GERMGUARD – Multifunctional Antimicrobial Compound for Masterbatches

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H & R Johnson (India) is the largest Home & Decor Solution Provider in India. It is part of Prism Cement Ltd which comes under Rajan Raheja Group.

The Rajan Raheja Group of Companies is $2 Billion company

INDUSTRIAL PRODUCTS & NATURAL RESOURCES Division offshoot of R&D which develops innovative and diverse products for Polymer, Tiles, Refractory, Batteries, Sanitary ware, Healthcare, Cement and Construction Industries.
Your day: A battle with Germs
BATHROOMS

Total Bacterial Count: 50,068 bac./ sq. in
Toilet Seat: 1201 bac./ sq. in

Is your bathroom really clean?

Solution: Anti Bacterial toilet Seat Cover
How clean is your toothbrush?

Solution: Anti Bacterial Bristles
Total Bacterial Count: $10^6$ CFU/ml

How dirty is your Fridge?

Solution: Anti Bacterial Vegetable Crisper
The laptop is 5 times more dirtier than the toilet seat cover!

Solution: Anti Bacterial keyboards
Solution: Anti Bacterial Additives in polymers
Some Facts about Germs

- On unprotected surfaces bacteria can multiply (*2X) in 20mins.
- 80% of the infections spread through contact that too at public places like cars, hospitals, hotels, public toilets.
- Your car is a ticking time bomb.

YOU CAN’T SEE THEM.
BUT THEY’RE EVERYWHERE!
Presenting....

Multifunctional
Anti Microbial Compound

INNOVATIVE PRODUCT
FROM

H&R JOHNSON (INDIA)
A Division of Prism Cement
GermGuard is an active silver-based anti-bacterial compound.

It is safe, non-toxic & eco-friendly.

It inhibits the growth of deadly Bacteria, Fungus, Molds.
Benefits of GERMGUARD

- Life long Protection
- Non Corrosive
- Highly Safe
- Inorganic in Nature
- Non Toxic
- Eco Friendly
- Compatible with various products
The silver ions are homogenously distributed throughout the matrix.

These ions migrate to the surface & kill the bacteria on the surface by puncturing their cell membrane.
Preparation of Antibacterial Masterbatches

• Masterbatch can be prepared using 5% loading or 10% loading

• Antimicrobial Masterbatch processing is similar as preparing coloured masterbatches

• The recommended dosage in the end article is from 0.1 to 0.5% for antibacterial efficacy depending on grade of polymers
<table>
<thead>
<tr>
<th>Sample Identification</th>
<th>Test Organism</th>
<th>Antimicrobial Activity (R)</th>
<th>Microbial Kill (% Reduction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seat Cover with GGE 10 (0.1%)</td>
<td>Staph. Aureus</td>
<td>2.11</td>
<td>99.23</td>
</tr>
<tr>
<td></td>
<td>E. Coli</td>
<td>2.01</td>
<td>99.03</td>
</tr>
</tbody>
</table>
Control surface VS. Germfree surface Testing

Bacterial Growth on
Control surface after 24 hrs

Bacterial Growth on
Germ Free surface after 24hrs

S. Aureous

Validated & Tested as per JISZ 2801:2006
(International Protocol)
**Different Varieties Of GermGuard**

**GG E10**
- General Grade Plastic (PP, LDPE, PET, GPPS, HIPS, ABS etc.)

**GG E20**
- Food Grade Plastic & polymer & medical devices & other pharma applications (IS Certified)

**GG L 20**
- Water Purification (Ceramic Candle & Activated Carbon) & Textile finishing

**GG L10**
- Preservative in Cosmetics, Body Deodorant, Soap, face wash, shaving cream, Toothpaste, wound healing cream etc.

**GG E 50**
- High Temperature application like sanitary ware & ceramic tiles.
Packaging Industry
Automobiles Parts

- Steering Wheel
- Stereo System
- Seat Cover
Bathroom Articles

- Liquid Dispenser
- Shower Curtains
- Chair
- Shower Cap
- Bathing Tub
- Washing Machine
- Mugs
Office Space
Medical & Pharma
Kitchen ware Articles
Miscellaneous
Advantage of ENDURA Germguard

- Superior Product At Your Door Step
  - Locally Available
- Available in Small Lots
  - Technical Support
- Free Testing & Assistance
OUR EXCLUSIVE DISTRIBUTOR

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Make your product germ-free and gift your customers a healthy lifestyle.
“Behind every successful business there is an enterprising partner.”

Thank You