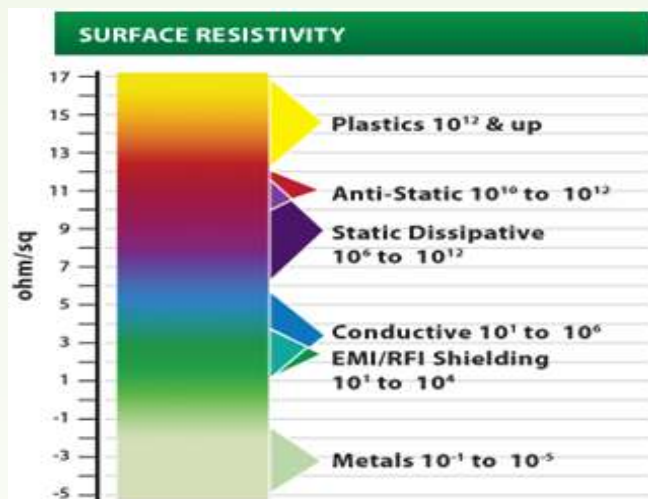


# ANTISTATIC MASTERBATCH

Static electricity is the buildup of excess electrical charges on the surface of an object, usually created when materials are pulled apart or rubbed together, causing positive (+) charges to collect on one surface and negative (-) charges on the other surface.

Generation or presence of static charge can have severe consequences during production, processing or service period of plastics. Static electricity may result in sparks, fire or explosion, shocks to human, materials clinging together, dust accumulation, splashing of inks during printing and filling / loading problems during packaging.



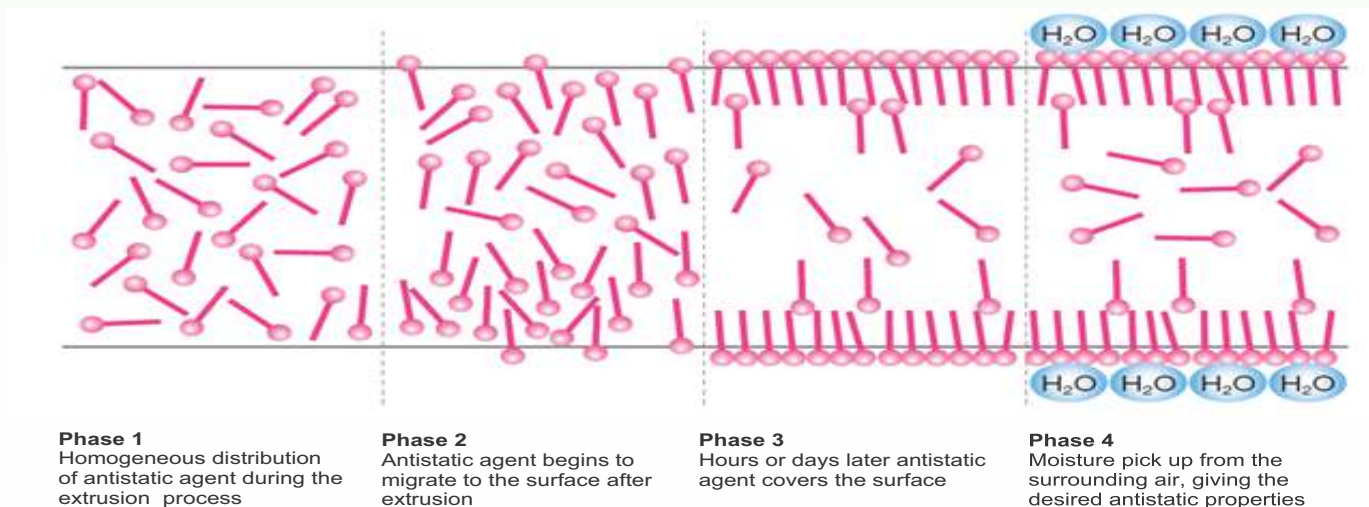
Static electricity is measured in terms of -

- ❖ Surface Resistivity, Ohm/Sq
- ❖ Volume Resistivity, Ohm.m
- ❖ Static Decay Time, Sec

Plastics are poor conductors of electricity & have surface resistivity upwards of 10<sup>12</sup> Ohm/sq. Addition of Antistatic additive lowers the resistivity to, 10<sup>10</sup> to 10<sup>12</sup> Ohm/sq.

