Case Studies

Case study #1
Toughening Crystallised PET
Crystallised PET (cPET) trays are widely used for packaging frozen meals. These trays require modified low temperature toughness as they are packaged at temperatures in the -20 to -40°C range. The combination of Lotryl® 24MA02T and Lotader® AX8900 terpolymer can provide for required low-temperature toughness.

Case study #2
Improved Filler Dispersion
Polypropylene talc filled compounds are widely used in the automotive industry for UTH, interior and exterior injection moulded parts but sometimes do not provide adequate toughness. Using Orevac® CA100 as coupling agent significantly enhances filler dispersion and improves impact performance with balanced stiffness.

Impact Strength vs. Modifier Content

Impact Strength [kJ/m²] vs. Modifier Content [%]

Applications

Impact Modifier
Improve mechanical properties and especially impact strength for inherent brittleness occurring at sub-zero temperatures and crack propagation
• Polyesters: PBT and PET
• Polyamides: PA 6, PA 66, PA 11 and PA 12
• PPS
• PC
• ABS
• PLA

Coupling agent for filled Polyolefins
Improve adhesion between the filler and the polymer composites at room temperature and under high-stress conditions
• Glass Fibers and PE & PP
• Mineral Fibers (NCi, CaC2O4, Mica, wollastone, kaolin, BaSO4) and PE & PP
• Natural Fibers (Wood, hemp, flax, BKP, bamboo) and PE & PP
• HFR (NiOP, Mg(OH)2) and PE & PP & EVA

Compatibiliser for Polymer Alloys & Blends
Improve interfacial adhesion between two incompatible polymers and reduce the dispersed phase domain size, producing better impact resistance and elongation at break
• PET and PE & PP
• EVOH and PE & PP
• PLA and PE & PP
• PA and PE & PP
• PA and PBT
• PC and ABS
• PC and PET & PBT

Recycling Booster
Improve mechanical recycling performance of post-consumer waste in order to meet sustainability requirements
• PET and PE & PP
• EVOH and PE & PP
• PA and PE & PP
• PBT
• ABS
• PC and ABS

Lotryl® - Lotader® - Orevac®
Innovative Solutions for Plastic Compounds

Impact Modifier
• Polyesters: PBT and PET
• Polyamides: PA 6, PA 66, PA 11 and PA 12
• PPS
• PC
• ABS
• PLA

Coupling Agent
• Glass Fibers and PE & PP
• Mineral Fibers (NCi, CaC2O4, Mica, wollastone, kaolin, BaSO4) and PE & PP
• Natural Fibers (Wood, hemp, flax, BKP, bamboo) and PE & PP
• HFR (NiOP, Mg(OH)2) and PE & PP & EVA

Compatibiliser for Polymer Alloys & Blends
• PET and PE & PP
• EVOH and PE & PP
• PLA and PE & PP
• PA and PE & PP
• PA and PBT
• PC and ABS
• PC and PET & PBT

Recycling Booster
• PET and PE & PP
• EVOH and PE & PP
• PA and PE & PP
• PBT
• ABS
• PC and ABS

Lotader.com
lotryl.com
orevac.com
Comprehensive Product Portfolio

Extensive range of innovative solutions for the most demanding plastic compound formulations in automotive, E&E, packaging and monofilament markets.

Lotryl® ethylene-acrylate copolymers (EMA, EBA)
Lotader® ethylene-acrylate-maleic anhydride terpolymers (EMA-MAH, EBA-MAH, EEA-MAH)
Lotader® AX ethylene-acrylate-glycidyl methacrylate terpolymers (EMA-GMA, EBA-GMA, EEA-GMA)
Orevac® maleic anhydride grafted polyolefin (PE, PP, EVA)

High Product Consistency

30 years of experience supplying specialty functional polyolefins products from manufacturing facilities in Europe and in the USA. Manufactured to the same standards worldwide, product consistency and reliability requirements are successfully delivered.

