

Case Study

Irgastab® Cable KV 10

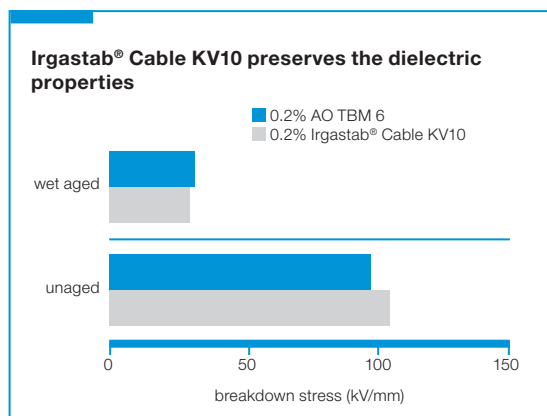
A high performance multifunctional antioxidant for peroxide XLPE medium voltage & high voltage power cables insulation.

With energy power demand on the continuous rise, the renewal of existing power network and expansion of new lines including renewable energy generation become crucial to manage congestion, seasonal peaks of demand and costly blackout.

Peroxide crosslinked polyethylene (XLPE) is commonly used for the insulation of medium and high voltage power cables. Major challenge for the stabilizers and antioxidants, respectively, is to provide long service lifetime by effectively protecting the polymer from degradation and consequently maintain the physical and dielectric performances.

With Irgastab® Cable KV 10, BASF provides the cable industry with an outstanding antioxidant system enabling safe processing while preserving the dielectric properties of the final article.

It starts with the product form, a 100% active additive efficient at low dosage, alone or with other co-stabilizers and easily miscible and stable with peroxides used for crosslinking. It guarantees easy handling and smooth preparation of the compounds.



Irgastab® Cable KV10 and peroxides exhibit high stability over time

After mixing at 60°C

After 5 days at 60°C

Stability with DCP (1:10)
 (1) Irgastab® Cable KV10
 (2) AO TBM 6
 (3) Irganox® 1035; Irganox® PS 802: 1:1
 Irgastab® Cable KV10 does not interfere with the peroxide agent under cross-linking process conditions



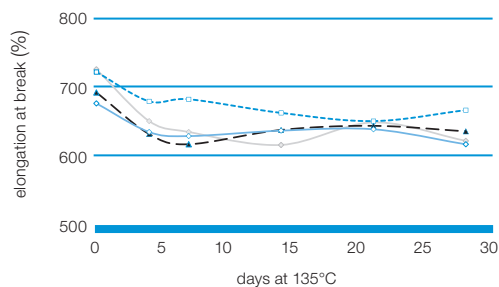
Irgastab® Cable KV 10 is above all necessary to provide high level of scorch protection during cable manufacturing and the risk of thermal oxidation inherent to the process and composition. Being an excellent thermal stabilizer for this application, it also enables an outstanding degree of cross-linking between the peroxide agent and the polymer.

Stabilization during processing has to be complemented by Long-Term Thermal Stabilization (LTTS) to ensure the highest level of performance of the cable during its entire life. Irgastab® Cable KV 10 is a versatile stabilizer that provides both processing and LTTS to the system. Polymers insulating the cables will see their mechanical properties with very limited degradation when Irgastab® Cable KV 10 is used and performance of medium medium voltage/ high voltage power cable will be maintained to the end of their service life.



From processing to end use, Irgastab® Cable KV 10, thanks to its excellent efficiency and high purity, will ensure high insulation consistency of the produced cables, delivering safe and secure power transmission as required by demanding industry standards.

Irgastab® Cable KV10 provides Long Term Thermal Stability of peroxide XLPE

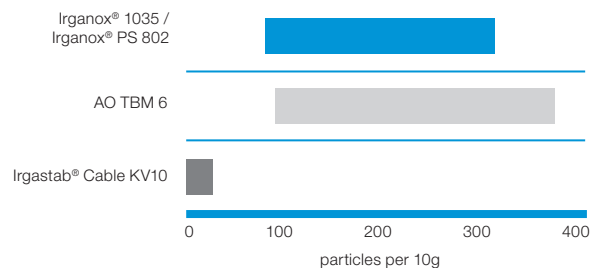


Measured according to IEC 811-1-1

- 0.2% Irgastab® Cable KV10
- 0.3% Irgastab® Cable KV10
- ▲ 0.2% AO TBM 6
- ◇ 0.15% Irganox® PS 802

Irgastab® Cable KV10 provides excellent mechanical performances and fulfill the industry standards: 75% retained elongation at break after 10 days at 150°C.

Irgastab® Cable KV10 achieves highest purity



10g solved in 100ml solvent and filtered through 0.45 micron paper filter; computer-controlled microscope from particles bigger than 50 microns.