

Edgetek™ AT Acetal (POM) Compounds

The Edgetek™ AT product family is a range of unfilled, filled and impact grade acetal (POM) compounds. Using POM homopolymer or copolymer as the base resin, these materials offer a wide range of physical properties. Edgetek AT compounds are available pre-colored or can be colored during the manufacturing process with concentrates such as PolyOne's OnColor™ masterbatches.

The inherent crystallinity of Edgetek AT provides high strength, stiffness and hardness; good chemical and environmental resistance; low friction and wear; and low moisture absorption. Take into account that as many resins acetal has poor resistance to chlorine an oxidizing environment. Edgetek AT is available in a standard range or can be custom-formulated to meet your specific product and design requirements. Grades are available for both injection molding and extrusion applications. All compound grades are UV stabilized.

This document provides general advice on molding processes for the use with Edgetek™ AT compounds. The information provided in this document is intended only as a guide to use together with your past experience of molding techniques where applicable, using these materials. Our staff will be will be happy to assist in any areas where this guide does not provide a satisfactory solution.

Injection molding parameters

The barrel temperatures below should be used as a reference point. Actual melt temperatures should be measured using a pyrometer to ensure consistent and accurate processing.

	Edgetek ATH	Edgetek ATC
	POM HOMOPOLYMER	POM COPOLYMER
Barrel Temperatures	Metric	Metric
Rear Zone	180 – 190 °C	180 – 190 °C
Center Zone	190 – 200 °C	180 – 190 °C
Front Zone	200 – 210 °C	190 – 200 °C
Nozzle Temperature	210 – 215 °C	200 – 210 °C
Melt Temperature	210 – 220 °C	195 – 210 °C
Mold Temperature	80 – 100 °C	75 – 100 °C
Back Pressure	< 4 Mpa	< 3 Mpa
Screw Speed	50 – 90 rpm	50 – 90 rpm
Injection Speed	100 – 300 mm/s	100 – 300 mm/s
Injection Pressure	60 – 150 Mpa	60 – 150 Mpa
Hold Pressure	80 – 100 Mpa	80 – 100 Mpa
Cooling Time	10 – 15 seconds	10 – 15 seconds
Cushion	3 – 6 mm	3 – 6 mm
Screw Type	General – Purpose Screw L/D Ratio = 18:1 - 22:1	General – Purpose Screw L/D Ratio = 18:1 - 22:1
Compression Ratio	2,0:1 – 3,0:1	2,0:1 – 3,0:1
Nozzle	General Purpose	General Purpose

Startup & Shutdown recommendations

Drying	Drying Edgetek AT is not required, but always recommended, as will avoid marks on the surface of the parts and injection problems EDGETEK ATH (POM Homopolymer) should be dried at 80-85°C for 3h. EDGETEK ATC (POM Copolymer) should be dried at 80-100°C for 4h.
Purge Compound	HDPE or HIPS
Shutdown	The recommended startup and shutdown procedures for Edgetek AT products begin and end by purging the equipment with a general purpose HDPE or HIPS resin. All tooling and equipment must be free from any residual Edgetek AT upon shutdown. Continue generating parts made from the natural HDPE or HIPS until clear. When using a hot runner system, care must be taken to remove residual product from the manifold.
Coloring	Contact your PolyOne Representative.
Recycling	Edgetek AT is fully recyclable. Conventional granulators with sharp blades should be used. Consistent regrind usage of up to 10% is permissible. Excessive fines or dust-like particles should be avoided.

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