

/ -  
( SBR/silicate)

/ /

2005/10/24

2005/4/10

### Abstract

The materials used in this work are locally produced Styrene Butadiene Rubber , with different silicate filler percent of (20,40,60,80,100) part per hundred rubber . Mechanical properties (Tensile, Hardness, Tear, Density and Elongation) were studied for all samples .The study shows that (Tensile, Hardness, and Density) properties increase , but elongation decreases as the filler percent increases. While the tear property records the best value at 60% of the filler percent .

Electrical Conductivity for all samples was studied and it was found that the conductivity decreases as the filler percent increases, and it increases with the applied voltage within the range (1-4) kV .

( )  
( SBR ) -  
( ) ( 100%-20% )  
(60%) ( ) ( )

. (1-4) kV

—

. (4-1)

(cross-linking reaction)

. (1)

(5)

.

. (6)

(7)

( )

. (10,11)

(8,9)

(SBR)

. (12-16)

( SBR )

(200°C)

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( Spark Plug ) (17)

: (3) . (2,17,18)

: ( **Tensile** ) -1

(ultimate strength)

: ( **Hardness** ) -2

(Penetration Resistance)

: ( **Tear** ) -3

: ( **Density** ) -4

( SBR )

: ( Elongation ) -5

: ( Electrical Conductivity ) -6

(1) - - - - - × =  
×

(SBR)

)

(

(20% ,40% ,60% ,80% ,100% ) (SBR)

:  
: -1

(0.3x1x5)cm

(0.3x1)cm

(2) - - - - -

- =

: -2

(0.3 ) cm

( )

Stendal –DDR (Shore)

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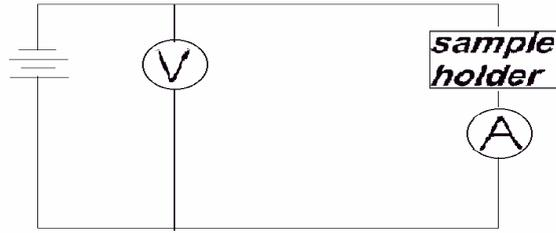
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	( )	
. (Shore)		:
		<b>-3</b>
( 0.5 mm )	( )	
	( )	
		:
	(3) - - - - -	- =
		:
		<b>-4</b>
		.
		:
		<b>-5</b>
	(5cm)	
	( )	
		.
		.
		:
		<b>-6</b>
(0.3cm =	1cm <sup>2</sup> =	)
(1-4)kV	(1)	
Leybold-Heraeus (52237)		
Phywe (07029.00)	Leybold-Heraeus (54039)	
. (1)		

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(1)

phr(part per hundred rubber )

(4) , (3) , (2)

(SBR)

(SBR)

(5,6)

(SBR)

(60%)

(5)

(17)

(60%)

(6)

(4)

(7)

-

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(8)

( )

(14,15,19,20)

(SBR /Silicate )

( )

