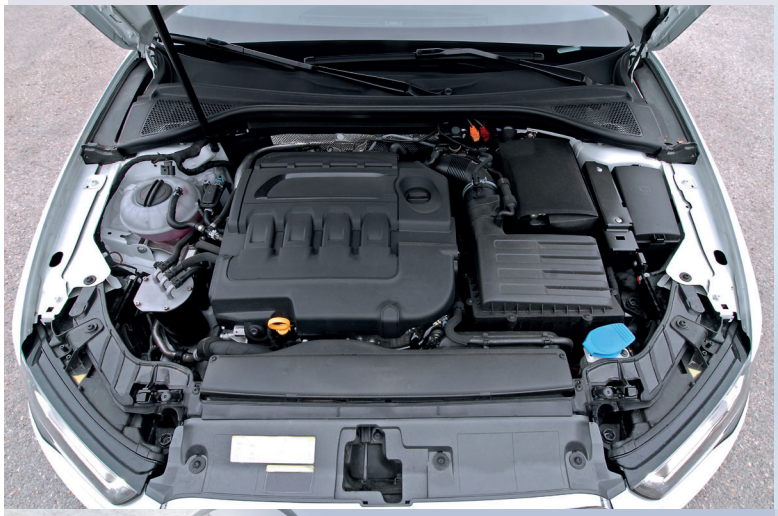
Additives for Polymer Stabilization

Oxidation reactions of organic material, such as polymers, severly affects their characteristics e.g. mechanical properties and color. Oxidation takes place in every stage of the life cycle, more significantly by processing but also during service life. Various additives are added to polymers to slow down the oxidation. By attacking the free radicals formed in the oxidation cycle, these additives contribute to long-term or processing stability to various degrees. Critical to processing stability are the so called secondary antioxidants, which also protect the more long-term acting primary antioxidants, mainly by hydroperoxide decomposition. The presence of an acid scavenger is essential for the function of the antioxidants.

Baerlocher's own resin stabilization technology BAEROPOL RST acts as co-stabilizer to secondary antioxidants but can also be used as a stand-alone secondary antioxidant. In addition, it is a very powerful acid scavenger. BAEROPOL RST can be easily combined with other additives e.g. antioxidants to form additive packages for all polyolefins. It also can be used to formulate customized blends for various end applications in polymer production, processing or even recycling.

Advantages

- Dust free and easy to dose
- Partial or total replacement of phosphites
- Improved color compared to classical phosphites
- Reduced blooming and gel counts
- Hydrolytically stable
- Global food contact approvals



Additives for stabilization are key to ensure processability, mechanical characters and long-term stability, and are a must to have for all converters to fulfil market requirements. Baerlocher's product platform RST helps finding synergistic combinations of typical primary and secondary antioxidants and provide customer specific solutions.

Phosphite Replacement

Traditional phosphites, especially when used at high loadings, can present technical challenges such as plate-out and chemical compatibility issues in the final product. High end phosphites are often too expensive to be considered as an alternative. The RST platform offers the possibility to formulate around such problems, while maintaining cost efficiency.

RST Product Family

RST 92D is made from oleochemical raw materials widely recognized as safe in food contact applications. As part of a base stabilization package, it can help reduce the content of "Non Intentionally Added Substances (NIAS)", when partly substituting tradtitional stabilizers. Others prefer the product form options of RST, enabling a safer and healthier working environment, while also having free-flow properties that ensure uninterrupted feeding.

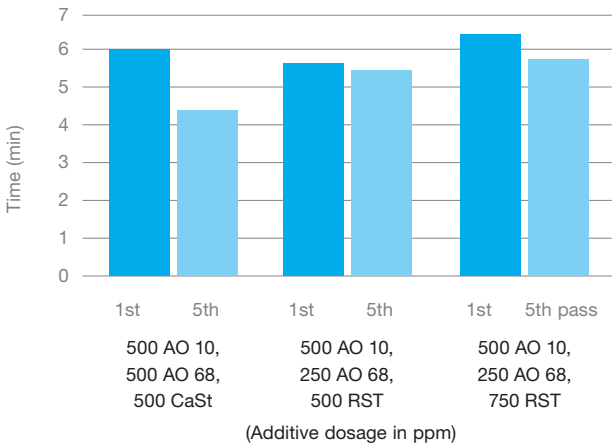
Reduced Yellowing Index

Relative to many traditional stabilization systems Baeropol RST 92D is particularly effective in suppressing yellowing during processing.

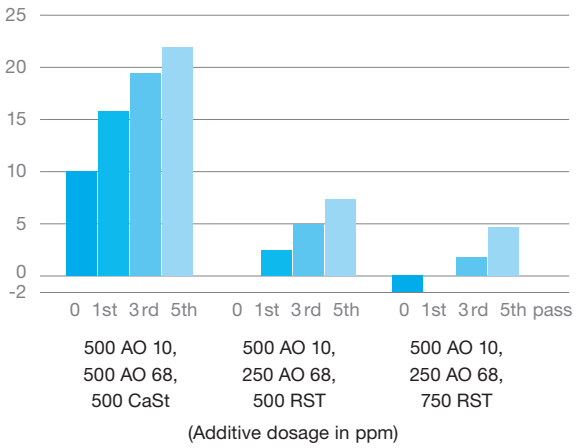
Data from a multiple extrusion trial showing how key properties are affected when RST 92D is allowed to substitute certain components of a typical base stabilization package.

Trial performed in unstabilized PP hompolymer MFI 10

Oxidation Induction Time



Yellowness Index



Baerlocher Products

Product	Description	Typical Applications	Polymers
BAEROPOL RST 92D	Proprietary Blend	Base stabilization co-additive	PP, PE
BAEROPOL one-packs	Blends of Additives (e.g. Antioxidants, UV Stavilizer)	Compounding, recycling and extrusion	PP, PE

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