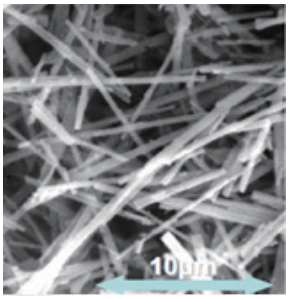
钛酸钾晶须 TISMO®

特点



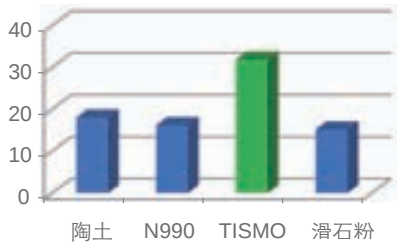
大塚化学于1979年在日本首次推出商业用钛酸钾晶须TISMO。TISMO是一种钛酸钾纤维，其化学分子式为$K_2O \cdot nTiO_2$，直径为0.2～0.6μm，长度为10～20μm的一种极细纤维。其优异的耐热性，绝热性，化学稳定性等诸多物性，作为塑料、橡胶及金属的补强材料，汽车用摩擦材料，精密过滤器等在各个领域都有出色的用途。产品特点如下，

1. 高长径比，具有与碳纤维同等的高强度和高刚性
2. 较好的耐磨性，白色，具有很强的着色能力

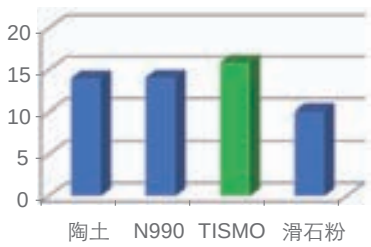
性能

氟橡胶中的应用-提高抗破坏能力

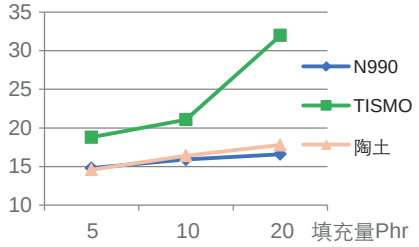
撕裂强度(N/mm)



拉伸强度(MPa)



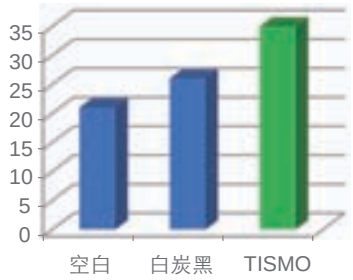
撕裂强度(N/mm)



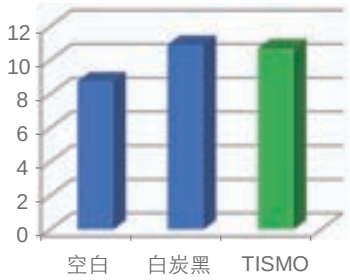
在氟橡胶中用低剪切混炼工艺填充TISMO，能够大幅度提高胶料的热撕裂强度和拉伸强度，同时橡胶的耐热性能也会得到改善。TISMO高填充时能够进一步提高氟橡胶的耐高温老化性能。建议用量在5~25phr。TISMO有优异的摩擦特性，尤其适用于高抗撕裂、耐高温的油封等产品。

硅橡胶中的应用-提高抗破坏能力

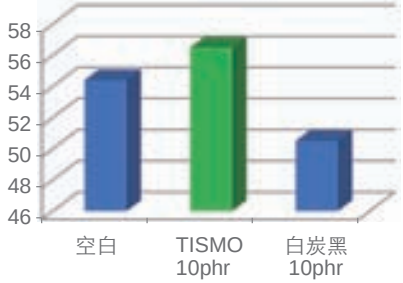
撕裂强度(N/mm)



拉伸强度(MPa)



回弹(23°C) /%



在硅橡胶中用低剪切混炼工艺填充TISMO，能够大幅提高橡胶的抗撕裂性能，同时保持硅橡胶的高弹性，提高硅橡胶耐热老化性能，其性能明显优于传统的白炭黑填料。TISMO高填充时能够进一步提高硅橡胶的耐高温老化性能，建议用量在5~30phr。在普通沉淀法硅橡胶中添加TISMO，能够制成高抗撕裂，且高弹性的硅橡胶产品，也可用于制作耐苛刻温度的硅橡胶制品。

