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Yparex[®] Compatibilizers for
mechanical recycling of plastics

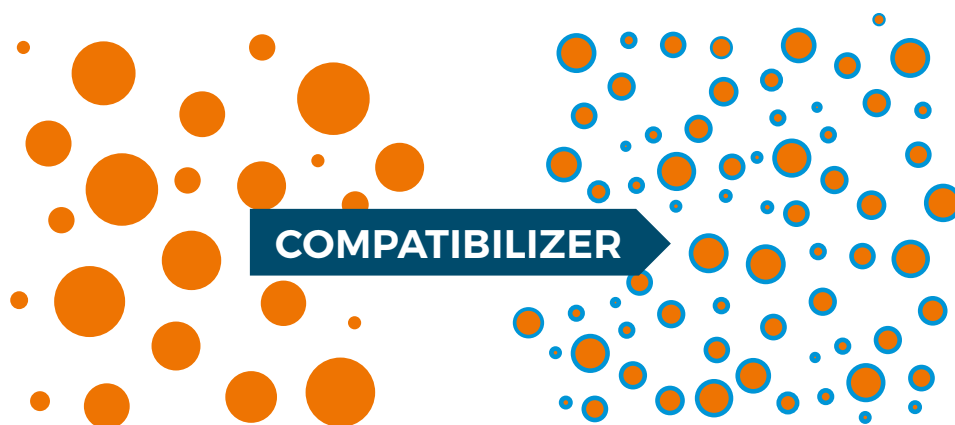
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RECYCLING IS CONSIDERED A MAJOR POLYMER WASTE REDUCTION STRATEGY, AS PART OF THE 4 R'S (REDUCE, REUSE, RECYCLE, RECOVER). YPAREX® OFFERS A WIDE RANGE OF MALEATED POLYOLEFIN AND EVA BASED COMPATIBILIZER FOR MECHANICAL RECYCLING OF SOLID PLASTIC WASTE STREAMS. THESE COMPATIBILIZERS ARE VERY EFFECTIVE IN INCREASING THE PERFORMANCE OF THE COMPOUNDS PRODUCED THROUGH MECHANICAL RECYCLING.

Addition of just a few percent of Yparex® compatibilizer results in a significant increase in processability and mechanical performance of the mechanically recycled material. Yparex® compatibilizers are developed for solid plastic waste mixtures containing two or more of the following plastics: PE, PP, PA, PET, PS, PMMA and PVC.

There is no generic compatibilizer for all waste streams. The specific composition of the waste stream, the properties of the separate components of the waste stream and the processing technique will affect the choice of the best compatibilizer.



In a mixed polymer material, the compatibilizer is used as an additive for bringing the polymers together in a physical mixture especially in the case of immiscible blends

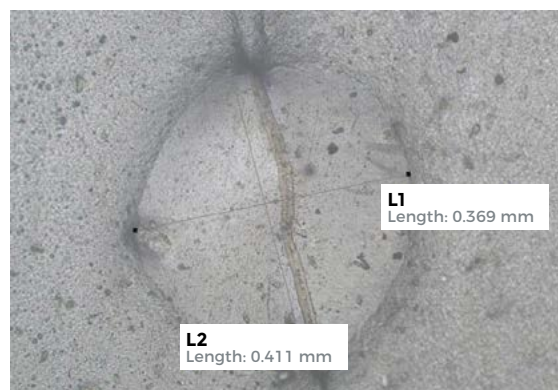


Reduction of gelsize by adding compatibilizer.

Polyethylene waste streams are often contaminated with polar polymer parts. Undispersed, these polar polymer parts make the PE waste stream useless for film processing conversion. The polar polymer parts will show up as big gel particles. Adding an Yparex® compatibilizer results in better dispersion of the polar polymer parts and makes the PE waste stream suitable for film processing.

Adding an Yparex® compatibilizer results in better dispersion

Recycled PE fraction with traces of other polymers



Gel in PE recycle without compatibilizer added



Gel in PE recycle with 10 w% Yparex® 0H17 added



Yparex® compatibilizers portfolio for mechanical recycling of plastics

CODE	TYPE	MAH-CONTENT (A.U.)*	MFR (190@2,16) (G/10 MIN)	DENSITY KG/M ³	MIXTURES
11308	PE	2	4	960	PE-PA
10403		1	3,5	918	PE-PA, PE-PET, PE-PU
0H247		1	3,5	885	PE-PET
0H31		2	6	920	PE-PA, PE-PET
0H39		2	2	920	PE-PA
RENEW 0H17	Biobased PE	2	6	920	PE-PA, PE-PET
0H18	PP	1,5	30	860	PP-PMMA, PP-PA, PP-PET
0H235	PS	middle	1,9 (230@2,16)	942	PS-PE, PS-PA
0H284	EVA	middle	6	944	PE-PVC, PE-PMMA, EVA-PA

*arbitrary units

Reprocessing PE/PA mixture blownfilm

An example of reprocessing a PE-PA waste stream into blownfilm is shown in the pictures below. When using Yparex® 10403 or 0H247, the balloon becomes uniform and stable, which is critical for a blown film process.



Patchy, Uneven Structure



Uniform structure, stable bubble, continuous process



Gel formation

Influence of different compatibilizers (8 wt%). Yparex® compatibilizer 10403 or 0H247 results in the best balloon quality.

Source: Courtesy of UGent, VKC-Centexbel, KU Leuven, VLAIO- TETRA HBC.2017.0056

When using Yparex® 10403 or 0H247, the balloon becomes uniform and stable

Dedication included

Modification of polymers is the core competence of the Yparex® experts, based on decades of experience. Innovation of new materials is our daily job to be able to support the latest developments.



THE COMPOUND COMPANY

ABOUT THE COMPOUND COMPANY

The Compound Company develops and manufactures compounds for the most diverse products and applications. We are specialized in innovative customized solutions. And we are a flexible tolling partner for companies that are looking for extra production capacity.

All of our compounds have one thing in common: they are made with unparalleled devotion and dedication. In that we are invincible. If we say 'yes' to an assignment then we are going to deliver! We won't easily say no. Because making the impossible possible is what drives us. And that is exactly what you can expect from us!

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