

ECO-FLEX™ RTPV

SUBJECT: WHEELS AND ROLLERS



DISCLAIMER OF WARRANTY AND LIABILITY:

The information and recommendations set forth herein are believed to be correct. Persons receiving same assume responsibility for determining the suitability of any recommendations mentioned herein before using the same. SYNESIS makes no representation or warranty, expressed or implied, as to the accuracy or completeness thereof, or of fitness for a particular purpose.

SYNESIS

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ECO-FLEX™ RTPV

ECO-FLEX RTPV, a recycled rubber based TPV, combines the performance characteristics of rubber, such as flexibility and anti-skid, with the processing ease of conventional thermoplastic materials.

ECO-FLEX RTPV grades have replaced thermoset rubber in automotive applications such radiator air deflectors, gas tank strap pads and splash shields at several OEMs including Ford, GM and Chrysler.

ECO-FLEX RTPV grades deliver cost savings of 30-50% and 20-70% post consumer recycled rubber content as well as other value-added benefits that TPEs offer over thermoset rubber in processability, design flexibility, recyclability and performance.

OPPORTUNITIES FOR WHEEL MANUFACTURERS

FEATURES

- Lower Cost
- New Technology
- Recycle content
- Design flexibility
 - Insert or Two-shot molding
- Tighter tolerances
- Rubber look and feel
- Shore Hardness from 45A to 40D
- Good fluid resistance
- Easily recyclable
- Automotive Approvals/Applications

BENEFITS

- Cost savings
- New Opportunities
- Helps OEM's meet recycling goals
- Cost savings
- Greater control of part quality
- Soft, low noise, non-skid
- Broad range of Flexibility
- Long term stability
- Reduces landfill waste
- Track Record

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Cost/Performance Comparison 12" Trash Can Wheel

Item	Virgin SBR	ECO-FLEX
Hardness, Shore A	80	80
Wear Test, 50k Cycles	Pass	Pass
Cold Drop Test, -20 Degrees C	Pass	Pass
Specific Gravity	1.4	1.00
Tread Weight, g	985	240
Cycle Time, Sec	360	40
Scrap Rate, %	15	< 1
Finish Wheel Cost, \$ per Wheel	2.87	1.52

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ECO-FLEX™ RTPV

TABER ABRASION TEST REPORT* ECO-FLEX™ RTPV SA-85A vs. PVC 83794 (BF Goodrich)

TABLE 1

WEAR	ECO-FLEX™ SA-85A	PVC 83794
Total Weight Loss (Mg)	125.6	185.4
Taber Wear Index**	239	261

*Type: Teledyne Taber Model 5130
Abradent: H22 Load: 1000 grams
Wheels refaced: At start and every 50 cycles
End point: 500 cycles

**Volume loss method (attached)
ECO-FLEX™ RTPV S.G. = 1.00, PVC 83794 S.G. = 1.42

Example:

Taber Wear Index $\frac{185.4 \text{ Mg} \times 1000 \text{ cycles}}{1.42 \text{ S.G.} \times 500} = 261$

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TABER ABRASION TEST REPORT* ECO-FLEX™ RTPV SA-85A vs. SBR RUBBER

TABLE 1

WEAR	ECO-FLEX™ SA-85A	SBR 65 Shore A
Total Weight Loss (Mg)	125.6	392.7
Taber Wear Index**	239	561

*Type: Teledyne Taber Model 5130
Abradent: H22 Load: 1000 grams
Wheels refaced: At start and every 50 cycles
End point: 500 cycles

**Volume loss method (attached)
ECO-FLEX™ RTPV S.G. = 1.00, SBR S.G. = 1.40

Example:

$$\text{Taber Wear Index} = \frac{392.7 \text{ Mg} \times 1000 \text{ cycles}}{1.40 \text{ S.G.} \times 500} = 561$$

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