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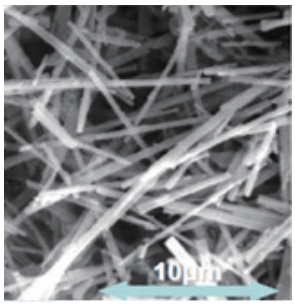
Otsuka

Potassium Titanate Whisker TISMO®

Features

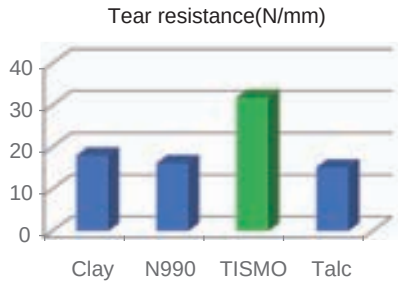
Commercial potassium titanate whisker TISMO was first introduced by Otsuka Chemical in 1979. TISMO, formula of $K_2O \cdot nTiO_2$, is an ultrafine fibre with a diameter of 0.2～0.6μm and length of 10～20 μm. Due to its outstanding heat resistance, adiabaticity and chemical stability, TISMO is widely used as reinforcing material in plastic, rubber, metal, automobile brake pad, and other field like precision filters. Its advantages are as following.

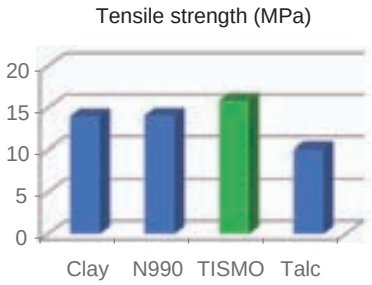


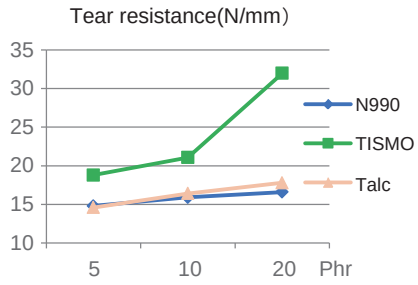
1. High aspect ratio, same high strength and stiffness as carbon fiber
2. Good abrasion resistance and white coloring ability

Performances

Fluoroelastomer Application - Improve Strength

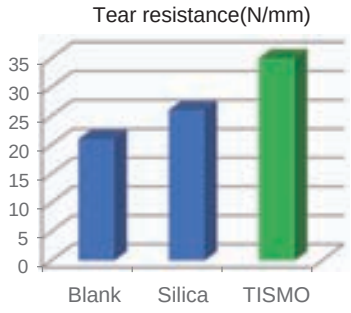


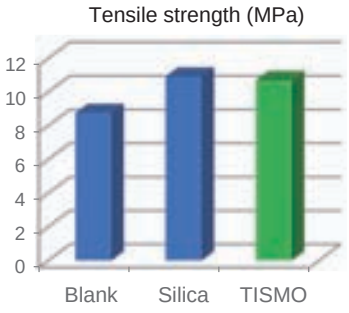


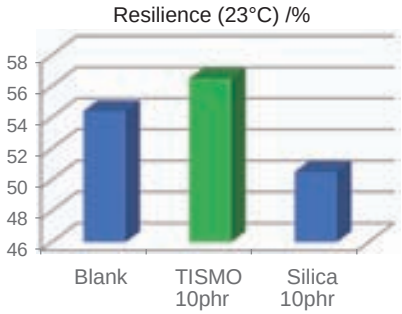


TISMO added by low shear mixing process, improves fluoroelastomer's high temperature tear resistance and tensile strength, along with the thermal stability. As the addition amount of TISMO increases, tear resistance and thermal resistance increase significantly. Recommended adding amount is 5~25phr. TISMO has superior friction feature, especially suitable for products like oil sealings, which requires high tear resistance and thermal stability.

Silicone Elastomer Application - Improve Strength







TISMO added by low shear mixing process, improves silicone elastomer's tear resistance and thermal resistance while maintaining its high elasticity. TISMO shows better performances when comparing with silica. As the addition amount of TISMO increases, it further improves thermal and tear resistance. Recommended adding amount is 5~30phr. Silicone rubber with high tear resistance and high resilience can be achieved with the introduction of TISMO in precipitated silicone rubber. TISMO can also be used in the production of silicone rubber which requires severe high temperature resistance.

All test results are for reference purpose only, not guarantee for actual products.

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