Alcohol Lost in Spent Wash and Lees

Absolute alcohol lost per day in spent wash and spent lees from their flows and alcohol contents, and the loss as a share of production.

Method: Loss = flow × alcohol content

Input parameters

Unit system: SI

Parameter	Value	Unit
Spent wash	1,000.0	m³/d
Alcohol in spent wash (% v/v)	0.020000	%
Spent lees	150.00	m³/d
Alcohol in spent lees (% v/v)	0.010000	%
Alcohol produced (absolute)	100.00	kL/d

Calculated results

Parameter	Value	Unit
Lost in spent wash	8.3333	L/h
Lost in spent lees	0.62500	L/h
Loss as share of the alcohol produced	0.21500	%

Notes for this case

- Spent wash should carry only traces of alcohol; a rise points to analyser column trouble.

Formula and method

$$L = \dot{V}s, \quad \frac{L_w + L_l}{\dot{V}_e}$$

Variables

$\dot{V}_{sw}$	Spent wash	m³/s
s_{sw}	Alcohol in spent wash (% v/v)	-
$\dot{V}_l$	Spent lees	m³/s
s_l	Alcohol in spent lees (% v/v)	-
$\dot{V}_e$	Alcohol produced (absolute)	m³/s
L_w	Lost in spent wash	m³/s
L_l	Lost in spent lees	m³/s
$L/\dot{V}_e$	Loss as share of the alcohol produced	-

Method and standards

Loss = flow × alcohol content for each stream; the share is the total loss over the absolute alcohol produced (not over production plus loss).

Assumptions and limits

- Daily averages.
- Flows and % v/v at the same reference temperature (normally 20 °C) as the production figure.

References

- Loss = flow × alcohol content

Report details

Report reference	FCC-5N7N-PA6D (the same inputs always give the same reference)
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Calculator	Alcohol Lost in Spent Wash and Lees
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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/ethanol-distillation/alcohol-loss-spent-wash

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.