

Si-TPV 3420-60A: Discover A Brand-New PC Overmolding Solution for Vertical Mouse With More Comfort and Durability!



Chengdu, Sichuan Apr 13, 2026 ([IssueWire.com](https://www.issuewire.com)) - A Systemic Upgrade from Hard Shell to Skin-Friendly Experience for Vertical Mouse

In the field of ergonomic peripherals, the vertical mouse effectively alleviates wrist fatigue through its unique grip angle. However, the most direct point of contact between the user and the device—the

surface of the housing—often remains a weak link in the overall experience. Professional industrial designers, brands seeking differentiation, and users with stringent demands for long-term comfort are searching for a material that goes beyond meeting basic protection and decorative needs. They require a material capable of conveying refined sensory quality, lasting cleanliness, and reliable structural integrity. Traditional soft elastomers used for overmolding internal PC frames often force compromises between tactile feel, durability, and aesthetics. Si-TPV 3420-60A, as a high-performance overmolding material, provides a comprehensive solution for vertical mouse housings, enabling an experiential leap from "using a tool" to "enjoying the grip."

Experiential Bottlenecks and Design Limitations of Traditional Mouse Overmolding Materials

To enhance grip comfort, mid-to-high-end vertical mice on the market commonly utilize a two-shot injection molding process that combines a rigid PC internal frame with a surface overmolded in a soft elastomer. The current mainstream overmolding materials are Thermoplastic Polyurethane (TPU) and Silicone Rubber. Each possesses inherent, difficult-to-overcome defects that limit a product's progression into higher-end market segments.

TPU is widely used due to its good wear resistance and processability, but its inherent properties create core contradictions:

- **Hard, Unyielding Feel:** To ensure the structural strength and deformation resistance of the overmolded layer, TPU formulations typically result in a grip that feels excessively firm and cool to the touch, lacking skin affinity. Prolonged use can easily lead to fatigue at pressure points on the hand.
- **Limited Surface Aesthetics:** The surface texture tends to be unrefined, making it inherently difficult to achieve a premium matte finish. More critically, under long-term exposure to sweat erosion and complex chemicals (such as high-pH cleaners), the material surface is prone to becoming tacky and developing an oily sheen.

The Process and Performance Challenges of Silicone Rubber Overmolding:

Silicone rubber offers exceptional soft tactile feel and thermal stability, but its application presents equally distinct pain points:

- **Low Processing Efficiency and High Cost:** silicone rubber usually leads to longer production cycles, higher energy consumption, and difficulty in implementing complex runner designs. Production scrap is non-recyclable, resulting in consistently high overall costs.
- **Bonding Reliability Concerns with PC Substrates:** The adhesion between Silicone Rubber and PC involves bonding across different chemical families. Even with the use of primers, there remains a potential risk of delamination or cracking under long-term thermal cycling or mechanical stress, compromising product lifespan.
- **Long-Term Migration Risk:** Silicone oils or low-molecular-weight substances in some Silicone Rubber formulations can gradually migrate to the surface over time, causing an oily bleed effect. This not only makes the surface slippery but also causes it to attract more dust.

Discover How [Si-TPV 3420-60A](#) Improve PC Overmolding Performance in Both Experience and Performance

Si-TPV 3420-60A is not a simple modification of existing materials. Through its unique dynamic

vulcanization technology, it achieves a permanent fusion—at a microscopic level—of the exceptional properties of silicone rubber with the processing advantages of thermoplastics. As an ideal overmolding partner for PC frames, it delivers a multi-dimensional performance leap.

Skin-Friendly Feel with Mechanical Balance

It can provide excellent tear resistance and resilience even within a [lower hardness range](#) (e.g., Shore A 60-70A). This means an overmolded mouse can offer a soft, warm tactile sensation akin to human skin. Simultaneously, the internal silicone rubber phase imparts superior damping characteristics to the material, effectively absorbing hand micro-vibrations and ensuring comfort during extended use.

Inherent Premium Matte Finish with a Stable Surface

Thanks to its unique microstructure, Si-TPV 3420-60A molded parts can exhibit a uniform, fine, and durable matte (satin) finish without any secondary spraying or coating. This texture is not only visually understated and luxurious but also feels dry and silky to the touch. Its surface chemistry is stable, resisting erosion from sweat, oils, and common cleaners, ensuring long-lasting appeal. Crucially, Si-TPV 3420-60A contains no migratable plasticizers, fundamentally eliminating issues of surface tackiness after prolonged use.

Efficient Processability and Unbreakable Bond

As a thermoplastic, [Si-TPV 3420-60A](#) can achieve [outstanding bonding with PC frames](#). The compatibility between the two materials in their molten state is far superior to that between silicone rubber and PC, resulting in an extremely strong bond layer with no risk of delamination. The material is recyclable, significantly enhancing production sustainability and cost controllability.

The value created by Si-TPV is the elevation of a vertical mouse from a correct ergonomic form into a sensory vehicle for emotional connection and quality trust. It directly addresses the deeper need of discerning users who demand not just functionality, but superior grip, comfort, and easy maintenance.

The root of this value realization lies in Si-TPV's hybrid material DNA. It possesses the premium tactile feel, stability, and physiological affinity of silicone rubber, combined with the precision processing efficiency and robust bonding capability of engineering plastics. This unique fusion allows it to seamlessly bridge the gap between demanding user experience and scalable, reliable manufacturing. Adopting Si-TPV means choosing a direct path to defining a premium product. It eliminates the need for constant compromise between touch, appearance, durability, and cost. Its skin-friendly softness, inherent matte aesthetics, built-in hygiene barrier, and integral structural unity with the PC frame collectively forge a systematic product moat. This competitive advantage is difficult for rivals to replicate through simple imitation or mere specification matching.

Therefore, integrating Si-TPV into the design and manufacturing plan for your next-generation vertical mouse is more than a material substitution; it is a forward-thinking redefinition of product value. We invite you to explore Si-TPV in depth and join us in discovering how to translate your cutting-edge designs into truly memorable tactile experiences. Contact us via amy.wang@silike.cn or visit www.si-tpv.com explore how to integrate Si-TPV into your formulations today.



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