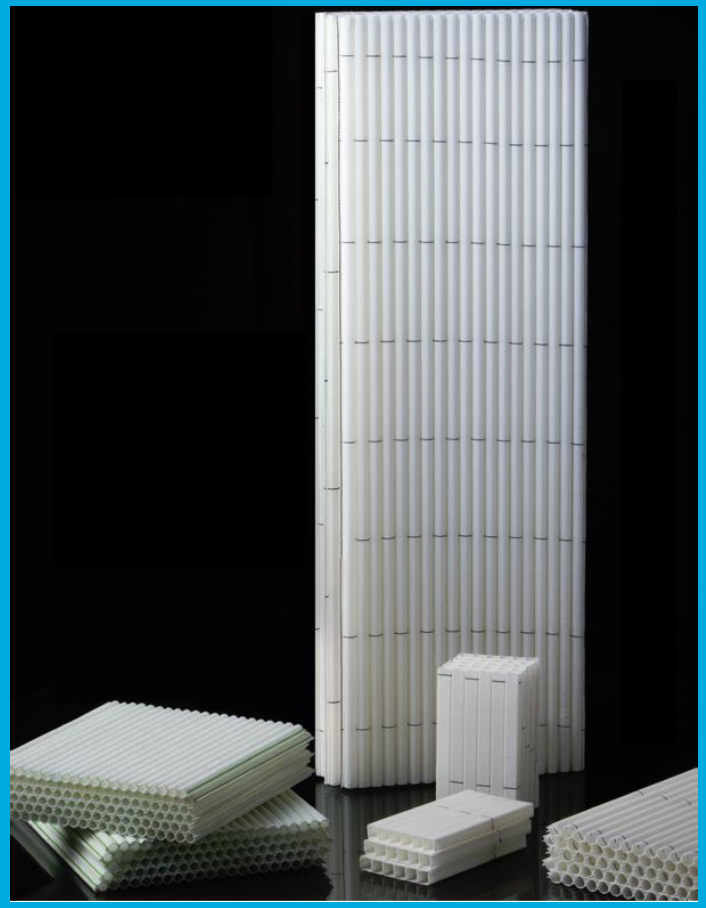
Gauntlet

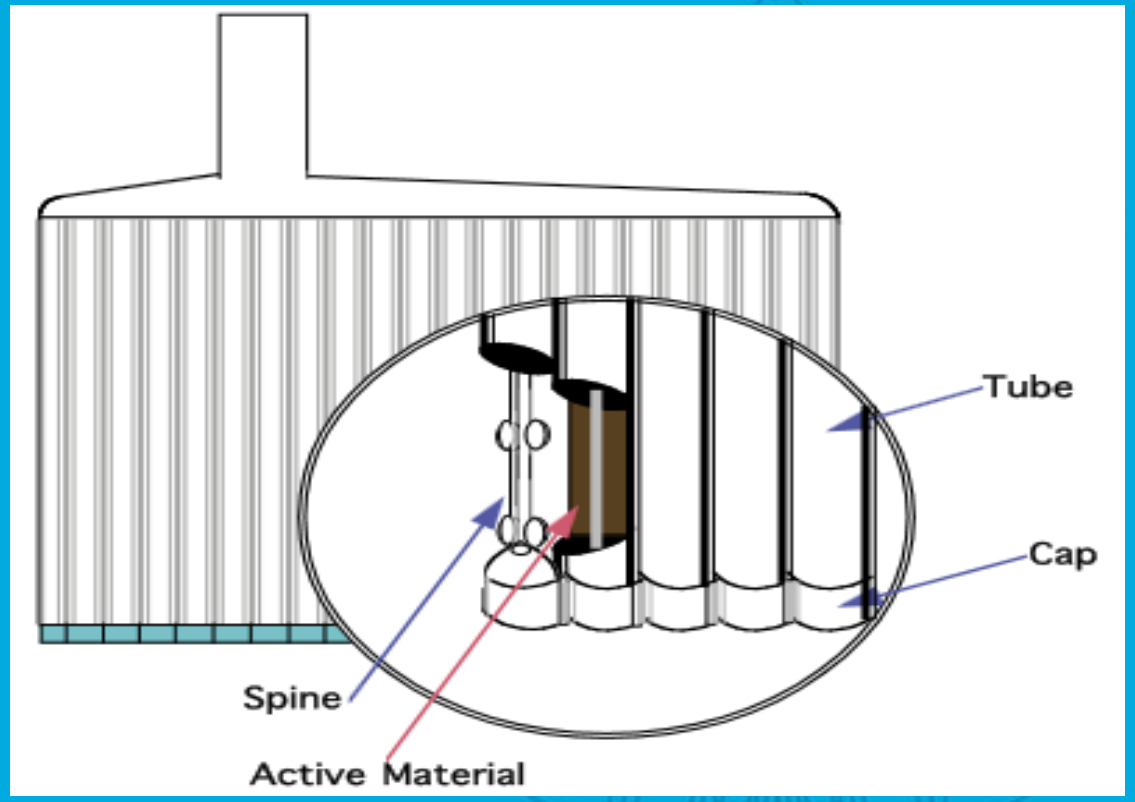


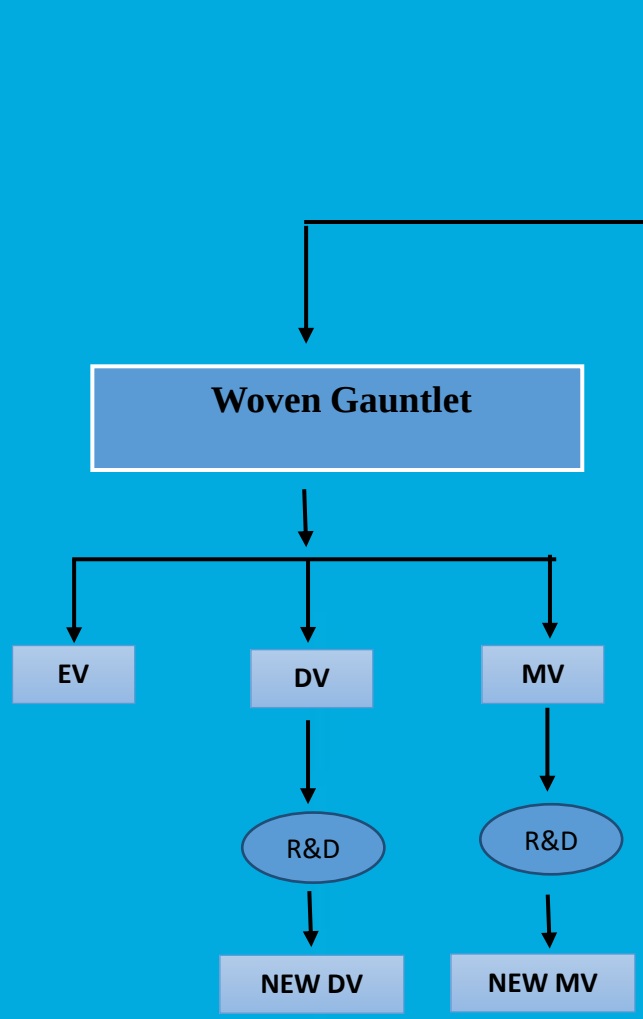
What is Gauntlet ?

- Gauntlet is the Heart of Lead Acid Batteries which determinants it’s superior life.

Basic functions of Gauntlet

- Container of active material & spine.
- Act as a filter in case of wet filling (slurry & paste)
- Prevent active mass shedding
- Retain PAM close to the spine during "battery breathing"




Gauntlet
Woven Gauntlet
Non-Woven Gauntlet
EV
DV
MV
R&D
R&D
NEW DV
NEW MV
Imported
Indigenous

Main Characteristics of Woven & Non-Woven Gauntlet

Woven Gauntlet

1. Mainly suitable for Dry Powder Filling Process
2. Fabric impregnated with special Acrylic resin
3. Porosity is excellent which gives lesser ER
4. Bursting Strength: > 36 kgf/cm^2
5. Weight loss after 24 hrs. in dichromate solution <0.5%

Woven Gauntlet

Non-Woven Gauntlet

1. Mainly suitable for Slurry filling and Paste Filling Process
2. Very fine Pore structure and as such high & uniform absorbency.
3. Micro-pores throughout the gauntlets which gives better Electrical Resistance.
4. Lower active mass loss.
5. Bursting Strength : > 15 kgf/cm^2

