Brine Strength: Salometer Degrees, % Salt and Salt to Add

Converts brine strength between salometer degrees and % NaCl by mass (100 °SAL = saturated, 26.4 %) and gives the salt to dissolve in water for a target strength.

Method: Definitions and mass and energy balances: salometer scale with 100 °SAL = saturated brine (26.4 % NaCl at about 15.6 °C)

Input parameters

Unit system: SI

Parameter	Value	Unit
Strength entered as	% NaCl by mass	
Strength	10.000	
Water	1,000.0	kg

Calculated results

Parameter	Value	Unit
Salt by mass	10.000	%
Salometer degrees	37.879	
Salt to dissolve in the water	111.11	kg

Formula and method

$$x = 0.264 \cdot \frac{°SAL}{100}, \quad M_s = M_w \frac{x}{1 - x}$$

Variables

basis	Strength entered as	-
s	Strength	-
M_w	Water	kg
x	Salt by mass	-
$°SAL$	Salometer degrees	-
M_s	Salt to dissolve in the water	kg

Method and standards

Salometer definition and mass balance.

Assumptions and limits

- NaCl brine near room temperature; strengths above saturation (26.4 %, 100 °SAL) are rejected.

References

- Definitions and mass and energy balances: salometer scale with 100 °SAL = saturated brine (26.4 % NaCl at about 15.6 °C)

Report details

Report reference	FCC-YMCH-EE43 (the same inputs always give the same reference)
Generated	17 November 2026, 19:36 UTC
Calculator	Brine Strength: Salometer Degrees, % Salt and Salt to Add
Method last reviewed	13 November 2026
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/brine-salometer-conversion

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.