Acceleration Unit Converter and 0–100 km/h Time

Converts acceleration between m/s², g, ft/s², Gal (cm/s²), km/h per second and mph per second, with the time to reach 100 km/h at that constant acceleration.

Method: SI acceleration units and standard gravity

Input parameters

Unit system: SI

Parameter	Value	Unit
Acceleration	0.30000	g

Calculated results

Parameter	Value	Unit
In m/s²	2.9420	m/s²
In g	0.30000	g
In ft/s²	9.6522	ft/s²
In Gal (cm/s²)	294.20	cm/s²
In km/h per second	10.591	km/(h·s)
Time from 0 to 100 km/h	9.4418	s

Notes for this case

• Standard gravity g_0 = 9.80665 m/s² (exact by definition); 1 ft/s² = 0.3048 m/s²; 1 Gal = 1 cm/s² (used in geophysics and earthquake engineering); 1 km/h per second = 0.2778 m/s². At constant acceleration, 0–100 km/h takes 27.78/a seconds; a typical family car averages about 0.25–0.3 g.

Formula and method

$$1\ g_0 = 9.80665\ \mathrm{m/s^2}, \quad 1\ \mathrm{Gal} = 0.01\ \mathrm{m/s^2}, \quad t_{0-100} = \frac{27.78\ \mathrm{m/s}}{a}$$

Variables

a	Acceleration	m/s²
t_{0-100}	Time from 0 to 100 km/h	s

Method and standards

Acceleration units.

Assumptions and limits

- Constant acceleration for the 0–100 time.

References

SI acceleration units and standard gravity

Report details

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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/general/unit-conversions/acceleration-unit-converter

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.