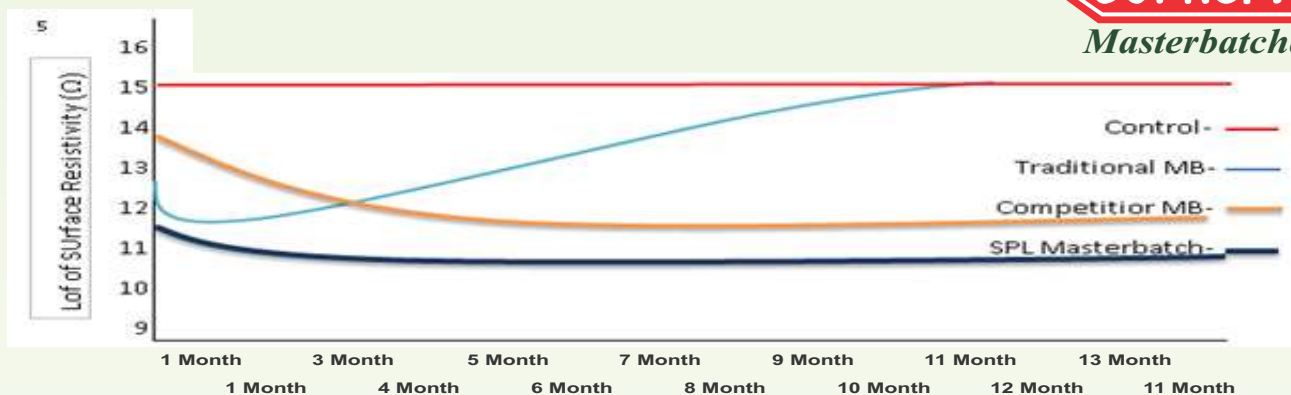
Performance of the additive depends on the limited compatibility & mobility in the polymer matrix and % Relative humidity in the atmosphere.

To facilitate dissipation of the static charge, antistatic masterbatch in combination with atmospheric humidity forms a conductive film over the plastic surface, as shown below -



Depending on the applications the antistatic effect reaches its optimum level either immediately (film) or after a period of time (injection molding, extrusion).

As shown in graph below, traditional masterbatch used in polyolefin films shows drastic reduction in surface resistivity during initial period and then starts to upgrade after a certain time. As per evaluation, conventional masterbatch shows decrease in surface resistivity of film with respect to time, while SPL masterbatch shows immediate drop in surface resistivity and maintained it for prolonged time, showing most efficient performance.



### Benefits of Antistatic Masterbatch :

- ❖ Eliminate possibility of sparks due to friction, thus eliminating the risk of fire explosion in existence of flammable chemical vapors
- ❖ Eliminates dust accumulation, thus retaining surface aesthetics
- ❖ Eliminate possibility of minor shock to human, during handling
- ❖ Prevents fouling, packaging film defects caused by sparks during processing
- ❖ Acts as external lubricant, aids in mold release of injection & blow molded articles
- ❖ Indirect food contact approval
- ❖ Compatible with other additive Masterbatches
- ❖ Good thermal stability
- ❖ Excellent colour stability

### Grade & Application Details

Grade	Dosage level, %	Compatible Polymers	Applications
SP7306 0001	1.5 – 3.0 2.0 – 5.0	GPPS, HIPS	Foam, Injection Molding, Extrusion and Thermoforming
SP7106 0001	1.5 – 3.0 1.5 – 2.5, 2.0 – 6.0, (1.5 – 4.0 mm)	LLDPE, LDPE, HDPE, PPHP, PCPC	Foam, Tapes Molding (Injection, Blow & Roto), Pipes, Profiles
SP7132 0001	1.5 – 3.0 1.0 – 2.0, <50 μ 2.0 – 3.0, >50 μ 2.0 – 6.0, (1.5 – 4.0 mm)	LLDPE, LDPE, HDPE, PPHP, PCPC	Foam, Films, Tapes Molding (Injection, Blow & Roto), Pipes, Profiles

**Note:** \*In case further information is required, contact SPL representative for recommendation / clarification.

### Regulatory Compliance

At recommended levels, SPL Antistatic Masterbatch(s) are suitable for food contact applications.

All grades are Heavy Metal free and are compliant with RoHS regulation.

### Packaging & Storage

Material is supplied in pellet form, packed in 25 Kg laminated bags. SPL recommends storage of material in a ventilated & covered facility, protected from Moisture, Sunlight and Heat. The packing material used is not UV stabilized and hence should not be exposed to sunlight.



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