Beer Pasteurisation Units (PU)

Pasteurisation units delivered to beer held at a temperature for a time (1 PU = 1 min at 60 °C, z ≈ 6.94 °C), and the time to reach a target number of PU.

Method: Brewing pasteurisation unit: PU = t(min) × 1.393^(T − 60 °C) (Del Vecchio et al., 1951)

Input parameters

Unit system: SI

Parameter	Value	Unit
Beer temperature	62.000	°C
Time at temperature	10.000	min
Target pasteurisation units	15.000	

Calculated results

Parameter	Value	Unit
PU per minute at T	1.9404	
Pasteurisation units delivered	19.404	
Time for the target	7.7302	min

Notes for this case

- Tunnel pasteurisers give 15–30 PU to bottled beer; flash pasteurisers 15–25 PU in seconds at 70–72 °C.

Formula and method

$$\frac{PU}{min} = 1.393^{(T-60)}, \quad PU = t \cdot 1.393^{(T-60)}$$

Variables

T	Beer temperature	K
t	Time at temperature	s
PU^*	Target pasteurisation units	-
PU/min	PU per minute at T	-
PU	Pasteurisation units delivered	-
t^*	Time for the target	s

Method and standards

Brewing PU definition.

Assumptions and limits

- Constant beer temperature.

References

- Brewing pasteurisation unit: PU = t(min) × 1.393^(T − 60 °C) (Del Vecchio et al., 1951)

Report details

Report reference	FCC-PKW1-R8BC (the same inputs always give the same reference)
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Calculator	Beer Pasteurisation Units (PU)
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Software release	FireCAD Calc, release of 17 November 2026
Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/chemical/food-dairy/pasteurisation-units-beer

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.