



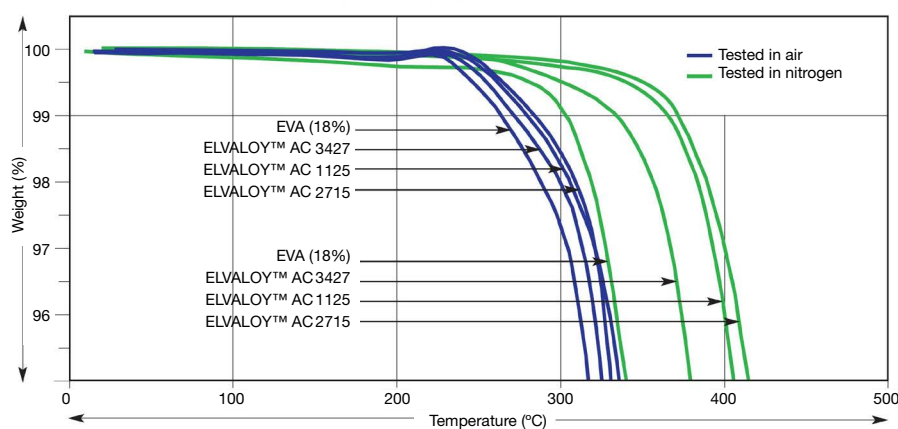
# ELVALOY™ AC as Masterbatch Carrier Resin

ELVALOY™ AC represents a family of ethylene acrylate copolymers. Their specific production process results in a heterogeneous molecular structure and polymer chains with blocks of polar and non-polar sections. ELVALOY™ AC is therefore an attractive choice as masterbatch carrier resin with excellent filler acceptance, higher thermal resistance than incumbent solutions, and high compatibility to a broad range of polymers, from polyolefins to various engineering plastics. Beyond providing very good masterbatch characteristics, ELVALOY™ AC resins can also serve as a modifier to various materials, improving their mechanical performance and impact resistance in particular.

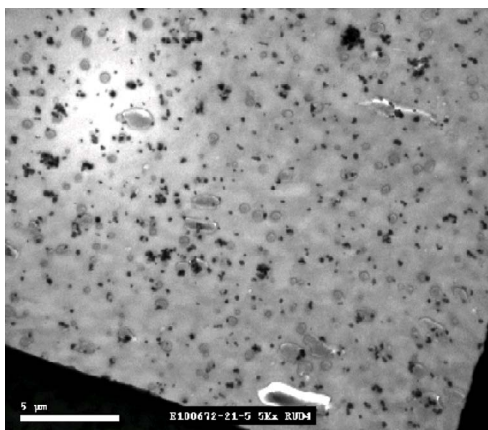
## Key features and strengths of ELVALOY™ AC

1. Broad compatibility with polar and non-polar resins relative to PE carriers or conventional acrylate copolymer resins.  More *universal* carrier resin than PE or EVA resins.
2. Superior thermal stability (especially EMA copolymers).  Higher process temperatures compared to EVA or competitive acrylates.

TGA curves for selected Ethylene Copolymers



3. Enhanced molecular architecture and polarity.  Greater acceptance and finer dispersion of a wide range of additives and functional fillers (pigments, flame retardants, slip agents, antiblock, antioxidants, UV stabilizers, antifog agents, antimicrobial, carbon black, TiO<sub>2</sub>, blowing agents).



TEM micrographs of Nylon 6 containing 5 wt% TiO<sub>2</sub> masterbatch: 60 wt% TiO<sub>2</sub> based and 40% ELVALOY™ AC 1820.

## Key features and strengths of ELVALOY™ AC

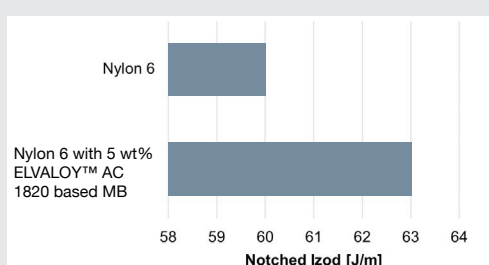
### 4. Polar nature and flexibility at low temperatures (especially for EBA).



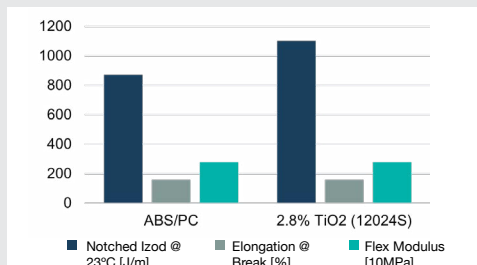
Impact performance enhancement of a variety of polymers and polymer blends with respect to PE-based masterbatches such as:

- Polyamide (PA)
- Polybutylene terephthalate (PBT)
- Polyethylene terephthalate (PET)
- Acrylonitrile butadiene styrene (ABS)
- Polypropylene (PP)
- Polyethylene (PE)
- PBT/ABS blends
- ABS/polycarbonate (PC) blends
- Polycarbonate (PC)

ELVALOY™ AC used as 60 wt% TiO<sub>2</sub> masterbatch carrier resin improves the toughness of Nylon 6 at 5wt% addition.



ELVALOY™ AC used as 70% TiO<sub>2</sub> masterbatch carrier resin improves blend toughness of ABS/PC (50/50 wt%) at 4% of addition.



### 5. Higher melt strength



Improved flow and processability.

## ELVALOY™ AC Improves ABS Melt Flow

Modifier 10%	Viscosity [Pa.S] at 1000 1/s	% Viscosity Reduction
ABS Control	200	-
ELVALOY™ AC 1125	182	10
ELVALOY™ AC 1330	172	15

## Broad range of ethylene/acrylate copolymers

Grade	Comonomer Type*	Acrylate (wt%)	MFR (dg/min, 2.16kg @ 190 °C)	Melting Point (°C)	Recommended Use
ELVALOY™ AC 1609	MA <sup>(1)</sup>	9	6	101	PA, PP, PE, EVA
ELVALOY™ AC 1218	MA <sup>(1)</sup>	18	2	94	PE, EVA
ELVALOY™ AC 1820	MA <sup>(1)</sup>	20	8	92	PA, PP, PE, EVA
ELVALOY™ AC 1224	MA <sup>(1)</sup>	24	2	91	PET, PC, PP, PE, EVA
ELVALOY™ AC 12024S	MA <sup>(1)(2)</sup>	24	32	88	PET, PC, PE, EVA
ELVALOY™ AC 1125	MA	25	0.5	90	ABS, PC blends, PE, EVA
ELVALOY™ AC 1330	MA <sup>(2)</sup>	30	3	85	ABS, PC blends
ELVALOY™ AC 2615	EA	15	6	97	PE, EVA
ELVALOY™ AC 2116	EA	16	1	96	PE, EVA
ELVALOY™ AC 3717	BA	17	7	96	PP, PE, EVA
ELVALOY™ AC 3427	BA	27	4	94	PBT, PP, PE, EVA
ELVALOY™ AC 34035	BA <sup>(2)</sup>	35	40	88	PBT

\*MA stands for methyl acrylate, EA for ethyl acrylate and BA for butyl acrylate.

(1) Polymers may be used in contact with food – for more information contact the Dow regulatory department

(2) Contains antioxidant for improved thermal stability during compounding

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