TECHNICAL DATA SHEET

Polytevo Series Conical Twin-Screw Extruder

Laboratory conical twin-screw extruder · one conical screw pair · 10 mL minimum capacity · up to 400°C · torque measurement



Polytevo Series Conical Twin-Screw Extruder (ACS-7009ZS) — representative configuration

The Polytevo Series Conical Twin-Screw Extruder (ACS-7009ZS) is a compact laboratory instrument with one pair of quick-release conical screws and a 180° opening mixing chamber. Image shown for reference; final configuration is confirmed in the quotation.

CONTENTS

01 Product Overview
02 Core Advantages
03 Specifications
04 Applications

ACS MATERIAL, LLC

959 E Walnut St., Suite 100
Pasadena, CA 91106, USA

Phone +1 (866) 227-0656
Fax +1 (781) 518-0284

contact@acsmaterial.com

Revision Date **11/13/2026**

SECTION I

Product Overview

Polytevo Series Conical Twin-Screw Extruder (ACS-7009ZS) is a compact laboratory conical twin-screw extruder with one pair of quick-release conical screws, a 10 mL minimum processing capacity, a screw speed of 1–120 rpm, 0–50 N·m torque measurement and a maximum temperature of 400°C.

The ACS-7009ZS is a compact instrument specially developed for mixing new materials, for use on laboratory benches or in fume hoods. With a minimum processing capacity of 10 mL it addresses the problem of insufficient or costly synthetic materials. Its core is a leak-proof mixing chamber that opens fully by 180° together with a pair of quick-release conical screws; the screws and the mixing chamber are treated for minimal wear and chemical resistance.

SECTION II

Core Advantages

— **Small-batch mixing** Minimum processing capacity of 10 mL; blending experiments can be carried out with only 5–15 g of raw material.

— **Quick-release conical screws** One pair of conical screws (Ø10 mm small end, Ø25 mm large end, 200 mm effective length) that release quickly for cleaning and maintenance.

— **Internal circulation channel** An internal circulation blending channel in the barrel that can simulate the residence time of polymers in the screw.

— **Five experimental modes** Single-cycle, timed-cycle, continuous feeding, constant-speed and constant-torque blending.

— **180° opening chamber** A leak-proof mixing chamber that opens fully by 180° (horizontal swing opening).

— **Variable-pitch, variable-diameter screw** A double-helix variable-pitch and variable-diameter screw that helps prevent rod climbing of high-viscosity polymers.

— **Rheological measurement** Rheology control software measures the rheological properties of mixtures.

— **Torque, pressure and temperature data** Electronic direct-drive torque measurement of 0–50 N·m, with data acquisition of torque, pressure and temperature.

SECTION III

Specifications

Technical data — ACS-7009ZS

Specifications	
Parameter	**Specification**
Brand	Polytevo Series by ACS Material
Product Name	Polytevo Series Conical Twin-Screw Extruder
Model	ACS-7009ZS
SKU #	ERP7CTS1
Product type	Laboratory micro conical twin-screw extruder
Screw small end diameter	Ø10 mm
Screw large end diameter	Ø25 mm
Effective length	200 mm
Screw material	38CrMoAlA with nitriding treatment
Barrel material	38CrMoAlA
Feeding mode	Manual feeding; automatic feeding optional
Barrel opening mode	180° horizontal swing opening
Power supply	AC 220 V, 50 Hz
Servo motor power	400 W
Screw speed	1–120 rpm
Torque measurement	Electronic direct-drive torque measurement, 0–50 N·m
Temperature control zones	4
Heating power	1600 W
Maximum temperature	400°C
Temperature control accuracy	±0.5°C

Technical data — ACS-7009ZS (continued)

Specifications	
Parameter	**Specification**
Material mass per cycle	40 g/cycle
Extrusion rate	2.5 kg/h
Touch screen	Fitted
Data acquisition	Torque, pressure, temperature
Overall dimensions	660 × 400 × 620 mm
Weight	60 kg

Scope of delivery

- **Standard configuration:** the ACS-7009ZS conical twin-screw extruder with manual feeding.
- **Scope of supply** — optional automatic feeding and final accessories are confirmed in the quotation.

SECTION IV

Applications

For research and undergraduate teaching, and for micro-sample blending of new or costly synthetic materials on laboratory benches or in fume hoods.

Product value: blending from 5–15 g of material with a 10 mL minimum capacity, up to 400°C, torque measurement and rheology control software.

Revision Date: 11/13/2026

DISCLAIMER

Polytevo Series is a product line of ACS Material, LLC. ACS Material, LLC believes that the information in this Technical Data Sheet is accurate and represents the best and most current information available to us. ACS Material makes no representations or warranties, either express or implied, regarding the suitability of the equipment for any application or the accuracy of the information contained within this document. Specifications are typical and may vary; confirm product details and application suitability at the time of quotation. Accordingly, ACS Material will not be responsible for damages resulting from use of or reliance upon this information.