-1

.(20-100)%

. 60%

-2

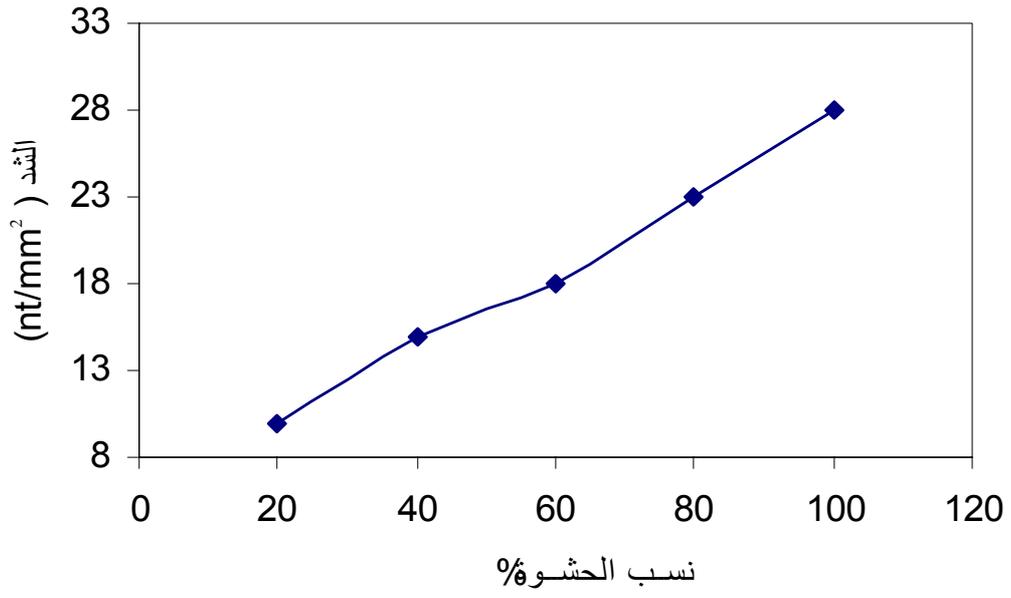
-3

-4

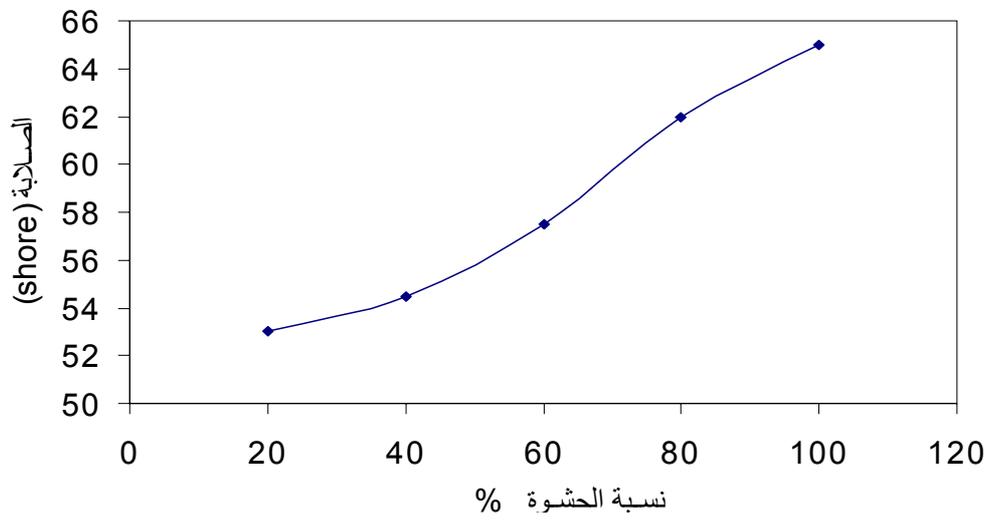
. (1-4)kV

(SBR\silicate)

