Degree of Calcination of Hot Meal from Loss on Ignition

Apparent degree of calcination of kiln-inlet or calciner-outlet hot meal from the loss on ignition of the raw meal and of the hot meal sample.

Method: Loss-on-ignition calcination balance

Input parameters

Unit system: SI

Parameter	Value	Unit
Loss on ignition of raw meal	35.500	%
Loss on ignition of hot meal	6.0000	%

Calculated results

Parameter	Value	Unit
Degree of calcination	88.403	%
Share of raw-meal CO_2 still to be released	11.597	%

Notes for this case

• DoC = 1 − LOI_hm(1 − LOI_rm)/[LOI_rm(1 − LOI_hm)]: LOI is referred to the ignited (loss-free) basis so that the comparison is per unit of clinker-forming solids. Calciner outlets run about 90–95 %; recirculating dust and bypass streams distort the apparent value. Ash from fuel is neglected.

Formula and method

$$DoC = 1 - \frac{LOI_{hm}(1 - LOI_{rm})}{LOI_{rm}(1 - LOI_{hm})}$$

Variables

LOI_{rm}	Loss on ignition of raw meal	-
LOI_{hm}	Loss on ignition of hot meal	-
DoC	Degree of calcination	-
$\mathrm{CO_2\ left}$	Share of raw-meal CO_2 still to be released	-

Method and standards

Calcination.

Assumptions and limits

- All LOI is carbonate CO_2 (moisture and organics negligible).

References

Loss-on-ignition calcination balance

Report details

Report reference	FCC-FEDM-2DFW (the same inputs always give the same reference)
Generated	23 November 2026, 17:51 UTC
Calculator	Degree of Calcination of Hot Meal from Loss on Ignition
Method last reviewed	17 November 2026
Software release	FireCAD Calc, release of 22 November 2026
Release checks	3 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/cement/degree-of-calcination

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.