



DESIGN FOR CIRCULARITY

From recycling to upcycling:  
stabilization for  
longer-lasting PO

SONGWON is a reliable expert in the stabilization of recycled plastic materials.

Plastic is too valuable a material to be used only once. Furthermore, re-use of plastic helps to prevent waste and reduce its impact on the environment. So recycling makes sense in more than one respect.

SONGWON, backed by its many years of experience in the stabilization of plastics, has thoroughly investigated recycling technology and is developing systems that improve the quality of recycled polyolefins (r-PO) and give them a longer second life.

# SONGWON supports customers in combining high quality with environmental friendliness.

## Demanding requirements met



- Progressive and versatile product portfolio
- In-depth research and best-in-class results
- Focus on customers' current and future needs

## Proven reliability



- More than 50 years' manufacturing experience in South Korea
- Backward integration of key raw materials
- Global sales organizations in Asia, Europe and North America

## Technical expertise at hand



- Testing laboratory in South Korea
- Technically advanced, customized stabilizer formulations
- Dedicated local support centers

## Strong commitment



- Continuous innovation to meet new industry standards

Today's plastics industry players are seeking solutions that can meet the ever-evolving requirements for sustainability. SONGWON is responding to these needs by directing its innovation efforts towards improving the sustainability of plastics as well as supporting customers by applying its additive expertise and using specialty chemistry as a powerful enabler for transforming and reusing materials to create new solutions that close loops.

## The “design for circularity” concept helps to give plastic articles a second life.

Plastics are valuable and versatile materials that can be re-used after they reach the end of their first life – not only in new plastic items, but also as chemical raw materials or energy sources.

Stabilizers help plastics withstand the conditions to which they are likely to be exposed throughout their life.

SONGWON's “design for circularity” goes further. Added upstream, during manufacture of the resin, the new SONGXTEND® stabilization packages have been developed to ensure high protection right to the end of a plastic item's service life. They allow further use or recycling without significant loss of initial properties.



## The “top-up” approach enables mechanical recycling.

What happens when plastics are recycled? The same quality standards as those obtained with virgin materials are more difficult to achieve.

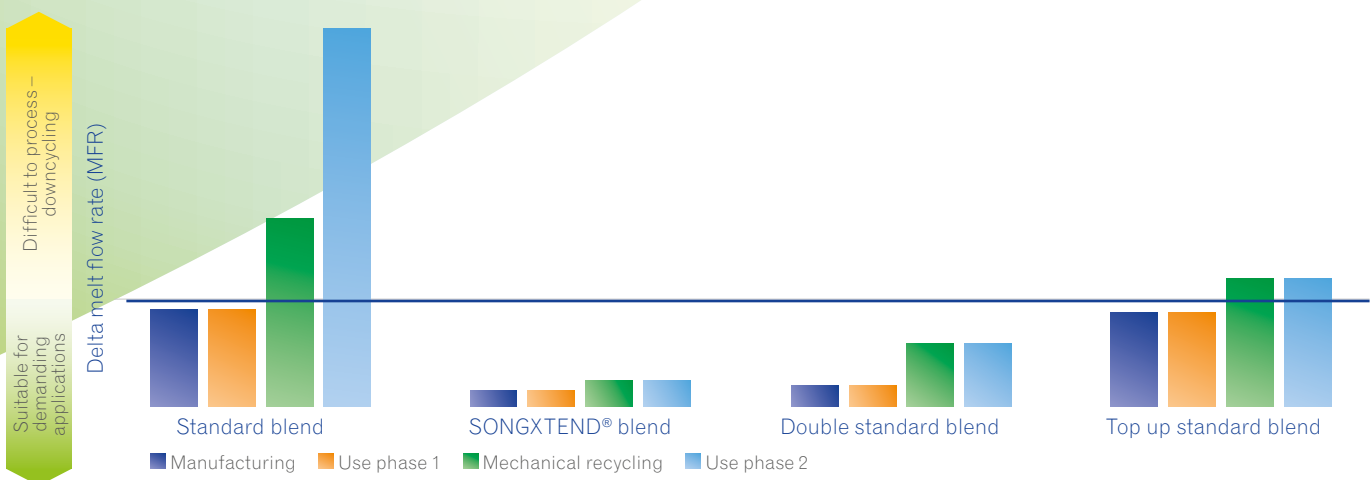
The mechanical properties of r-PO that is not re-stabilized are significantly reduced as a result of the higher melt flow rate resulting from a decrease in molecular weight.

Therefore, re-stabilization (“top-up approach”) is essential to produce recycled resins suitable for a second service life.

Polyolefins are exposed to severe conditions throughout their lifecycle.



The choice of a proper stabilization system helps to prolong the second life of a plastic article.



**Standard blend** = standard blend at typical industry loading level, added upstream, during manufacture

**Top up standard blend** = standard blend + top up at the same loading level as the initial concentration, added downstream, during mechanical recycling

**Double standard blend** = standard blend at double loading level; added upstream, during manufacture

**SONGX TEND® blend** = added upstream, during manufacture

- Formulations based on the SONGX TEND® range show better molecular-weight (MW) retention than standard stabilization packages, providing superior mechanical and long-term thermal stability properties and as a result almost complete protection up to the end of use phase 2.
- A significant increase in the amount of standard binary blend allows polyolefin to be mechanically recycled once.



Check out our  
official website



Check out our  
WeChat account

For further information, please go to:

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SONGWON provides customers with warranties and representations as to the chemical or technical specifications, compositions and/or the suitability for use for any particular purpose exclusively in individual written agreements.

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