Spent Wash per Litre of Alcohol

Spent wash (vinasse) per litre of alcohol and per day from the wash strength, the live steam injected in the analyser column and the plant capacity.

Method: Volume balance: wash per litre of AA = 1/s_v; less the alcohol; plus condensed live steam

Input parameters

Unit system: SI

Parameter	Value	Unit
Wash strength	9.0000	%
Live steam injected per litre of AA 0 for reboiler-heated (indirect) columns.	2.0000	kg/L
Plant capacity (absolute alcohol)	100.00	kL/d
Spent wash density	1,040.0	kg/m³

Calculated results

Parameter	Value	Unit
Spent wash per litre of AA	12.034	
Spent wash per day	1,203.4	m³/d

Notes for this case

- An estimate by volume balance; plants report 8–15 L per litre for molasses: measure yours.

Formula and method

$$v_{sw} = \frac{1}{s_v} - 1 + \frac{s_s}{\rho_w}$$

Variables

s_v	Wash strength	-
s_s	Live steam injected per litre of AA	kg/m³
$\dot{V}_e$	Plant capacity (absolute alcohol)	m³/s
ρ_w	Spent wash density	kg/m³
v_{sw}	Spent wash per litre of AA	-
$\dot{V}_{sw}$	Spent wash per day	m³/s

Method and standards

Volume balance.

Assumptions and limits

- Volumes additive.
- Only the absolute alcohol is taken out of the wash: water leaving with the overhead (low wines) and the lees stream are not separated, and condensed steam is counted at the spent wash density. The result is an estimate; measure the flow.

References

- Volume balance: wash per litre of AA = 1/s_v; less the alcohol; plus condensed live steam

Report details

Report reference	FCC-NBQA-2VCE (the same inputs always give the same reference)
Generated	17 November 2026, 19:50 UTC
Calculator	Spent Wash per Litre of Alcohol
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/sugar-ethanol/spent-wash-zld/spent-wash-generation

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.