Non-Woven Gauntlet

Properties of Different types of Woven Gauntlet

Factors	Properties		EV	DV	MV
Rigidity	i)	Bursting strength (kgf /cm^2)	48 - 52	42 - 46	38 - 40
	ii)	Stiffness (N)	210 - 230	240 - 280	> 300
Backup	i)	Electrical Resistance (Ω-cm^2)	< 0.35	< 0.30	< 0.70
	ii)	Avg. Pore Size (mm^2)	0.093	0.0126	0.0064
	iii)	No. of Pores /cm^2	220 - 240	240 - 260	220 - 240
Robustness	i)	Oxidation Wt. Loss after 24 hrs Soaking into 1.3 sp. gr. H2SO4 + 50g K2Cr2O7/L. at 25°C (%)	0.10 – 0.30	0.20 – 0.40	< 0.60
	ii)	Oxidation Wt. Loss after 10 Days (240 hrs) Soaking into 1.3 sp. gr. H_2SO_4 + 50g $K_2Cr_2O_7$/L. at 80°C (%)	4.0 – 6.0	5.0 – 8.0	7.0 – 9.0

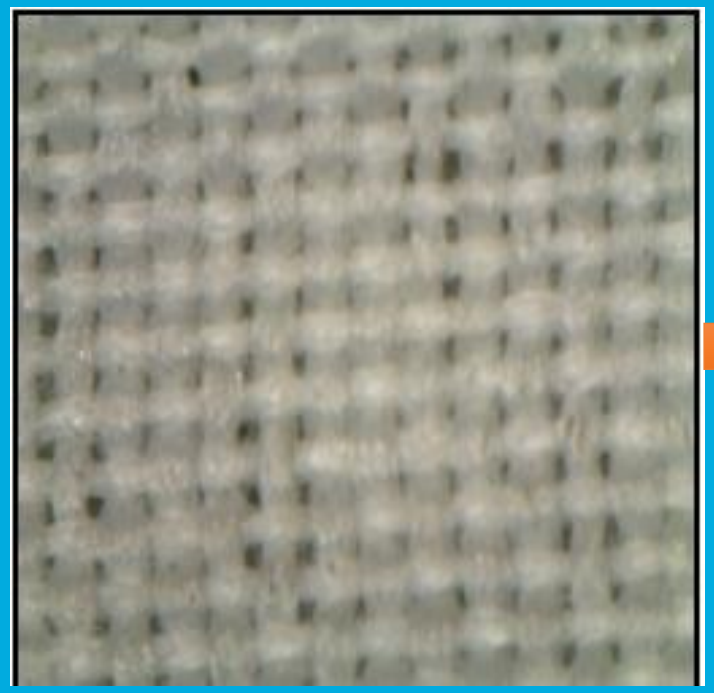
Properties of Different types of Non-Woven Gauntlet

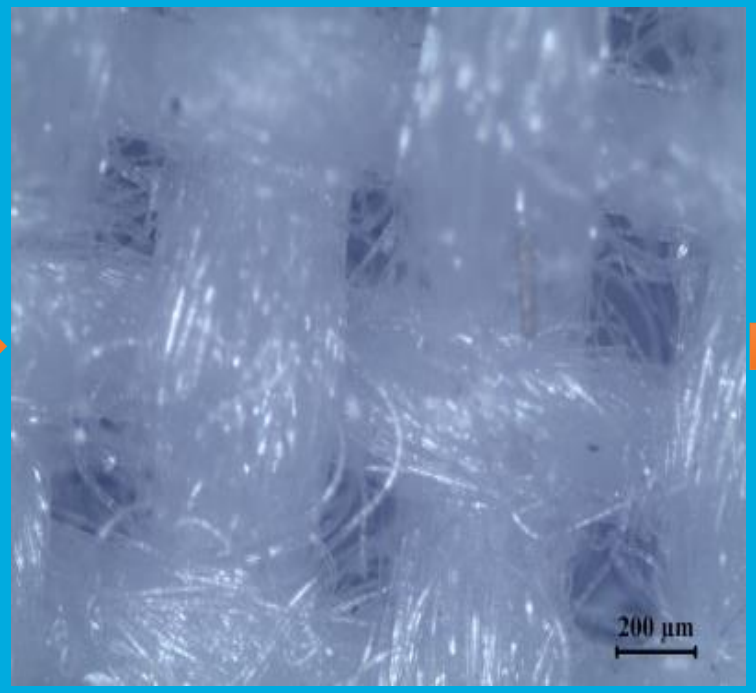
Factors	Properties		Imported	Indigenous
Rigidity	i)	Bursting strength (kgf /cm^2)	22 - 26	28 - 30
	ii)	Stiffness (N)	150 - 180	250 - 280
Backup	i)	Electrical Resistance (Ω-cm^2)	0.10 – 0.15	0.10 – 0.15
	ii)	Volume Porosity (%)	72 - 74	62 - 64
Robustness	i)	Oxidation Wt. Loss after 24 hrs Soaking into 1.3 sp. gr. H2SO4 + 50g K2Cr2O7/L. at 25°C (%)	0.00 – 0.20	0.00 – 0.20
	ii)	Oxidation Wt. Loss after 10 Days (240 hrs) Soaking into 1.3 sp. gr. H_2SO_4 + 50g $K_2Cr_2O_7$/L. at 80°C (%)	6.0 – 9.0	5.0 – 8.0

