Massecuite Crystal Content and Purity Drop

Crystal % dry solids and % massecuite and the purity drop from massecuite, crystal and mother-liquor (molasses) purities and the massecuite brix.

Method: Purity (solids and pol) balance of crystal and mother liquor

Input parameters

Unit system: SI

Parameter	Value	Unit
Massecuite purity	86.000	%
Crystal purity	99.500	%
Mother liquor (molasses) purity	66.000	%
Massecuite brix	92.000	%

Calculated results

Parameter	Value	Unit
Crystal % dry solids	59.701	%
Crystal % massecuite	54.925	%
Purity drop P_m − M	20.000	%

Formula and method

$$c_s = \frac{P_m - M}{S - M}, \quad c_m = c_s \, Bx_m$$

Variables

P_m	Massecuite purity	-
S	Crystal purity	-
M	Mother liquor (molasses) purity	-
Bx_m	Massecuite brix	-
c_s	Crystal % dry solids	-
c_m	Crystal % massecuite	-
ΔP	Purity drop P_m − M	-

Method and standards

Purity balance.

Assumptions and limits

- Apparent purities.

References

- Purity (solids and pol) balance of crystal and mother liquor

Report details

Report reference	FCC-WQ17-PR58 (the same inputs always give the same reference)
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Calculator	Massecuite Crystal Content and Purity Drop
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/pan-boiling/massecuite-crystal-content

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.