



技術資料表 Technical Data Sheet

1WSO1990ATYPE

矽氧烷改質複合，改善表面滑順，提高耐磨性、耐刮擦性，幫助流動性，改善脫模性，提高加工效率

The addition of siloxane-modified composites improves surface smoothness, enhances wear resistance and scratch resistance, improves flowability, improves mold release properties, and increases processing efficiency

樹脂 Resin	TPU 聚酯類 Thermoplastic Polyurethane polyester
規格 Grade	1WSO1990A-P1
來源 source	上禾伸企業 SHANG HE SHEN ENTERPRISE CO., Ltd.

描述 Description

■添加矽氧烷後，優化手感，TPU 塑料表面賦予滑順、乾爽的觸感，且降低摩擦係數，表面更滑順，增強耐磨抗刮，提高製品的耐磨耗能力與耐刮擦表現，進而改善 TPU 塑料容易發黏或摩擦力過大的問題。

The addition of siloxane optimizes the feel, giving the TPU plastic surface a smooth and dry touch, while reducing the coefficient of friction, making the surface smoother, enhancing wear and scratch resistance, and improving the wear resistance and scratch resistance of the product. This also improves the problem of TPU plastic being sticky or having excessive friction.

■降低黏度，改善加工流動性，改善脫模性，提高加工效率。

It reduces viscosity, improves processing fluidity, enhances mold release properties, and increases processing efficiency.

■抗張強度及斷裂延伸率大，優秀彎曲強度與反撥彈性。

It has high tensile strength and elongation at break, as well as excellent flexural strength and repulsive elasticity.

■可耐低溫-35~-50°C，非常適合在低溫環境使用。

It can withstand temperatures as low as -35 to -50°C, making it ideal for use in low-temperature environments.

■耐油、耐潤滑油及耐脂肪族碳氫有機溶劑，且具抗氧、臭氧及耐老化之特性。

It is resistant to oil, lubricating oil, and aliphatic hydrocarbon organic solvents, and also has the properties of resisting oxidation, ozone, and aging.

■可和 PC、PC/ABS 雙次射出黏合。

It can be bonded with PC and PC/ABS by double injection.

■是綠色環保塑料，對環境非常友善，可短期內，在自然環境中分解，低汙染。

It is a green and environmentally friendly plastic, which is very friendly to the environment. It can be decomposed in the natural environment in a short period of time and has low pollution.

應用 application

墊片、軸襯、膠皮、薄膜、管件、電線電纜、運動鞋底、衣服與裝備零件、飾品件扣具零件、運動器材以及機械零件等。

Gaskets, bushings, rubber, films, pipe fittings, wires and cables, sports shoe soles, clothing and equipment parts, jewelry fastener parts, sports equipment and mechanical parts, etc.

成型模式

射出成型

Forming mode

Injection Molding

特性 Properties

項目 Project	測試標準 Testing standards	單位 Unit	標準數值 Typical Value
硬度 Rockwell Hardness	ASTM D-2240	Shore A	85±3
比重 Specific Gravity	ASTM D792	g/cm ³	1.2
流動指數 MFR,(MI) 190×2.16KG	ASTM D1238	g/10min	50
收縮率-平行 Mold Shrinkage MD	3 mm t	%	1.8
收縮率-垂直 ⊥ Mold Shrinkage TD			~2.2
耐燃性 Flammability	UL-94		HB
顏色 Color			natural color

機械特性 Mechanical properties

伸張降伏強度 Tensile Strength at Yield	ASTM D638	kg/ cm ²	74
伸張斷裂強度 Tensile Strength at Break			37
拉伸模數 Tensile Modulus			2800
斷裂伸張率 Tensile Elongation at Break		%	> 200
彎曲強度 Flexural Strength	ASTM D790	kg/ cm ²	20
彎曲模數 Flexural Modulus			270
衝擊強度(缺口式) IZOD Impact (notched)	ASTM D256	23°C kg-cm/cm	15

電氣特性 Electrical properties

體積固有阻抗 Volume inherent impedance	ASTM D257	Ω-cm	10 ¹³
表面阻抗 Surface resistivity		Ω	10 ¹³

成型條件 Molding conditions

烘乾溫度 Drying temp. °C 90 烘乾時間 Drying time H 3~5

■TPU 塑料具有吸濕性，樹脂的預乾燥始終是加工前的必要步驟。依氣候，暴露在大氣中的顆粒會很快吸收水分。水分可能會導致聚合物的裂解，以及在模製和擠出部件中形成氣泡或條紋。為了確保高效和成功加工成優質部件，請參考建議烘乾溫度及時間。

TPU resin has hygroscopicity, and pre-drying of TPU resin is always a necessary step before processing. Relying on the climate, particles exposed to the atmosphere will quickly absorb moisture. Moisture may cause partial degradation of the polymer and formation of air bubbles or streaks in molded and extruded parts. In order to ensure efficient and successful processing into high quality parts, please refer to the recommended drying temperature and time.

進料區溫度 Feed zone temp. °C	165~185	壓縮區溫度 Compression zone temp. °C	170~195
計量區溫度 Metering zone temp. °C	170~195	噴嘴溫度 Nozzle temp. °C	170~195

■TPU 塑料成型溫度以低標為設定基準試做，逐步以 5°C 升高成型溫度，直到適合成型溫度即可，否則溫度過高，產品容易產生變色、過火熱裂解。

The molding temperature is tested by setting the low standard as a reference, and gradually increasing the molding temperature by 5°C until it is suitable for the



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molding temperature. Otherwise, the temperature is too high, and the product is prone to discoloration and overheating.

供應與儲存 Supply and Storage

- 塑料以顆粒形式提供，包裝在 25kg 防潮袋中。

The plastic is supplied in pellet form, packaged in a 25kg moisture-proof bag.

- 塑料應儲存在陰涼乾燥的環境中，直到使用前為止。

Plastic should be stored in a cool, dry environment until just before use.

- 塑料儲存溫度不應超過 30°C。如果僅從袋中使用一部分 TPU 樹脂，則其餘 TPU 樹脂應該緊密封閉。

Plastic storage temperature should not exceed 30°C. If only a portion of the TPU resin is used from the bag, the rest of the TPU resin should seal tightly.

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