Brix, Pol and Purity of Sugar Products

Purity, non-sugars and glucose ratio of a juice, syrup, massecuite or molasses from its brix, pol and reducing sugars.

Method: ICUMSA definitions: purity = pol/brix × 100; Sugar factory chemical control (daily manufacturing report) definitions; ...

Input parameters

Unit system: SI

Parameter	Value	Unit
Brix (dissolved solids)	15.500	%
Pol (apparent sucrose)	13.000	%
Reducing sugars	0.60000	%

Calculated results

Parameter	Value	Unit
Purity Pol/Bx	83.871	%
Non-sugars Bx − Pol	2.5000	%
Glucose ratio RS/Pol	4.6154	%

Notes for this case

- Apparent purity uses pol; true purity uses sucrose by GC or HPLC.

Formula and method

$$P = \frac{Pol}{Bx}, \quad NS = Bx - Pol, \quad GR = \frac{RS}{Pol}$$

Variables

Bx	Brix (dissolved solids)	-
Pol	Pol (apparent sucrose)	-
RS	Reducing sugars	-
P	Purity Pol/Bx	-
NS	Non-sugars Bx − Pol	-
GR	Glucose ratio RS/Pol	-

Method and standards

ICUMSA definitions.

Assumptions and limits

- Apparent values by pol and refractometer.
- With zero pol the glucose ratio is undefined and is not shown.

References

- ICUMSA definitions: purity = pol/brix × 100
- Sugar factory chemical control (daily manufacturing report) definitions
- as compiled in SugarProcessTech
- Formulas for calculating sugar industry DMR

Report details

Report reference	FCC-ER5Q-WT96 (the same inputs always give the same reference)
Generated	17 November 2026, 19:36 UTC
Calculator	Brix, Pol and Purity of Sugar Products
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/chemical-control/sugar-brix-pol-purity

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.