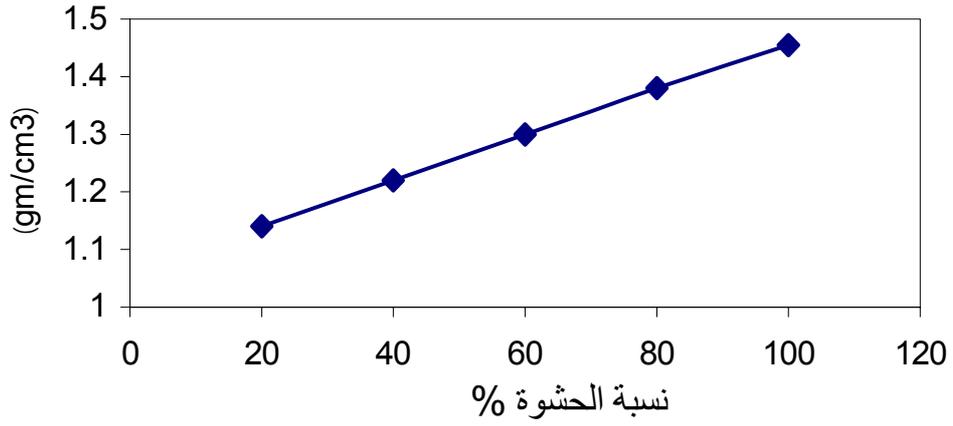




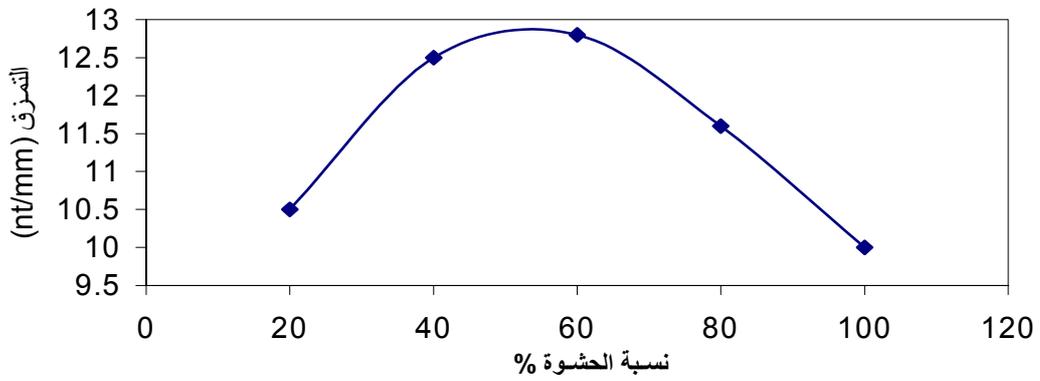
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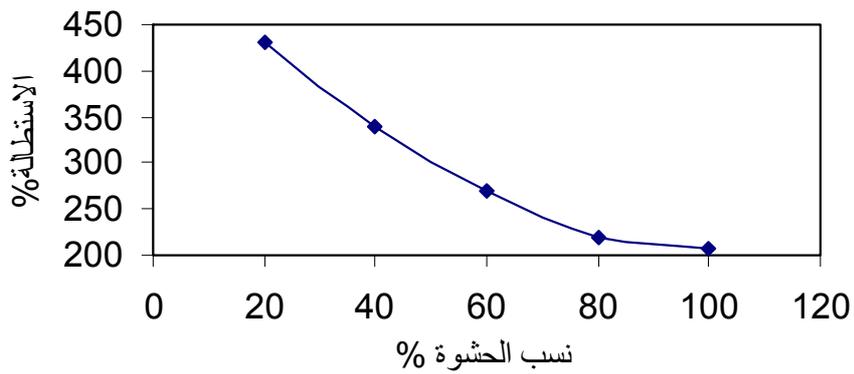
