+ 44 1273 01273
info@caterpillar-red.com

Material Datasheet — Tube Vials (General)

Overview

• Precision glass vials used in frame/flat levels and machine levels.

• Graduations designed for defined sensitivity; bubble travel 2 mm convention used for sensitivity expression.

Construction & materials (general)

Item	Details
Vial material	Borosilicate glass, stress-relieved; baked ceramic graduation lines
Liquid	Stable optical liquid; typical colours: green / yellow-green; others available
Housing/body options	Acrylic or polycarbonate bodies; metal carriers or frames where applicable
Sealing / end closures	Standard end-seals or heat-sealed ampoules depending on vial type
Marking/readability	Graduation spacing suited to sensitivity; clear viewing window

Performance & sensitivity

Sensitivity is the angle required to move the bubble by 2 mm. It is commonly expressed in arcminutes (′ per 2 mm)

Comparison Data

Nominal sensitivity	Arcminutes (′)	Equivalent (mm/m)	Notes
High sensitivity	7′ per 2 mm	2.04 mm/m (per 2 mm bubble travel)	Indicative; final readability depends on vial length and graduation.
Medium-high	10′ per 2 mm	2.91 mm/m (per 2 mm bubble travel)	Indicative; final readability depends on vial length and graduation.
General purpose	15′ per 2 mm	4.36 mm/m (per 2 mm bubble travel)	Indicative; final readability depends on vial length and graduation.

Environmental & durability (general)

• Avoid impact/shock; glass vials are precision components.

• Use within stated service temperatures; thermal drift increases near the limits.

• Protect from aggressive solvents; clean with mild agents.

• Store horizontally and protect from prolonged UV exposure where applicable.