

IC Tube Material Selection Guide

Five resins are extruded for anti-static tubes. This sheet sets out what each one is good at and where it gives way, so a material can be chosen against tolerance, impact strength, clarity and storage rather than price alone.

PVC (polyvinyl chloride)

What it is	Non-flammable, high strength, good flexibility, easy to mould, not brittle, excellent geometric stability, non-toxic and non-polluting, long storage time.
Where it wins	Critical dimension control within 5 mils. Good impact strength for crack free tubes, stable dimension, smooth internal interfacing, short cycle and lead time.
Watch out for	The common default for IC tubes.

HIPS (impact-resistant polystyrene)

What it is	Polybutadiene rubber particles added to polystyrene. Easy to process, good performance, low price, environmentally friendly, halogen free.
Where it wins	Reduced environmental impact from halogen free material.
Watch out for	Poor gloss, low impact strength, brittle product, all-round performance below PVC and ABS.

PC (polycarbonate)

What it is	High performance tube series built on tube design, polymer science and extrusion technology.
Where it wins	Tolerance of plus minus 2 mils, about 50 micron. Accurate unattended high speed loading and unloading, superb clarity for visual inspection, package guide profile design that prevents piggy back, shingling and unit rotation, high impact strength.
Watch out for	Suited to MSOP and TSSOP square body packages. Green materials supporting reduce, reuse and recycle.

PETG

What it is	Used across the SEWATE tube range alongside PVC, PS, PC and ABS.
Where it wins	Chosen where a clear tube and stable geometry matter.
Watch out for	Specified per application.

ABS

What it is	Used across the SEWATE tube range alongside PVC, PS, PC and PETG.
Where it wins	Chosen where impact strength matters more than transparency.
Watch out for	Specified per application.

Choosing in Practice

- Start from the tolerance the receiving line needs. Polycarbonate at plus minus 2 mils is specified where unattended high speed loading has to run without shingling.
- If tolerance is not the binding constraint, PVC is the usual default on strength, geometric stability and long storage life.
- Halogen free requirements push towards HIPS, at the cost of impact strength and gloss.

- Anti-static is a separate decision from resin: surface layer treatment or additives built into the material. Long storage favours the additive route because the anti-static value stays more stable.
- Wall thickness from 0.30mm to 1.85mm trades material cost against drop and crush resistance, and is chosen against the real shipping route.