

All values included in this document are for reference purposes only and should not be construed as material specifications. The test methods on this Product Data Sheet indicate the internationally recognized standards upon which the manufacturer's work instructions are based.

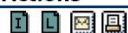
Thursday, September 14, 2006

## Santoprene™ TPV 101-64

### Advanced Elastomer Systems - Thermoplastic Elastomer

Unit System: English

#### Actions



[Legend \(Open\)](#)

### General Information

#### Product Description

A soft, black, versatile thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. This material combines good physical properties and chemical resistance for use in a wide range of applications. This grade of Santoprene TPV is shear-dependent and can be processed on conventional thermoplastics equipment for injection molding, extrusion or blow molding. It is polyolefin based and completely recyclable.

#### General

|                           |   |
|---------------------------|---|
| Material Status           | ● Commercial: Active  |
| Availability              | <ul style="list-style-type: none"> <li>● Africa</li> <li>● Asia</li> <li>● Australia</li> <li>● Europe</li> <li>● Latin America</li> <li>● Middle East</li> <li>● North America</li> <li>● Pacific Rim</li> <li>● South America</li> </ul>  |
| Test Standards Available  | <ul style="list-style-type: none"> <li>● ASTM</li> <li>● ISO</li> </ul>   |
| Uses                      | <ul style="list-style-type: none"> <li>● Appliance Components</li> <li>● Automotive Applications</li> <li>● Blow Molding Applications</li> <li>● Diaphragms</li> <li>● Gaskets</li> <li>● General Purpose</li> <li>● Industrial Applications</li> <li>● Seals</li> <li>● Tubing</li> </ul>  |
| Agency Ratings            | <ul style="list-style-type: none"> <li>● EU 2003/11/EC</li> <li>● RoHS Compliant</li> <li>● UL JMLU2</li> <li>● UL QMFZ2</li> <li>● UL QMFZ8</li> </ul>   |
| Automotive Specifications | <ul style="list-style-type: none"> <li>● DAIMLERCHRYSLER MSAR 20 Type B Color: Black</li> <li>● DELPHI 8565 Color: Black</li> <li>● DELPHI DX300003 Color: Black</li> <li>● FORD WSD-M2D379-A1 Color: Black</li> <li>● GM GMP.E/P.002 Color: Black</li> <li>● TRW TMS-P-10,365 Color: Black</li> <li>● VALEO VMS-8618 Color: Black</li> </ul> |
| Color                     | ● Black   |
| Forms                     | ● Pellets   |
| Processing Method         | <ul style="list-style-type: none"> <li>● Blow Molding</li> <li>● Coextrusion</li> <li>● Extrusion</li> <li>● Extrusion, Profile</li> <li>● Extrusion, Sheet</li> <li>● Injection Molding</li> <li>● Injection Molding, Multi</li> </ul>   |

### Properties <sup>1</sup>

| Hardness  | Nominal Value      | Unit          | Test Method |
|---|--------------------|---------------|-------------|
| Durometer Hardness (A Scale, 0.120 in)                | 64                 |               | ASTM D2240  |
| Physical  | Nominal Value      | Unit          | Test Method |
| Density -Specific Gravity                             | 0.97               | sp gr 23/23°C | ASTM D792   |
| Elastomers  | Nominal Value      | Unit          | Test Method |
| Tensile Stress @ 100%                                 | Across Flow: 380   | psi           | ASTM D412   |
| Tensile Str @ Break Elast (73 °F)                     | Across Flow: 1010  | psi           | ASTM D412   |
| Elongation @ Break Elast                              | Across Flow: 450.0 | %             | ASTM D412   |
| Tear Strength (73 °F, Die C)                          | Across Flow: 131   | lbf/in        | ASTM D624   |
| Compression Set <sup>2</sup>                          |                    |               | ASTM D395   |
| (158 °F, 22.0 hr)                                     | 18                 | %             |             |
| (257 °F, 70.0 hr)                                     | 44                 | %             |             |
| Thermal   | Nominal Value      | Unit          | Test Method |
| Max. Continuous Use Temp                              | 275                | °F            | ASTM D794   |
| Brittle Temperature                                   | -76                | °F            | ASTM D746   |
| Aging   | Nominal Value      | Unit          | Test Method |
| Change in Tensile Strength in Air (302 °F, 168 hr)    | -12                | %             | ASTM D573   |
| Change in Ultimate Elongation in Air (302 °F, 168 hr) | 6                  | %             | ASTM D573   |
| Change in Durometer Hardness in Air (302 °F, 168 hr)  | 2                  |               | ASTM D573   |

|   |       |           |
|---|-------|-----------|
| Change in Tensile Strength (257 °F, 70 hr, in IRM 903 Oil)    | -30 % | ASTM D471 |
| Change in Ultimate Elongation (257 °F, 70 hr, in IRM 903 Oil) | -49 % | ASTM D471 |
| Change in Volume (257 °F, 70 hr, in IRM 903 Oil)              | 87 %  | ASTM D471 |

