



**MATERIAL SAFETY DATA SHEET**  
**SANTOPRENE™ THERMOPLASTIC RUBBER MEDICAL GRADES**

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

**ADVANCED ELASTOMER SYSTEMS, L.P.**

388 South Main Street  
Akron, Ohio 44311

**EMERGENCY TELEPHONE NUMBERS**

(CHEMTREC)  
In the U. S. call 1-800-424-9300  
Outside the US call collect 1-703-527-3887

Product Identification:

181-XXMED  
183-XXMED  
281-XXMED  
283-XXMED

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Santoprene™ thermoplastic rubber grades are proprietary products. Their composition is trade secret information of Advanced Elastomer Systems, L.P. These products are not identified by CAS number. All components of these products appear on the Inventory of Chemical Substances published by the U.S. Environmental Protection Agency or qualify for the TSCA polymer exemption under U.S. Federal Register Vol. 60, No. 60, 3/29/95. New Jersey Trade Secret Registry No.: 01122800003-5001P

<b>Components:</b>	<b>CAS. NO.</b>	<b>Airborne Exposure Limits</b>		<b>Weight Percent</b>
		<b>OSHA PEL</b>	<b>ACGIH PEL</b>	
Thermoplastic rubber	Mixture	None established	None established	100%
<b>Components within Polymer Matrix:</b>				
Carbon black	1333-86-4	3.5 mg/m <sup>3</sup> TWA	3.5 mg/m <sup>3</sup>	0 to 3%

Black grades contain carbon black, CAS No. 1333-86-4, within the polymer matrix. The International Agency for Research on Cancer (IARC) has determined that carbon black is possibly carcinogenic to humans (IARC Group 2B). IARC determined that there is inadequate evidence in humans but sufficient evidence in experimental animals for carcinogenicity of carbon black.

**3. HAZARDS IDENTIFICATION**

**Emergency Overview:**

HANDLE PELLETS IN ACCORDANCE WITH GOOD INDUSTRIAL HYGIENE AND SAFETY PRACTICES. THESE PRACTICES INCLUDE AVOIDING UNNECESSARY EXPOSURE AND REMOVAL OF THE MATERIAL FROM EYES, SKIN AND CLOTHING.

**CAUTION!** PROCESSING RELEASES VAPORS OR FUMES WHICH MAY CAUSE RESPIRATORY TRACT IRRITATION.

Avoid breathing processing fumes or vapors.  
Process using adequate ventilation.

**Potential Health Effects:**

INHALATION: Inhalation of fumes or vapors during processing may cause respiratory tract irritation.

EYE CONTACT: Pellets do not cause significant eye irritation.

SKIN CONTACT: Pellets do not cause significant skin irritation.

**4. FIRST AID MEASURES**

INHALATION: If fumes are inhaled, remove to fresh air. If breathing is difficult, get medical attention.

**5. FIRE FIGHTING MEASURES**

Flash (piloted) Ignition Temperature: >650°F (343°C)      Method: ASTM D 1929-77  
Self-Ignition (non-piloted) Temperature: >700°F (371°C)      Method: ASTM D 1929-77

Extinguishing Media: Water spray or any Class A extinguishing agent.

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Special Firefighting Procedures: Firefighters and others exposed to products of combustion should wear self-contained breathing apparatus and full protective clothing. Carbon monoxide is liberated as a toxic decomposition product when Santoprene™ thermoplastic rubber is ignited.

Unusual Fire and Explosion Hazards: None known.

Static Generation: Pneumatic transfer of plastic pellets can generate large static discharges which could cause an incendiary electrostatic spark. Excessive transfer also causes dust which can be ignited under some conditions. Take proper precautions when transferring Santoprene™ thermoplastic rubber, including grounding all equipment, providing an inert atmosphere and properly designing material handling equipment, to prevent electrostatic charge formation.

**6. ACCIDENTAL RELEASE MEASURES**

Spilled product may cause a slipping hazard.

IN CASE OF SPILL OR LEAK, vacuum or sweep up and place in clean, covered containers for recycle or disposal.

**7. HANDLING AND STORAGE**

Avoid leaving container open for prolonged periods to prevent exposure to humidity. Santoprene™ thermoplastic rubber will pick up small amounts of moisture. Store in a cool, dry place. Usual precautions in pellet handling should be observed to prevent contamination by dirt or other materials.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

Eye Protection: Santoprene™ thermoplastic rubber does not cause significant eye irritation or eye toxicity requiring special protection. Use good industrial practice to avoid eye contact.

Skin Protection: Although Santoprene™ thermoplastic rubber does not present significant skin concern, minimize skin contamination by following good industrial hygiene practice. Wearing protective gloves is recommended. Wash hands and contaminated skin thoroughly after handling.

Respiratory Protection: Avoid breathing process vapors or dust. Use NIOSH approved respiratory protection equipment (full facepiece recommended) when airborne exposure is excessive. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. Respiratory protection programs must comply with 29 CFR 1910.134.

Ventilation: Provide natural or mechanical ventilation to minimize exposure. If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: Black or natural (colorable) pellets.

Odor: Slightly rubberlike.

