

Technical Data Sheet

Santoflex™ 77PD

Applications

- Polymer modification
- Tires
- Water treatment industrial

Product Description

Chemical name: N,N'-Bis(1,4-dimethylpentyl)-p-phenylenediamine
Molecular weight: 305

Eastman Santoflex™ 77PD acts as a high activity antiozonant to protect natural and synthetic elastomer compounds, particularly in static applications for compounds containing no wax.

MAJOR APPLICATIONS AND PROPERTIES

- Santoflex™ 77PD is used in compounds subjected to static conditions for long periods of time, i.e. tires used in aircraft, OTR, mobile homes, and agricultural equipment, as well as structural mounts, fixed hoses, gaskets, etc.
- Santoflex™ 77PD provides stabilization for a wide range of solution and emulsion polymerized elastomers that can tolerate discoloration.
- Flex fatigue protection properties obtained with Santoflex™ 77PD vary between types of elastomers and temperatures. It protects 50/50 blends of NR and BR better than 100% NR unless the blended rubber product is put into a high temperature service. At high temperatures Santoflex™ 77PD vaporizes, rendering it less effective.
- Due to its high solubility in rubber, the product does not bloom or easily leach from compounds even at high concentrations.
- Santoflex™ 77PD provides compound protection against catalytic degradation by copper and other heavy metals.
- It will discolor compounds and cause severe contact and migration staining.

Typical Properties

Property	Typical Value, Units
General	
Form	Liquid
Specific Gravity @ 27/15°C	0.894-0.910
Viscosity @ 25°C	56-85 cSt

Compounding Information

While Santoflex™ 77PD protects rubber well against ozone attack in static applications, it does not contribute greatly to protection from ozone in dynamic applications. Therefore for applications also requiring dynamic ozone and flex fatigue protection an alkyl-aryl-paraphenylene diamine (PPD) such as Santoflex™ 6PPD should be added.

Typical use information (phr):

	Aircraft/Off-The-Road Sidewall	Automotive Mechanical NR Goods
Santoflex 77PD	1	1-2
Santoflex 6PPD	2	1-2
Antiozonant wax	3	2

Note: No PPD should be used at levels less than 1 phr in surface applications, as the ozone cracking pattern produced can lead to catastrophic failure.

Santoflex™ 77PD can reduce scorch safety and increase cure rate more so than other PPD's. One can evaluate the effect for any particular compound using a rheometer. Use of N-(cyclohexylthio)phthalimide can reverse this effect. One can improve a compound's microbiological resistance by combining 3 phr of Santoflex™ 77PD and 5 phr of chlorinated wax.

Handling Precautions

For detailed information on toxicological properties and handling precautions please refer to the current Safety Data Sheet. This information sheet can be downloaded from our web site or requested from the nearest Eastman office and should be consulted before handling this product.

Storage

Santoflex™ 77PD can be stored in drums or in bulk tanks. Store drums below 35°C and away from direct sunlight. For heated bulk storage above 35°C incorporate a nitrogen blanket on the tank to prevent product oxidation that could reduce its usefulness as an antiozonant. Also continuously circulate product stored in heated tanks to minimize temperature gradients and reduce heating element fouling, thus maximizing the product's consistency.

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