#### Key Features

- UL listed: file #JMLU2.MH17699, Gaskets and Seals - Component; file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component. - Continuous temperature rating (SAE J2236 - Continuous Upper Temperature Resistance [CUTR]): 1008 hrs. @ 135°C (275°F). - Recommended for applications requiring excellent flex fatigue resistance. - Excellent ozone resistance. - Compliant to EU Directive 2003/11/EC regarding marketing and use of certain dangerous substances and preparations, specifically pentabromodiphenyl ether or octabromodiphenyl ether. - EU Directive 2002/95/EC (RoHS) compliant.

#### Processing Statement

Desiccant drying for 3 hours at 80°C (180°F) is recommended. Santoprene TPV has a wide temperature processing window from 175 to 230°C (350 to 450°F) and is incompatible with acetal and PVC. For more information, please consult our Material Safety Data Sheet, Injection Molding Guide, Extrusion Guide and Blow Molding Guide.

#### Revision Date

03/23/2006

#### Additional Properties

Values are for injection molded plaques, fan-gated, 102.0 mm x 152.0 mm x 2.0 mm (4.000" x 6.000" x 0.080"). Tensile strength, elongation and tensile stress are measured across the flow direction - ISO type 1, ASTM die C. Compression set at 25% deflection.

### Processing Information

| Injection               | Nominal Value        | Unit                 |
|-------------------------|----------------------|----------------------|
| Drying Temperature      | 180                  | °F                   |
| Drying Time             | 3                    | hr                   |
| Suggested Max Moisture  | 0.080                | %                    |
| Suggested Max Re grind  | 20                   | %                    |
| Rear Temperature        | 350                  | °F                   |
| Middle Temperature      | 360                  | °F                   |
| Front Temperature       | 360                  | °F                   |
| Nozzle Temperature      | 370 to 430           | °F                   |
| Processing (Melt) Temp  | 380 to 450           | °F                   |
| Mold Temperature        | 50 to 125            | °F                   |
| Injection Rate          | Fast                 |                      |
| Back Pressure           | 50 to 100            | psi                  |
| Screw Speed             | 100 to 200           | rpm                  |
| Clamp Tonnage           | 3 to 5               | tons/in <sup>2</sup> |
| Cushion                 | 0.125 to 0.250       | in                   |
| Screw L/D Ratio         | 16.0:1.0 to 20.0:1.0 |                      |
| Screw Compression Ratio | 2.0:1.0 to 2.5:1.0   |                      |
| Vent Depth              | 0.001                | in                   |

#### Injection Notes

Santoprene TPV is incompatible with acetal and PVC. For more information regarding processing and mold design, please consult our Injection Molding Guide.

| Extrusion          | Nominal Value | Unit |
|--------------------|---------------|------|
| Drying Temperature | 180           | °F   |
| Drying Time        | 3             | hr   |
| Melt Temperature   | 385           | °F   |
| Die Temperature    | 390           | °F   |
| Back Pressure      | 725 to 2900   | psi  |

#### Extrusion Notes

Santoprene TPV is incompatible with acetal and PVC. For more information regarding processing and mold design, please consult our Extrusion Guide.

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> Type 1, Method B

For additional technical, sales and order assistance:

ADVANCED ELASTOMER SYSTEMS  
388 S. Main Street  
Akron, OH 44311-1065

An **ExxonMobil Chemical** Affiliate

U.S. AnswerPerson(SM): 800.305.8070 option 2  
North America AnswerPerson(SM): 330.849.5272

|                                 |                |
|---------------------------------|----------------|
| Europe AnswerPerson(SM):        | 32.2.706.3511  |
| Japan AnswerPerson(SM):         | 81.44.280.5278 |
| Asia-Pacific AnswerPerson(SM):  | 65.9677.6704   |
| PRC/HK/Taiwan AnswerPerson(SM): | 800.6773.1616  |

[www.santoprene.com/answer](http://www.santoprene.com/answer)

