Fusel Oil and Impurity Draws per Day

Fusel oil, heads (technical alcohol) and other draws per day from the plant capacity and each draw's share of absolute alcohol.

Method: Mass balance on absolute alcohol; draw ratios from plant practice

Input parameters

Unit system: SI

Parameter	Value	Unit
Plant capacity (absolute alcohol)	100.00	kL/d
Fusel oil draw (% of AA)	0.30000	%
Heads / technical alcohol draw (% of AA)	2.0000	%

Calculated results

Parameter	Value	Unit
Fusel oil draw per day, as absolute alcohol	0.30000	m³/d
Heads draw per day, as absolute alcohol	2.0000	m³/d
Main product per day	97.700	kL/d

Formula and method

$$\dot{V}_o = \dot{V}_e f_o, \quad \dot{V}_m = \dot{V}_e (1 - f_o - f_t)$$

Variables

$\dot{V}_e$	Plant capacity (absolute alcohol)	m³/s
f_o	Fusel oil draw (% of AA)	-
f_t	Heads / technical alcohol draw (% of AA)	-
$\dot{V}_o$	Fusel oil per day	m³/s
$\dot{V}_t$	Heads per day	m³/s
$\dot{V}_m$	Main product per day	m³/s

Method and standards

Balance.

Assumptions and limits

- Ratios on absolute alcohol, so the draws are expressed as absolute alcohol. Fusel oil is mostly higher alcohols and water, so its bulk volume differs from this figure.

References

- Mass balance on absolute alcohol; draw ratios from plant practice

Report details

Report reference	FCC-T78B-2CV0 (the same inputs always give the same reference)
Generated	17 November 2026, 19:49 UTC
Calculator	Fusel Oil and Impurity Draws per Day
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/ethanol-distillation/fusel-oil-draw

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.