Technical Support for Business Growth

A global technology network with technical applications expertise, providing customers with local support and new product innovations to meet future performance requirements. With an in-depth knowledge of polymer processing, our technical experts have a long track record of successfully developing products for the plastic industry.

Arkema Technical Solutions
**Case Studies**

**Case study #1**

**Toughening Crystallised PET**

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**Case study #2**

**Improved Filler Dispersion**

Polypropylene talc filled compounds are widely used in the automotive industry for UTH, interior and exterior injection moulded parts but sometimes do not provide adequate toughness. Using Orevac® CA100 as coupling agent significantly enhances filler dispersion and improves impact performance with balanced stiffness.

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**Applications**

**Impact Modifier**

Improve mechanical properties and especially impact strength for inherent brittleness occurring at sub-zero temperatures and crack propagation

- Polyesters: PBT and PET
- Polyamides: PA 6, PA 6.6, PA 11 and PA 12
- PPS
- PC
- ABS
- PLA

**Coupling agent for Filled Polyolefins**

Improve adhesion between the filler and the polymer composites at room temperature and under high-stress conditions

- Glass Fibers and PE & PP
- Mineral Fillers (Mica, MAO, Mica, wollastonite, kaolin, BaSO₄, SiO₂) and PE & PP
- Natural Fibers (Wood, Hemp, Flax, BKP, Bamboo) and PE & PP
- HIPS (MMA, HIPS, ABS) and PE & PP/EVA

**Compatibiliser for Polymer Alloys & Blends**

Improve interfacial adhesion between two incompatible polymers and reduce the dispersed phase domain size, producing better impact resistance and elongation at break

- PET and PE & PP
- EVOH and PE & PP
- PLA and PE & PP
- PA and PE & PP
- PA and PBT
- PC and ABS
- PC and PBT & PET

**Recycling Booster**

Improve mechanical recycling performance of post-consumer wastes in order to meet sustainability requirements

- PET and PE & PP
- EVOH and PE & PP
- PA and PE & PP
- PBT
- ABS
- PC and ABS

**Innovative Solutions for Plastic Compounds**

- **Impact Modifier**
- **Coupling Agent**
- **Recycling Booster**
- **Compatibiliser**
Case Studies

**Case study #1**

**Toughening Crystallised PET**

Crystallised PET (cPET) trays are widely used for packaging frozen meals. These trays require modified low temperature toughness as they are packaged at temperatures in the -20 to -40°C range. The combination of Lotryl® 24MA02T and Lotader® AX8900 terpolymer can provide the required low-temperature toughness.

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**Applications**

**Impact Modifier**

Improve mechanical properties and especially impact strength for inherent brittleness occurring at sub-zero temperatures and crack propagation

- Polymers: PBT and PET
- Polyamides: PA 6, PA 66, PA 11 and PA 12
- PPS
- PC
- ABS
- PLA

**Coupling agent for filled Polyolefins**

Improve adhesion between the filler and the polymer composites at room temperature and under high-stress conditions

- Glass Fibers and PE & PP
- Mineral Fibers (WC, SiC, GO, Mica, wollastonite, kaolin, BaSO₄) and PE & PP
- Natural Fibers (Wood, Hemp, Rice, Human, BPR, bamboo) and PE & PP
- HPPR (NaOH, Mg(OH)₂) and PE & PP & EVA

**Compatibiliser for Polymer Alloys & Blends**

Improve interfacial adhesion between two incompatible polymers and reduce the dispersed phase domain size, producing better impact resistance and elongation at break

- PET and PE & PP
- EVOH and PE & PP
- PLA and PE & PP
- PA and PE & PP
- PA and PBT
- PC and ABS
- PC and PBT & PET

**Recycling Booster**

Improve mechanical recycling performance of post-consumer wastes in order to meet sustainability requirements

- PET and PE & PP
- EVOH and PE & PP
- PA and PE & PP
- PBT
- ABS
- PC and ABS

**Innovative Solutions for Plastic Compounds**

- **Impact Modifier**
- **Coupling Agent**
- **Recycling Booster**
- **Compatibiliser**