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# Permanent antistatic agent

#### Mechanism of permanent antistatic agent

Generate a conductive network during compounding/processing then discharge through the pathway.

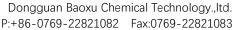
# Types & features of antistatic agents

| type                      | migratory<br>additives   | permanent<br>antistatic   | conductive<br>carbon<br>black/nanotube  |
|---------------------------|--|---|---|
| surface resistivity level | Antidust to ESD  | Antidust to ESD   | Conductive  |
| humidity<br>dependent     | Yes  | No  | No  |
| typical dosage            | 0.2-2%   | 7-20%   | 3-10%   |
| resistance level          | 10 <sup>9</sup> -10 <sup>12</sup>  | 10 <sup>8</sup> -10 <sup>14</sup>   | 10 <sup>4</sup> -10 <sup>5</sup>  |
| range                     |  |   |   |
| advantages                | Low dosage   | <ul><li>No bleed-out, No polluting</li><li>Perform immediately &amp; long lasting</li></ul> | <ul> <li>Best performance</li> <li>Lower cost compared with permanent antistatic</li> </ul> |
| drawback                  | <ul><li>Bleed-out</li><li>Performance loss</li><li>by washing</li><li>Short term</li><li>effective</li></ul> | Higher dosage & costs   | Negative impact on mechanical,     Black color only   |

#### baoxu permanent antistatic agent products

| Item                        | BX ATA PA100                | BX ATA PA200                |
|-----------------------------|-----------------------------|-----------------------------|
| Form                        | Solid, without carrier      | Solid, without carrier      |
| Color                       | White to Light yellow color | White to Light yellow color |
| Melting Point ℃             | > 90                        | > 100                       |
| Surface resistivity (25 °C, | 10 <sup>7</sup>             | 10 <sup>6</sup>             |
| 50%R.H.) [ohms/sq.]         |                             |                             |
| Application                 | Polyolefin, PP, PE, TPO,    | Engineering Plastics, PA,   |
|                             | HDPE                        | PET/PBT, POM,ABS,           |

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|  | ASA, HIPS, PC/ABS |
|--|-------------------|
|  | alloy.            |

#### Features of permanent antistatic additive

- No migrating side effects.
- for both anti-dust and static dissipative applications.
- · maintain mechanical properties of the polymer.
- easy processed by extrusion or injection process.
- odorless
- light color.
- halogen-free.
- long-lasting performance

#### Typical application data

#### **BX ATA PA100** performance in PP

| Polypropylene | PA100 | surface resistivity [Ω/sq.]        |
|---------------|-------|------------------------------------|
| 95            | 5     | 10 <sup>13</sup> -10 <sup>14</sup> |
| 90            | 10    | 10 <sup>12</sup> -10 <sup>13</sup> |
| 85            | 15    | 10 <sup>12</sup>                   |
| 80            | 20    | 10 <sup>11</sup>                   |

Processing condition: Extrusion @230°C, Injection@230°C

### BX ATA PA200 performance in PC/ABS

| PC/ABS=7/3 | PA200 | surface resistivity [Ω/sq.]        |
|------------|-------|------------------------------------|
| 95         | 5     | 10 <sup>13</sup> -10 <sup>14</sup> |
| 90         | 10    | 10 <sup>11</sup>                   |
| 85         | 15    | 10 <sup>10</sup>                   |
| 80         | 20    | 10 <sup>9</sup>                    |

Processing condition: Extrusion @250-260°C, Injection@250-260°C

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## **Dosage**

7-15% based on polymer and applications.

# Handling

- Baoxu permanent antistatic agent product is very hygroscopic substance that is dried before shipping. Store under cool and dry conditions. After opening, use immediately.
- Keep closed when not in use. In case of that, this product absorbs moisture, drying at 70-80 °C for 3h under a vacuum is required before use.