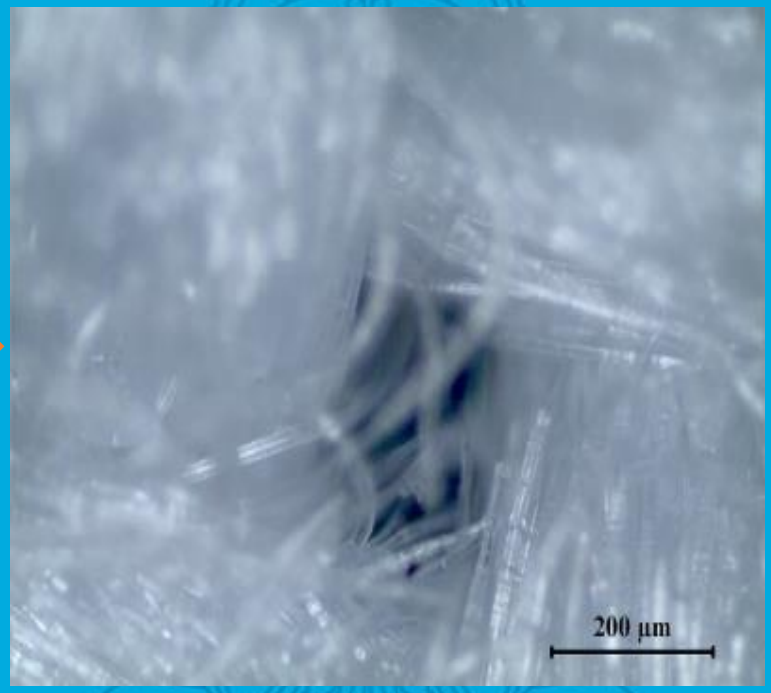
Key Features of our Gauntlet

I. Low Electrical Resistance.
II. Excellent Bursting Strength.
III. Outstanding Elastic Recovery.
IV. Uniform Pore Size.
V. Excellent stiffness.
VI. Good Oxidative Stability.
VII. Good Acid Resistant property.

