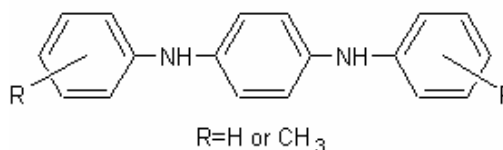




## Antiozonant DOX-1

Specification number: DOX1-012007

### 1. Chemical description:

Chemical name: Mixed Diaryl-p-phenylenediamines  
Chemical formula:  $RC_6H_4NHC_6H_4NHC_6H_4R$ , R = H or  $CH_3$ CAS number: 68953-84-4  
EINECS number: 273-227-8

### 2. Typical properties:

Appearance and form at 20° C: steel-brown granules  
Molecular weight: ~274 g / mol  
Solubility in water at 20°C: Insoluble  
Organic solvents: Soluble in acetone, toluene and xylene  
Melting point: 87 ÷ 105° C  
Decomposition point: > 200° C  
Density at 20° C: 1,00 ÷ 1,20 g / cm<sup>3</sup>

### 3. Specification values:

No.	Property	Unit	Specification		Test Method
			Min	Max	
1	Melting point	° C	88	105	ASTM D 1519
2	Drying loss at 60° C	wt. %	-	0,5	DJCHEM-213/00
3	Iron content	ppm	-	750	DJCHEM-214/04
4	Active components	wt. %	85,0	-	DJCHEM-210/04 (GC)
5	Diphenyl-p-phenylenediamine	wt. %	19,0	30,0	DJCHEM-210/04 (GC)
6	Ditolyl-p-phenylenediamine	wt. %	15,0	26,0	DJCHEM-210/04 (GC)
7	Phenyltolyl-p-phenylenediamine	wt. %	40,0	46,0	DJCHEM-210/04 (GC)

Date: 19-01-2007

Signature:

## 4. APPLICATIONS

- ANTIOXIDANT DOX – 1 is used in tyres and general rubber goods such as hoses, conveyor belts, o-rings, seals, gaskets and wiper blades to confer long term protection.
- ANTIOXIDANT DOX – 1 is a persistent antiozonant, powerful antioxidant and antiflex cracking agent for many natural and synthetic elastomer compounds. It is a particularly powerful antiozonant for polychloroprene.
- ANTIOXIDANT DOX – 1, when compared with other p-phenylenediamines, has the lowest effect on the scorch and cure rate of compounds based on natural rubber, SBR, polubutadiene and polychloroprene.
- ANTIOXIDANT DOX – 1, is the least staining of the commercially available p-phenylenediamines.

## 5. SAFETY AND HANDLING

- According to EEC regulations, practically non harmful by ingestion.
- Acute oral toxicity: LD 50 (rat) 4 g/kg
- Non skin or eye irritant under normal industrial conditions.
- No cases of skin sensitisation in humans have been reported.
- ANTIOXIDANT DOX –1 may also be used in articles intended for use in contact with food accordance with FDA regulations 175.105 (Adhesives) and 177.2600 (Rubber Articles).
- Transport regulations: ANTIOXIDANT DOX – 1: UN 3077, 9, III.

## 6. PACKAGING

- Bags 25 kg or hobos 1000 kg.
- Storage life: 2 years minimum if stored unopened in original packing.