

Extraordinary Feature

Unique tactile perception:

Smooth and Silky touch w/o further processing

- . Chemical & UV resistant
- . Abrasion, scratch, heat resistant
- . Hassle-free on Cleanliness
- . Easy to clean and resistant to dirt and dust.
- . Skin-friendly suitable for prolonged skin contact
- . Strong bonding with PC/ABS and PC
- . Achieve Sustainability Goals

Overmolding Compatibility

Si-TPU portfolio is designed to be compatible with a variety of rigid substrates and features self-adhering properties that facilitate the formation of a robust bond through over-molding or co-molding techniques.

The materials enable the creation of durable, silky surfaces that are particularly well-suited for ergonomic applications, wearable technology, and portable electronic devices.

Scope of Application

Electronics

Wearable Electronics
Accessory Cases and Speakers

Other Consumer Products

Flexible Pipes
Handles or Soft Touch Grips
Automotive Interior Components

Tough and Versatile

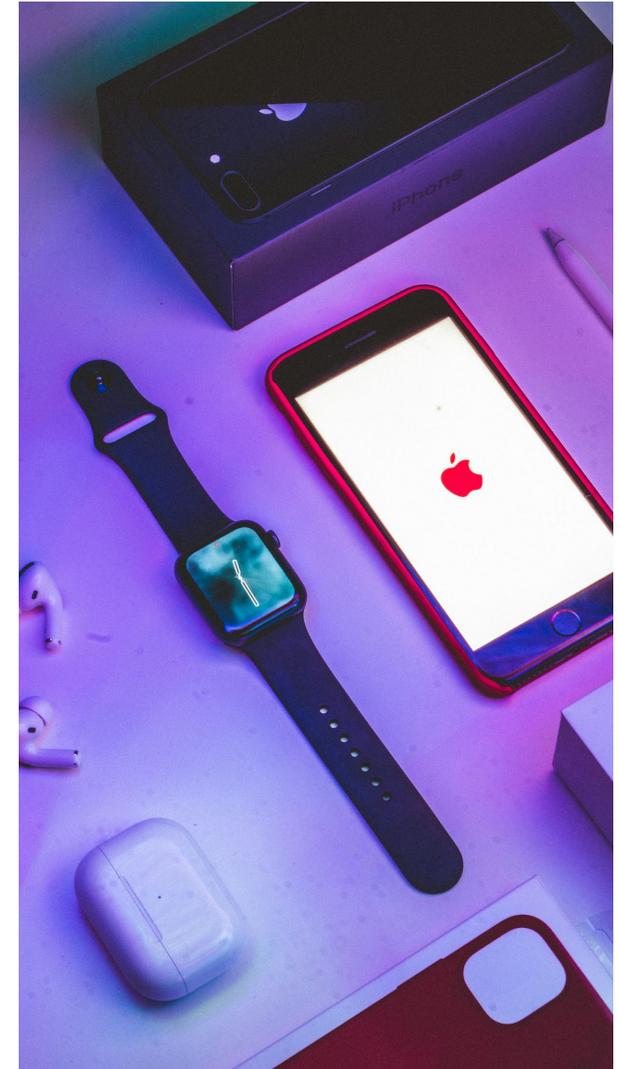
When you combine the strength, toughness, and abrasion resistance of a thermoplastic elastomer with the softness, UV and chemical resistance, and colorability of silicone, you get.

Additionally, these materials are free from plasticizers that can cause surface stickiness. Instead, the silicone itself acts as an effective softening agent.



Siloxane Modified TPU

Si-TPU provide a unique combination of properties and advantages derived from both thermoplastics and fully crosslinked silicone rubber.



Materials in wearable devices

In selecting materials for wearable devices, it is essential that they are safe, breathable, waterproof, durable, comfortable, flexible, soft, and well-fitting (skin-friendly), so polymer materials have become one of the main materials for wearable devices.



Advantages

Skin-Friendly

Safe for skin contact

Eco-Friendly

Bio- Bio based
PIR- Pre consumer
PFAS Free

Unique Soft Touch

Silky Feel

Durability

Scratch & abrasion resistance
Chemical & Stain resistance
UV resistance

Compare to FKM

- . Without Coating
- . Easy to color
- . Excellent Abrasion resistance
- . Lighter Specific Gravity
- . PFAS Free compliance



Performance Characteristics of STAR Si-TPU Thermoplastic Elastomers

| Performance Indicators | Unit | Numerical Value | | | Application |
|-------------------------------------|---------|------------------------------|-----------|-----------|---|
| | | 7012-60A | 7012-65A | 7012-75A | |
| Yield force | N | 144.53 | 179.62 | 190.43 | Replace FKM and applicable to all wearable Electronics. |
| Yield stress | MPa | 10.47 | 14.17 | 18.56 | |
| Yield elongation | % | 572.40 | 779.33 | 843.23 | |
| Rupture stress | MPa | 10.19 | 13.64 | 14.34 | |
| Elongation at break | % | 554.28 | 757 | 654.32 | |
| Tensile strength | MPa | 9.8 | 14.2 | 18.65 | |
| 300% Constant Elongation Resilience | % | 74.10 | 89.1 | 902.3 | |
| Hardness | Shore A | 61A | 63A | 74A | |
| Density | g/m3 | 1.194 | 1.173 | 1.204 | |
| Sustainability | % | PIR: 10%-70% and Bio: 5%-25% | | | |
| PFAS Free Compliance | | PFAS Free | PFAS Free | PFAS Free | |