

ECO-FLEX RTPV

Thermoplastic Rubber

Combining ease of processing and cost-efficiency

Wheel Market Brochure

USCAN



ECO-FLEX RTPV

WHEELS & ROLLERS

ECO-FLEX RTPV 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 virgin thermoset rubber and TPVs like Santoprene and Monprene in wheel and roller applications by providing equal or better performance at a significantly lower cost.

ECO-FLEX RTPV delivers cost savings of 30-50% as well as other value-added benefits that TPVs offer over thermoset rubber in processability, design flexibility, recyclability and performance.

Applications:

- Airless tires
- Caster wheels
- Push mower wheels
- Wheelbarrow wheels
- Wheelchair wheels



Airless tire



OPPORTUNITIES FOR WHEEL AND ROLLER MANUFACTURERS

Features

- Faster cycle times than SBR and PVC wheels
- Lower specific gravity than SBR and PVC
- Insert or Two-shot molding over PP
- Rubber look and feel

- Shore hardness from 45A to 60D
- Good abrasion and fluid resistance
- Recycle content and more easily recyclable after the useful life of the wheel (compatible with PP)

Benefits

- ■ Cost savings
- ■ Cost savings
- ■ Cost savings
- ■ More appealing to consumers than PVC wheels; soft, low noise, non-skid
- ■ Broad range of flexibility
- ■ Long term stability
- ■ "Green" content appeal to consumers; reduces landfill waste and helps the environment

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

Taber abrasion test report* ECO-FLEX RTPV vs. SBR RUBBER

WEAR	ECO-FLEX SA-85A	SBR 65 Shore A
Total Weight Loss (Mg)	119.5	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:
Taber Wear Index $\frac{392.7 \text{ Mg} \times 1000 \text{ cycles}}{1.40 \text{ S.G.} \times 500} = 561$



Taber abrasion test report* ECO-FLEX RTPV SA-85A vs. PVC 83794 (BF Goodrich)

WEAR	ECO-FLEX SA-85A	PVC 83794
Total Weight Loss (Mg)	119.5	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 $\frac{185.4 \text{ Mg} \times 1000 \text{ cycles}}{1.42 \text{ S.G.} \times 500} = 261$

Taber abrasion test report* ECO-FLEX RTPV vs. SANTOPRENE

WEAR	ECO-FLEX SA-85A	SANTOPRENE 101-87
Total Weight Loss (Mg)	119.5	136.2
Taber Wear Index**	239	278

*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, SANTOPRENE S.G. = 0.98

Example:
Taber Wear Index $\frac{136.2 \text{ Mg} \times 1000 \text{ cycles}}{0.98 \text{ S.G.} \times 500} = 278$



ABOUT US

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