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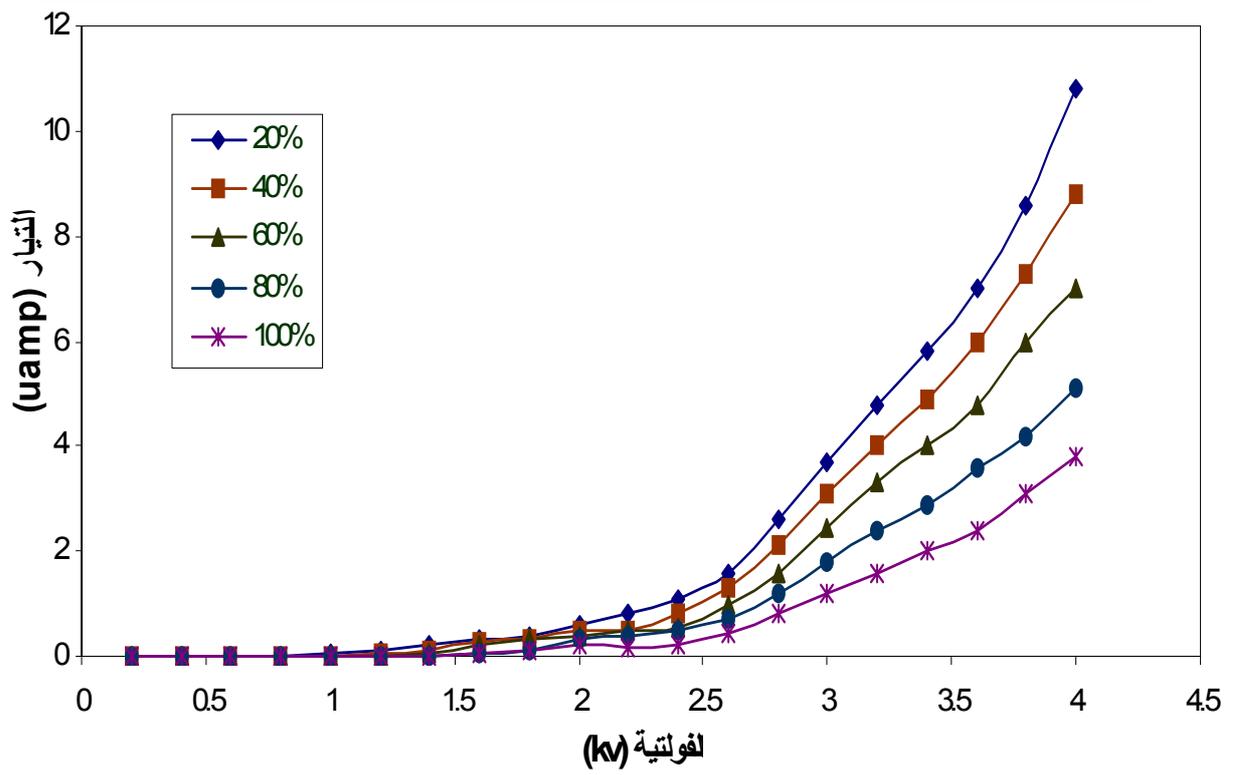
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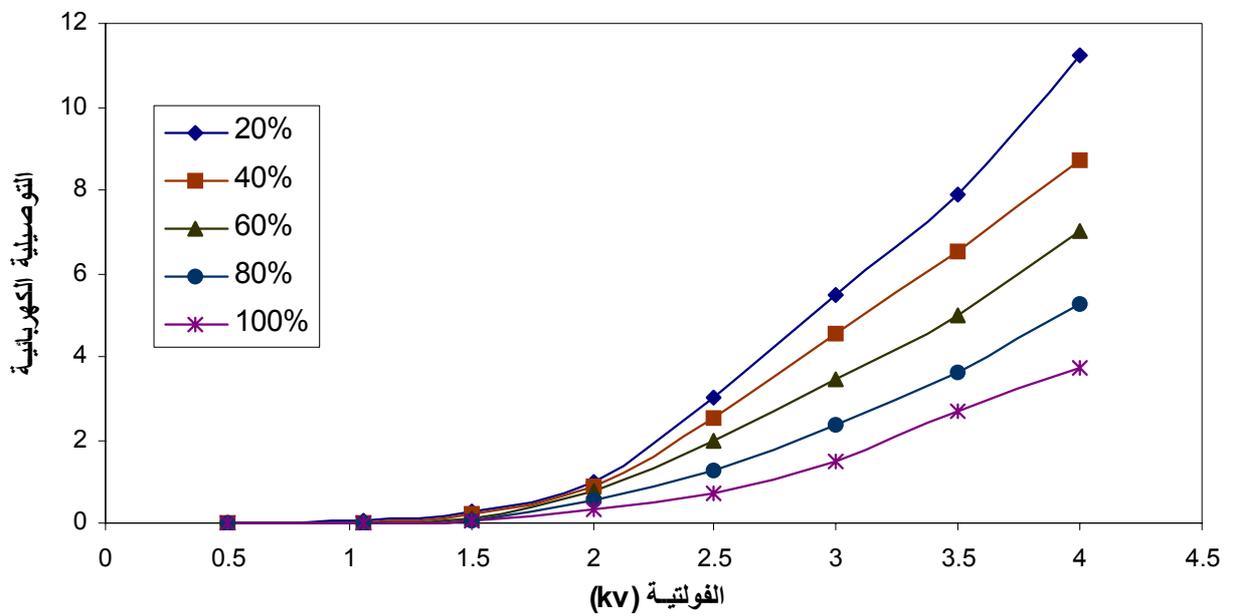
(5)



(6)



- (7)



- (8)