Development of clean type permanent antistatic agent PELECTRON LIP

Suitable for electronic materials due to minimal outgassing & ion elution

Sanyo Chemical Industries, Ltd. (Head office: Higashiyama-ku, Kyoto City; President: Takao Ando) has newly developed PELECTRON LIP excels in cleanliness due to its very little outgassing and ion elution, added to PELECTRON grades which have low-resistivity and impart permanent antistatic agents for resins. PELECTRON LIP is suitable for clean-room use such as electronic related materials. PELECTRON LIP can also be applied to POM or PVC whose thermal stability is likely to deteriorate so that conventional antistatic agents were difficult to use for them. In addition, compared to conventional permanent antistatic agents, PELECTRON LIP has similar refractive index to PMMA. So if PELECTRON LIP is used to PMMA of many applications in which transparency is needed, it keeps enough visibility.

【Details of the development】
<Background>
Plastics are likely to accumulate static electricity because of their high electric insulation. Therefore, the plastic resins used in manufacturing process of electric, electronic parts as packaging and transporting materials always take measures to prevent not only dust but also troubles such as electrostatic faults, malfunction or breakdown of the electronic circuit caused by static electricity. Sanyo Chemical has marketed polymer-based permanent antistatic agents; PELESTAT and PELECTRON, without wearing off or dropping out from applied resins and they have gained popularity.
With the advances in miniaturization and high-density packaging in the precision electronic fields, quality requirement tends to become severe. In such circumstances those measures against dust and static electricity become more important than ever before. Therefore less contamination is needed not only for main plastic, but also additives including antistatic agents.

<PELECTRON LIP>
Sanyo Chemical has developed clean type antistatic agents PELECTRON LIP with very little outgassing and ion elution to meet such needs. PELECTRON LIP having high electro conductivity (surface resistivity $10^7 \Omega$ ) comprises a block copolymer with polyamide (nylon) hard segment and polyether soft segment. When kneaded about 10 to 15% into resins, PELECTRON LIP decreases the surface-resistance of resins below to $10^{10}\Omega$ where is almost no charge on the surface. And it minimally affects the mechanical properties of the resins.
In addition to the clean feature, it also features as described below. That goes PELECTRON LIP is expected a wide spread applications in the fields without saying those of electric, electronics, but also other fields.
<Features of PELECTRON LIP>

1. Clean due to minimal outgassing and ion elution
PELECTRON LIP has successfully reduced outgassing and ion elution. PELECTRON LIP is suitable for electronic fields as an antistatic agent for use in materials such as packaging and transporting materials (tray, tube), sheet (carrier tape, cover) and films.

2. Applicable to thermally unstable resins such as POM and PVC
POM (polyoxymethylene) and PVC (poly vinyl chloride) are widely used from electronics packaging and transporting to automobile parts. Their low thermal stability prevented conventional antistatic agents to use and to impart enough antistatic property.
PELECTRON LIP successfully imparts antistatic property to such resins without causing deterioration of their thermal stability.

3. Enables PMMA to maintain its clear visibility
Since PMMA has clear and good visibility, it is suitable for quality management to check content or damage. So PMMA is used for electronics packaging and transporting. PELECTRON LIP imparts adequate antistatic property to PMMA with a refractive index from 1.49 to 1.50, while maintaining the visibility because the refractive index of PELECTRON LIP is adjusted to 1.50.

-Reference-
Clear visibility of PMMA of kneading PELECTRON LIP