

## THERMAL STABILITY

### Comparative thermal stability

Date: 05/04/2023

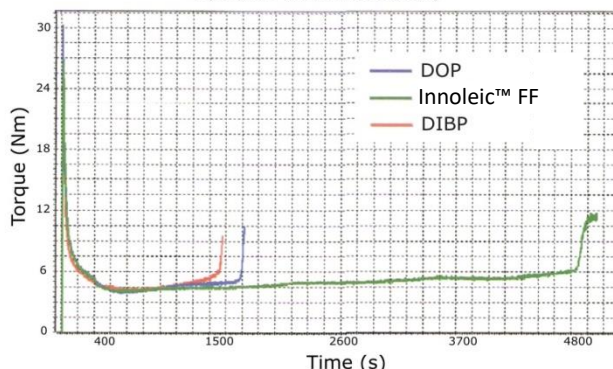
Thermal stability is a measure of the compound to withstand temperature over time. There are several methods to analyze this characteristic, such as ASTM D 2115 (Static Stability) and ASTM D 2538 (Dynamic Stability). As it is well discussed in the literature, epoxy plasticizers provide increased thermal and UV stability to flexible PVC compounds, as the oxirane rings scavenge free HCl reducing the degradation of the PVC resin.

The images on the right show this significant improvement in thermal stability of Innoleic™ FF when compared to phthalate formulations. This same effect is observable with all Innoleic™ products

Thermal Stability Metrastat @ 175°C



Dynamic Thermal Stability



The image on the left shows the differences between formulations made with traditional and Innoleic™ GPe 8. The same effect is observed for all Innoleic™ products. In this test, all compounds were formulated with 60 phr of plasticizer, and the oven temperature was 210 °C. Different concentrations of a CaZn stabilizer were used for comparison. As it can be noted, the yellowing of Innoleic™ B5 with 0.5 phr stabilizer was similar to that of DOP™ with 2 phr CaZn.