Pores of AS-KETEX Gauntlets

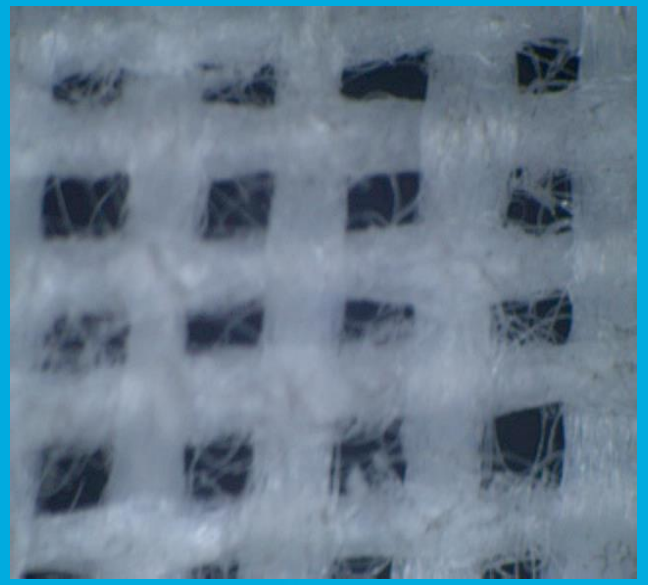


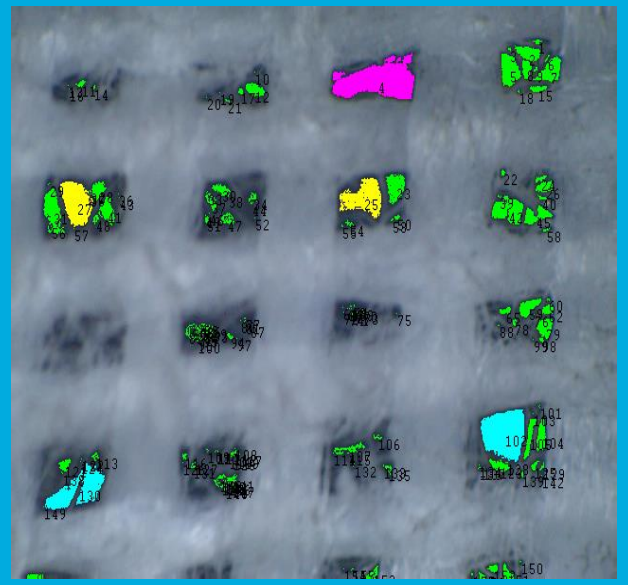


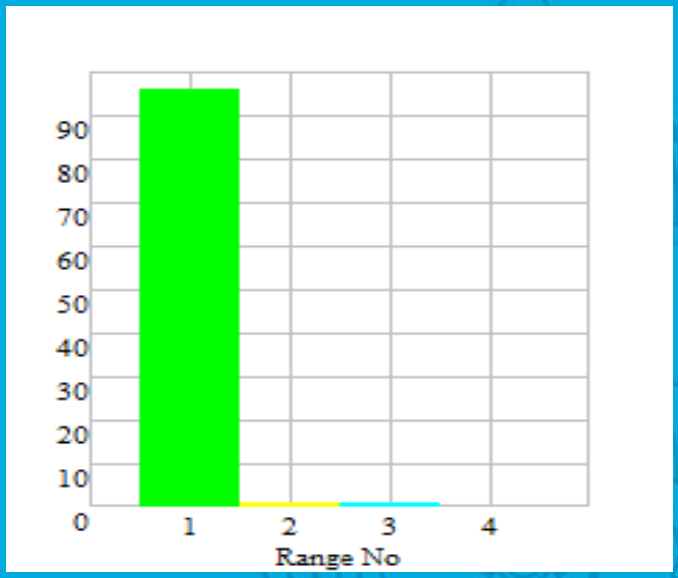


Uniformity of Pores Sizes

MICROSTRUCTURE TEST REPORT



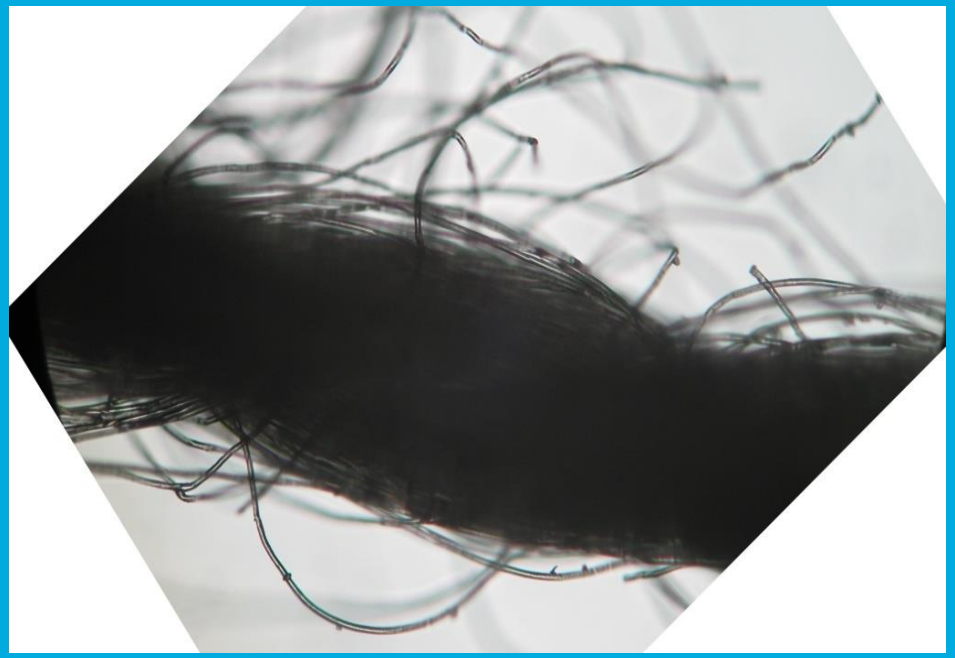




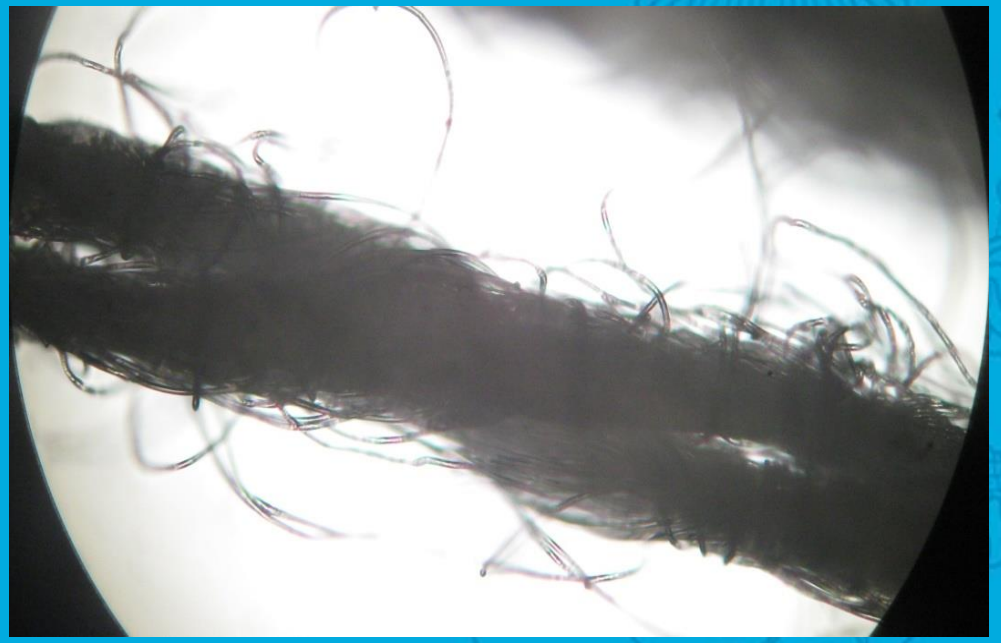
No.	Range From	Range To	Count	Percentge
1	0	0.019341056	154	96.86
2	0.019341056	0.038682113	2	1.26
3	0.038682113	0.058023169	2	1.26
4	0.058023169	1.077364226	1	0.63

Why we get low electrical Resistance ?

We have developed this type of polyester yarn Which have too many micro-pores, resulting low electrical Resistance.



Regular Polyester yarn



Polyester yarn after modification by KETEX

Resin

Basic functions of Resin in Gauntlet :

I. To increase resistance property of Polyester towards acid.
II. To increase Oxidation resistance property of Polyester.
III. To impart adequate stiffness.

Amer-Sil Ketex resin versus others

GAUNTLET TYPE	Wt. Loss after 24 hrs into 1300 sp.gr. H_2SO_4 + 50 g $K_2Cr_2O_7$/ ltr at Room Temp (%)	Wt. Loss after 7 days into 1300 sp.gr. H_2SO_4 + 30 g $K_2Cr_2O_7$/ ltr at 70°C (%)	Wt. Loss after 7 days into 1300 sp.gr. H_2SO_4 + 30 g $K_2Cr_2O_7$/ ltr at 85°C (%)	Wt. Loss after 2 hrs reflux into 1300 sp.gr. H_2SO_4 + 50 g $K_2Cr_2O_7$/ltr (%)
Chinese gauntlet with Phenolic Resin	4.42	Gauntlet Deformed	Gauntlet Detoriated	Data Not Available
Indian Gauntlet with Indian Resin	0.88	< 6.00	> 12.00	< 4.00
KETEX Gauntlet with Imported Resin	0.18	< 0.50	< 5.0	< 0.50
KETEX Gauntlet with Modified Indian Resin	0.27	< 0.50	< 5.0	< 0.50