

Trifilon Switch® 2099

Art nr: Switch2099-10565-1

Natural Fiber Reinforced Biobased Polyester

1. Designation of product, preparation and manufacturer

1.1 Trade name:	Trifilon Switch2099
1.2 Use of product:	Plastic compound for manufacture of injection moulded parts.
1.3 Manufacturer:	Trifilon AB Flättnaleden 6 611 45 Nyköping Sweden
1.4 Type of machine equipment:	Designed for use on standard screw injection molding machine with open nozzle and non-return flow valve.

2. Processing conditions for injection moulding

2.1 Processing Temperatures:	Values	Units
Feeding zone	20-40	°C
Zone 1	140-155	°C
Zone 2	155-170	°C
Zone 3	170-185	°C
Zone 4	205-210	°C
Machine nozzle	195	°C
Mass temperature	185-205	°C
Hot Runner System	190-205	°C
Mould temperature	20-40	°C

3. Machine settings for injection molding

3.1 Machine settings:	Values	Units
Screw rotation speed	<180	rpm
Back pressure	20-40	bar
Shot volume (of max barrel shot volume)	>1/3	-
Injection speed	Medium-High	-
Holding pressure level (of parts max inject. press. in bar)	60-90	%
Holding pressure time (of total cooling time in seconds)	25-50	%
Melt cushion (of parts shot volume)	10-20	%
Ejection temperature	<100	°C

General advice: We recommend cold runner systems and suitable sprue, gate and venting design to enable the optimal filling of the mold with a natural fiber reinforced polymer. If a hot runner system is used, we recommend an open gate design with a minimum gate diameter of 1 mm. Non-tapered pin or parallel valves are recommended over tapered gates.

4. Machine cleaning advice

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| 4.1 Prior to production: | To ensure optimal results, purge injection molding machine with polypropylene or relevant purging compound. |
| 4.2 During production: | Ensure that tooling and screw zones are set to the recommended temperatures. If tool is not filled, increase temperature stepwise. Material has a tendency to burn and therefore needs a constant melt flow. Avoid temperatures above 210°C as natural fibers in compound will begin to rapidly degrade causing a significant decrease in mechanical properties. |
| 4.3 Post production: | Ensure that injection molding machine is purged with polypropylene or relevant purging compound. |
| 4.4 General advice: | To avoid risk of material degradation and possible risk of pyrolysis, the dwell time of the material inside the machine should be minimized as much as possible. |

5. Tooling maintenance advice

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| 5.1 Prior to production: | To ensure optimal results, apply a conventional mold release to the tooling prior to production. |
| 5.2 During production: | Trifilon resins may leave natural fiber residuals on the tooling surface. These residuals are non-toxic, non-corrosive, non-oxidative and can be removed with a standard cold degreasing agent. |
| 5.3 Post production: | To remove any natural fiber residuals from the tooling surface, use a standard cold degreasing agent in combination with a mildly abrasive scouring pad or cloth. Follow the instructions provided with the standard degreasing agent. |
| 5.4 General advice: | Trifilon resins may leave natural fiber residuals on general purpose tooling steel (e.i. P20). These residuals do not damage the tooling surface and can be removed with a standard degreasing agent. |

6. Storage and drying conditions

- 6.1 General advice: Trifilon Switch2099 is a natural fiber reinforced thermoplastic compound based on a bio-based polyester. For optimal mechanical performance, residual moisture content should be lower than 2000 ppm (approx. 0,2% relative moisture content). Residual moisture content of more than 2000 ppm will result in a decrease in mechanical performance of material. To avoid problems related to moisture, ensure material is thoroughly dried prior to use.
- 6.2 Storage conditions: Store in a cool, dry location. Ensure good housekeeping practices during storage, transfer and handling of material. Keep storage bags closed to prevent contamination. Opened goods should be used immediately or adequately resealed to avoid moisture uptake and contamination.
- 6.3 Storage conditions for finished products: It is recommended to store the finished goods in a cool, dry place. Depending on the storage conditions and processing conditions used to mold the products, storage time may vary. Trifilon AB cannot provide any shelf life guarantees for finished goods. It is recommended that customers perform their own storage tests to adapt to their product and general storage environments.
- 6.4 Drying advice: To ensure optimal results, drying is recommended at maximum 60 °C for a period of 2 - 4 hours using a desiccant dryer which has a dew point of -40°C. For rotating drum dryers, the recommended temperatures are 100°C for 2-4 hours. The recommended drying time can vary depending on storage conditions of material.

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