© 2006 Exxon Mobil Corporation. To the extent the user is entitled to disclose and distribute this document, the user may forward, distribute, and/or photocopy this copyrighted document only if unaltered and complete, including all of its headers, footers, disclaimers, and other information. You may not copy this document to a Web site. ExxonMobil does not guarantee the typical (or other) values. Analysis may be performed on representative samples and not the actual product shipped. The information in this document relates only to the named product or materials when not in combination with any other product or materials. We based the information on data believed to be reliable on the date compiled, but we do not represent, warrant, or otherwise guarantee, expressly or impliedly, the merchantability, fitness for a particular purpose, suitability, accuracy, reliability, or completeness of this information or the products, materials, or processes described. The user is solely responsible for all determinations regarding any use of material or product and any process in its territories of interest. We expressly disclaim liability for any loss, damage, or injury directly or indirectly suffered or incurred as a result of or related to anyone using or relying on any of the information in this document. There is no endorsement of any product or process, and we expressly disclaim any contrary implication. The terms, we, our, "ExxonMobil Chemical", or "ExxonMobil" are used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates they directly or indirectly steward. ExxonMobil, the ExxonMobil Emblem, the Interlocking X Device, Santoprene, Dytron, Geolast, Vistaflex, and Vyram are trademarks of Exxon Mobil Corporation.

Powered by IDES



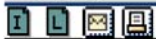
All values included in this document are for reference purposes only and should not be construed as material specifications. The test methods on this Product Data Sheet indicate the internationally recognized standards upon which the manufacturer's work instructions are based.

Thursday, September 14, 2006

**Santoprene™ TPV 251-70W232**  
**Advanced Elastomer Systems - Thermoplastic Elastomer**

Unit System:

Actions Legend (Open)



**General Information**

**Product Description**

A soft, colorable, flame retardant thermoplastic vulcanizate (TPV) in the thermoplastic elastomer (TPE) family. This material has good fluid resistance and contains non-ether brominated flame retardants (non-furan emitting). It does not contain added antioxidants or metal deactivators. This grade of Santoprene TPV is shear-dependent and can be processed on conventional thermoplastics equipment for injection molding, extrusion or blow molding. It is polyolefin based and completely recyclable.

**General**

|                          |  |   |
|--------------------------|--|---|
| Material Status          | • Commercial: Active   |   |
| Availability             | <ul style="list-style-type: none"> <li>• Africa</li> <li>• Asia</li> <li>• Australia</li> <li>• Europe</li> <li>• Latin America</li> </ul>     | <ul style="list-style-type: none"> <li>• Middle East</li> <li>• North America</li> <li>• Pacific Rim</li> <li>• South America</li> </ul>                            |
| Test Standards Available | <ul style="list-style-type: none"> <li>• ASTM</li> <li>• ISO</li> </ul>  |   |
| Uses                     | <ul style="list-style-type: none"> <li>• Automotive Applications</li> <li>• Cable Jacketing</li> </ul>   | <ul style="list-style-type: none"> <li>• Electrical/Electronic Applications</li> <li>• Wire &amp; Cable Applications</li> </ul>                                     |
| Agency Ratings           | <ul style="list-style-type: none"> <li>• EU 2003/11/EC</li> <li>• RoHS Compliant</li> </ul>  | <ul style="list-style-type: none"> <li>• UL QMFZ2</li> <li>• UL QMFZ8</li> </ul>  |
| Color                    | • Natural Color  |   |
| Forms                    | • Pellets  |   |
| Processing Method        | <ul style="list-style-type: none"> <li>• Blow Molding</li> <li>• Coextrusion</li> <li>• Extrusion</li> <li>• Extrusion Blow Molding</li> </ul> | <ul style="list-style-type: none"> <li>• Extrusion, Profile</li> <li>• Extrusion, Sheet</li> <li>• Injection Molding</li> <li>• Injection Molding, Multi</li> </ul> |

**Properties <sup>1</sup>**



| <b>Hardness</b>                                       | <b>Nominal Value Unit</b> | <b>Test Method</b> |
|---|---------------------------|--------------------|
| Durometer Hardness (A Scale, 0.120 in)                | 70                        | ASTM D2240         |
| <b>Physical</b>                                       | <b>Nominal Value Unit</b> | <b>Test Method</b> |
| Density -Specific Gravity                             | 1.24 sp gr 23/23°C        | ASTM D792          |
| <b>Elastomers</b>                                     | <b>Nominal Value Unit</b> | <b>Test Method</b> |
| Tensile Stress @ 100%                                 | Across Flow: 390 psi      | ASTM D412          |
| Tensile Str @ Break Elast (73 °F)                     | Across Flow: 910 psi      | ASTM D412          |
| Elongation @ Break Elast                              | Across Flow: 550.0 %      | ASTM D412          |
| <b>Aging</b>  | <b>Nominal Value Unit</b> | <b>Test Method</b> |
| Change in Tensile Strength in Air (302 °F, 168 hr)    | -21 %                     | ASTM D573          |
| Change in Ultimate Elongation in Air (302 °F, 168 hr) | -25 %                     | ASTM D573          |

#### **Key Features**

- UL listed: file #QMFZ2.E80017, Plastics - Component; file #QMFZ8.E80017, Plastics Certified For Canada - Component. - Recommended for applications requiring excellent flex fatigue resistance. - Recommended for applications requiring excellent ozone resistance. - Limiting oxygen index, ASTM D 2863A: 26%. - Trace amounts (below 50 ppm) of polybrominated diphenylethers (PBDEs) may exist in this product. - Compliant to EU Directive 2003/11/EC regarding marketing and use of certain dangerous substances and preparations, specifically pentabromodiphenyl ether or octabromodiphenyl ether. - EU Directive 2002/95/EC (RoHS) compliant.