Specific Gravity: 0.95 to 0.98

Hardness: 45 Shore A to 50 Shore D

NOTE: These physical data are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specifications for the product.

**10. STABILITY AND REACTIVITY**

Stability: Thermally stable to 500°F (260C).

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Materials to Avoid: Santoprene™ thermoplastic rubber may react with strong oxidizing chemicals. Santoprene™ thermoplastic rubber also reacts with acetal resins at temperatures of 425°F (218°C) and above, producing decomposition of the acetal resin, and formaldehyde as a decomposition product. Decomposition of halogenated polymers and phenolic resins may also be accelerated when they are in contact with Santoprene™ thermoplastic rubber at processing temperatures. Thoroughly purge processing equipment with polyolefin polymers, including polypropylene, when using the same equipment to process Santoprene™ thermoplastic rubber and acetal resins, halogenated polymers and phenolic resins. Do not mix Santoprene™, acetal resins, halogenated polymers or phenolic resins at elevated temperatures.

Hazardous Decomposition Products: Smoke, Carbon monoxide, and possibly hydrocarbons may evolve when processing temperatures exceed 500F or when Santoprene™ thermoplastic rubber is ignited.

Hazardous Polymerization: Does not occur.

#### 11. TOXICOLOGICAL INFORMATION

The following information summarizes human experience and results of scientific investigations reviewed by health professionals for hazard evaluation of Santoprene™ thermoplastic rubber and development of Precautionary Measures and Occupational Control Procedures recommended in this document.

##### Effects of Exposure

Skin contact is expected to be the primary route of occupational exposure to Santoprene™ thermoplastic rubber. Occupational exposure to this material in normal handling and storage has not been reported to cause significant adverse human health effects. Due to its chemical and physical properties, Santoprene™ thermoplastic rubber does not appear to possess any toxicological properties which would require special handling other than the good industrial hygiene and safety practices employed with any industrial material of this type.

However, under normal processing conditions, this product will release fumes and vapors. Components of these releases may vary with processing times and temperatures and therefore specific composition cannot be predicted based on current information. These process releases may produce respiratory tract irritation where such releases are allowed to build up due to inadequate ventilation in the general work area. These fumes and vapors, with repeated and prolonged exposure at high concentrations, could cause nausea, drowsiness and headache, especially if such exposures exceed current exposure limits (where established). Good industrial hygiene and safety practices should be used to avoid unnecessary exposures.

##### Toxicological Data

Results of single exposure (acute) animal studies conducted on a representative grade of general purpose thermoplastic rubber indicate that these materials are practically nontoxic orally (rats) and after skin application (rabbits). They are practically nonirritating to rabbit eyes and skin.

#### 12. ECOLOGICAL INFORMATION

No data available.

#### 13. DISPOSAL CONSIDERATIONS

When discarded, Santoprene™ thermoplastic rubber is not a "hazardous waste" as that term is defined in 40 CFR 261, "Identification and Listing of Hazardous Waste." Recycle or burn in an approved incinerator or dispose of in an approved chemical landfill in accordance with all applicable local, state and federal laws and regulations. Consult your attorney or appropriate regulatory officials for information on such disposal. Re-process only uncontaminated material.

Spill or Leakage Procedures: Vacuum or sweep up and place in container for recycle or disposal as recommended above.

Containers: Recycle or burn in an approved incinerator or dispose of in an approved chemical landfill in accordance with all applicable local, state and federal laws and regulations.



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**14. TRANSPORT INFORMATION**

DOT Proper Shipping Name: Not Applicable  
DOT Hazard Class/I.D. No.: Not Applicable  
DOT Label: Not Applicable

U.S. Surface Freight Classification -  
Rail: Rubber, Synthetic Crude                      Truck: Rubber, Crude

**15. REGULATORY INFORMATION**

Reportable Quantity (RQ) Under  
DOT (49 CFR) and CERCLA Regulations: Not Applicable

SARA Hazard Notification  
Hazard Categories under criteria of  
SARA Title III rules (40 CFR Part 370): Not applicable.

Section 313 Hazardous Chemical(s): Not applicable.

**SECTION 313 INFORMATION MUST BE INCLUDED IN ALL MSDSs  
THAT ARE COPIED AND DISTRIBUTED FOR THIS MATERIAL.**

Hazardous Chemical(s) under OSHA Hazard Communication Standard:

Black grades contain Carbon Black	0 to 3% Weight Range
HMIS Rating:    Reactivity: 1	Health: 1                      Flammability: 1

**16. OTHER INFORMATION**

MSDS No. 0410-0415  
Date MSDS Initially Prepared: 05/26/95  
Revision(s): 09/25/96 - Updated carbon black information  
                  10/11/96 - Updated polymer exemption information  
                  11/05/99 - Reviewed MSDS and updated Carbon Black Weight Range Percentages  
                  12/20/99 - Y2K Update  
                  04/30/01 - Reviewed for accuracy  
                  04/15/04 – Updated medical grade formulation  
                  05/11/04 – Added 183xx and 283xx grades  
                  08/30/05 – Updated trademarks, added static electric statement, reviewed for accuracy

FOR ADDITIONAL NON-EMERGENCY INFORMATION, CONTACT:

Product Safety  
(330) 849-5163

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