

# Technical Data Sheet

## Santoflex™ 6PPD Pastilles

### Applications

- Conveyor belt - non-food contact
- Polymer modification
- Rubber modification
- Tires
- Water treatment industrial

### Product Description

Chemical name: N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine

Molecular weight: 268

Santoflex™ 6PPD functions as a powerful antioxidant and antiozonant for natural and synthetic elastomer compounds and as a synthetic polymer stabilizer. Santoflex™ 6PPD provides protection against fatigue degradation in both static and dynamic operating conditions.

#### MAJOR APPLICATIONS AND PROPERTIES

- Santoflex™ 6PPD applications include the use in pneumatic tire components, solid tires, belts, hoses, cables, automotive mounts, bushings and general mechanical products that are exposed to continuous and intermittent dynamic operating conditions and require protection from ozonation.
- Santoflex™ 6PPD provides powerful antiozonant and antioxidant properties with excellent high temperature, fatigue and flex resistance to rubber compounds.
- It gives efficient stabilization for a wide range of solution and emulsion polymers.
- Santoflex™ 6PPD is a more active antioxidant than quinoline or diphenylamine based antioxidants.
- Santoflex™ 6PPD gives better long term fatigue resistance and ozone protection than IPPD. Due to its specific molecular structure and higher rubber solubility, it is less affected by environmental variables, such as heat or leaching, leading to greater durability.
- Santoflex™ 6PPD gives rubber protection against catalytic degradation by copper and other heavy metals.
- The product has no negative effects on compound adhesion to textiles or steel cord up to levels of 2 phr. Above this concentration it may bloom and interfere with ply to ply and ply to cord adhesion.
- It will discolor compounds and cause severe contact and migration staining.

### Typical Properties

Property	Typical Value, Units
<b>General</b>	
Form	Pastilles
Melting Point, Final	46-51 °C
Viscosity @ 60°C	27-38 cSt
Specific Gravity @ 60/15°C	0.986-1.000

### Compounding Information

Add 1-3 phr of Santoflex™ 6PPD to rubber compounds for resistance to ozone and flex fatigue. Increasing the

concentration increases the level of protection. To provide maximum performance in static applications include a blended wax in the compound formulation, appropriately chosen for the application's temperature range. Santoflex™ 6PPD can also be used for oxidation resistance alone. Its antioxidant performance is maximized at 0.5 phr. Higher levels actually reduce antioxidant protection even though ozone and flex fatigue resistance increase with higher levels.

Typical use information (phr):

	Tire sidewall	Brassed steel-cord skim	NR/SBR conveyor belt cover	NR/SBR V-belt	NR engine mount
Santoflex 6PPD		2	1 - 2	2	1 - 2
TMQ	2 - 4	-	1	-	0 - 1
Antiozonant wax	1 - 2 1 - 3	-	-	-	-

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.

Adding TMQ will maintain a compound's resistance to oxidation as well as protect Santoflex™ 6PPD from oxidizing, thus further enhancing long term performance. To protect NBR compounds from ozone attack use 4 phr of Santoflex™ 6PPD. It will also help protect polychloroprene but can reduce bin storage stability. To stabilize solution or emulsion polymerized elastomers add 0.3 to 0.6% (dry basis) of Santoflex™ 6PPD.

## 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

Store Santoflex™ 6PPD pastilles in single stacked pallets in a cool, dry, well ventilated area, avoiding exposure of the packaged product to direct sunlight. Double stacking of palletized material and/or exceeding 35°C can result in unusual compaction of product.

---

*Eastman and its marketing affiliates shall not be responsible for the use of this information, or of any product, method, or apparatus mentioned, and you must make your own determination of its suitability and completeness for your own use, for the protection of the environment, and for the health and safety of your employees and purchasers of your products. No warranty is made of the merchantability of fitness of any product, and nothing herein waives any of the Seller's conditions of sale.*

© 2018 Eastman Chemical Company or its subsidiaries. All rights reserved. As used herein, ® denotes registered trademark status in the U.S. only.