#### **Processing Statement**

Desiccant drying for 3 hours at 80°C (180°F) is recommended. Santoprene TPV has a wide temperature processing window from 175 to 230°C (350 to 450°F) and is incompatible with acetal and PVC. For more information, please consult our Material Safety Data Sheet, Injection Molding Guide, Extrusion Guide and Blow Molding Guide.

#### **Revision Date**

03/23/2006

#### **Additional Properties**

Values are for injection molded plaques, fan-gated, 102.0 mm x 152.0 mm x 2.0 mm (4.000" x 6.000" x 0.080"). Tensile strength, elongation and tensile stress are measured across the flow direction - ISO type 1, ASTM die C.

### **Processing Information**

| <b>Injection</b>       | <b>Nominal Value Unit</b> |
|------------------------|---------------------------|
| Drying Temperature     | 180 °F                    |
| Drying Time            | 3 hr                      |
| Suggested Max Moisture | 0.080 %                   |
| Suggested Max Regrind  | 20 %                      |
| Mold Temperature       | 50 to 125 °F              |

|                         |                             |
|-------------------------|-----------------------------|
| Injection Rate          | Fast                        |
| Back Pressure           | 50 to 100 psi               |
| Screw Speed             | 100 to 200 rpm              |
| Clamp Tonnage           | 3 to 5 tons/in <sup>2</sup> |
| Cushion                 | 0.125 to 0.250 in           |
| Screw L/D Ratio         | 16.0:1.0 to 20.0:1.0        |
| Screw Compression Ratio | 2.0:1.0 to 2.5:1.0          |
| Vent Depth              | 0.001 in                    |

#### Injection Notes

Santoprene TPV is incompatible with acetal and PVC. For more information regarding processing and mold design, please consult our Injection Molding Guide.

| Extrusion          | Nominal Value Unit |
|--------------------|--------------------|
| Drying Temperature | 180 °F             |
| Drying Time        | 3 hr               |

#### Extrusion Notes

Santoprene TPV is incompatible with acetal and PVC. For more information regarding processing and mold design, please consult our Extrusion Guide.

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

For additional technical, sales and order assistance:

ADVANCED ELASTOMER SYSTEMS  
388 S. Main Street  
Akron, OH 44311-1065

An **ExxonMobil Chemical** Affiliate

U.S. AnswerPerson(SM): 800.305.8070 option 2  
North America AnswerPerson(SM): 330.849.5272  
Europe AnswerPerson(SM): 32.2.706.3511  
Japan AnswerPerson(SM): 81.44.280.5278  
Asia-Pacific AnswerPerson(SM): 65.9677.6704  
PRC/HK/Taiwan AnswerPerson(SM): 800.6773.1616

[www.santoprene.com/answer](http://www.santoprene.com/answer)

© 2006 Exxon Mobil Corporation. To the extent the user is entitled to disclose and distribute this document, the user may forward, distribute, and/or photocopy this copyrighted document only if unaltered and complete, including all of its headers, footers, disclaimers, and other information. You may not copy this document to a Web site. ExxonMobil does not guarantee the typical (or other) values. Analysis may be performed on representative samples and not the actual product shipped. The information in this document relates only to the named product or materials when not in combination with any other product or materials. We based the information on data believed to be reliable on the date compiled, but we do not represent, warrant, or otherwise guarantee, expressly or impliedly, the merchantability, fitness for a particular purpose, suitability, accuracy, reliability, or completeness of this information or the products, materials, or processes described. The user is solely responsible for all determinations regarding any use of material or product and any process in its territories of interest. We expressly disclaim liability for any loss, damage, or injury directly or indirectly suffered or incurred as a result of or related to anyone using or relying on any of the information in this document. There is no endorsement of any product or process, and we expressly disclaim any contrary implication. The terms, we, our, "ExxonMobil Chemical", or "ExxonMobil" are used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates they directly or indirectly steward. ExxonMobil, the ExxonMobil Emblem, the Interlocking X Device, Santoprene, Dytron, Geolast, Vistaflex, and Vyram are trademarks of Exxon Mobil Corporation.