyermann - Dehusked Carafo III	0.2 kg (3.6%)	15 %	1024
Grain	Weyermann - Melanoiden Malt	0.2 kg (3.6%)	81 %	53

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	lunga	15 g	60 min	11.5 %
Boil	Tettnang	25 g	60 min	2.5 %
Boil	Tettnang	25 g	0 min	2.5 %

Yeasts

Name	Type	Form	Amount	Laboratory
Saflager W 34/70	Lager	Dry	22 g	Fermentis

Extras

Recipe has been printed via **BREWNESS.com** - a complex online solution for homebrewers to track brewing process easily.

Type	Name	Amount	Use for	Time
Water Agent	CaCl ₂	7 g	Mash	60 min
Water Agent	Lactic Acid	7 g	Mash	60 min
Fining	Whirlfloc-T	2.5 g	Boil	10 min