

REXtac APAO Terpolymers

Developmental Terpolymers Made in Multi-pound Quantities
in our Commercial Plant

REXtac APAO Terpolymers

- REXtac, LLC, has recently produced in our Odessa, TX commercial plant, a series of ethylene/propylene/butene-1 terpolymers that are expected to expand the range of physical and mechanical properties of Rextac APAOs, not available with our existing line of copolymers.
- Made using REXtac's proven Ziegler-Natta catalyst technology and optionally, with a proprietary additive technology to enhance select physical and mechanical properties.

REXtac APAO Terpolymers, cont.

- For example, it is now possible to have APAOs with a broad range of Ring & Ball Softening Point (RBSP), or Shear Adhesion Failure Temperature (SAFT) values while the NP penetration values remain almost constant, between 5 and 10 dmm.
- Or decreasing RBSP values while the melt viscosity (MV) and the tensile strength (TS) values increase.

REXtac APAO Terpolymers, cont.

- The following slide shows a table with all the terpolymers that have been made in multi-pound quantities large enough to sample to customers for Lab-scale product development.

Physical and Mechanical Properties of Rextac Developmental Terpolymers

Sample Id	MV, cps @ 375°F	NP, dmm	RBSP, °F	O.T., sec	Tensile Strength		SAFT, °F
					Load @ Max Load, lbf	Stress @ Max Load, psi	
2975-84-1	1100	27	185	5	Too soft to run		147
2975-84-2	870	59	150	>180	Too Soft to run		109
2975-84-3	950	42	180	>180	1.3	50	127
2975-84-4	1070	31	205	40	2.4	80	154
2975-84-5	1375	15	230	10	6.5	225	186
2975-84-6	1320	11	235	<10	9	300	210
2975-84-7	1325	6	250	<10	11	400	222
2975-84-8	1050	4	260	<5	13	465	225
2975-84-9	1350	5	260	<5	16	550	217
2975-84-10	2775	6	250	<5	15	520	208
2975-84-11	5900	7	240	10	23	800	197
2975-84-12	6925	7	230	10	21	750	196
2975-84-13	7600	8	225	10	23	800	186

REXtac APAO Terpolymers - Performance

- Characteristics

Predominantly amorphous,

Broad range of molecular weights (800 cps < MV < 8,000 cps @ 375°F),

Being completely saturated hydrocarbons, thermally and UV stable.

- Expected Features

Excellent adhesion characteristics to a variety of substrates

Broad compatibility with other HMA ingredients, e.g.,

tackifiers, waxes, plasticizers, other chemically similar low MW polymers,

Low Density – Better Mileage.

REXtac APAO Terpolymers - Packaging

- Available in 5-pound Menasha boxes and in 5-gal pails,
- If any of these developmental terpolymers were to become available in commercial quantities, they may be packaged in:
 - Fiber drums (ca. 350 lbs.),
 - Briquettes (or potatoes),
 - Liquid truck or railcar quantities.