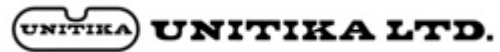


May 21, 2009



Alloy Type TERRAMAC[®], New Biomass-based Resin, Developed.
Tanita's Digital Bathroom Scale Equipped with Chassis of New TERRAMAC[®].

Unitika Ltd., Osaka, Japan, has successfully developed a new alloy of biomass-based resin, which has unprecedented properties such as moldability, transparency, flame retardancy, appearance and so on. Unitika's improvement techniques of polylactic acid (PLA) and accumulated knowledge for producing alloys of engineering plastics have brought the achievement of this successful development.

This new alloy type TERRAMAC[®] resin has also heat resistivity, durability, and impact resistivity equal to ABS resins. A new eco-friendly digital bathroom scale HS-302, nicknamed ECO Living, is equipped with chassis of the new TERRAMAC[®] resin, which contributes to decreasing about 20% of CO₂ emission from the product compared with previous model. Tanita will start selling this new bathroom scale from mainly in Europe and outside of Japan, where are relatively ecologically-minded areas, and plans to expand the sales area gradually.

1. Technological background of Unitika

Plant-based PLA, which is a major component of Unitika's biomass-based material TERRAMAC[®], has been expected to become substitute for a part of conventional oil-based plastics. Oil-based plastics emit CO₂ and green gases into atmosphere in incineration after they are discarded. On the other hand, plant-based plastics, such as PLA, do not theoretically increase CO₂ in atmosphere because the emitted CO₂ in incineration of the plastics is equivalent to the absorbed one by feedstock plants from atmosphere when they grew up. Therefore, plant-based plastics are called "carbon neutral" materials and contribute to lowering the amount of green gas emission.

Although PLA is such an eco-friendly plastic, PLA has been required to be improved in properties, such as brittleness and low heat distortion temperature, in order to be used in various applications. On this subject, Unitika developed a world-first commercially available heat-resistant PLA sheet in October 2002. After that, the deficits of the heat resistance, flame retardance, and impact resistance of PLA resins for foam and injection molding were overcome by applying Unitika's nanotechnology, plant-based reinforcements, inorganic fillers, and so on. Moreover, an acceleration technique for molding speed of PLA was accomplished by Unitika and more heat-resistant and impact-resistant grade of TERRAMAC[®] resins were developed. These epoch-making resins drove the expansion of the PLA market.

Nevertheless, it was slow for TERRAMAC[®] to be applied to products which were used under highly-loaded conditions. Now, alloy type TERRAMAC[®], which can be used under unprecedentedly highly-loaded conditions, has been successfully developed with Unitika's alloying techniques.

2. Features of new developed TERRAMAC[®] alloy grade

By being applied Unitika's accumulated improvement technology for PLA and polymer alloy, the new TERRAMAC[®] alloy grade has acquired unprecedented functions as a PLA based material, such as moldability, transparency, flame retardancy, apparatus, and so on. The TERRAMAC[®] alloy grade (heat resistant, durable, and impact-resistant grade) applied to HS-302, Tanita's new bathroom scale, has features as follows:

- heat resistance, durability, impact-resistance, and processability equal to or surpassing ABS
- about 20% less emission of CO₂ than ABS
- applicability to the same facilities for ABS
- compliance with "BiomassPla," which means biomass-based plastics, certified by Japan Biomass Plastics Association (JBPA)

Properties of TERRAMAC[®] alloy grade can be controlled by its alloy design in order to fit the application. Biomass content and CO₂ emission of the resin vary with the alloy design. Other various alloy grades, such as "transparent, heat-resistant, and durable grade" and "heat-resistant, durable, and flame-retardant grade," have been developed. Some samples of these alloy grades are already provided.

3. Key factors for Tanita's bathroom scale HS-302, nicknamed ECO Living

Tanita has chosen TERRAMAC[®] alloy grade for chassis of their new bathroom scale "ECO Living" because they have highly admired its heat-resistance, durability, and impact-resistance equal to or surpassing ABS. Also, Tanita has highly valued its moldability and appearance. For the sake of announcing the eco-friendly feature that CO₂ emission of the plastic part can be reduced by 20% compared to a conventional plastic part, "ECO Living" will be exhibited at Unitika's booth in NEW Environment Exposition 2009, Tokyo Big Site, from Tuesday May 26th to Friday May 29th, 2009.

4. Future prospects

Unitika will expand this new TERRAMAC[®] alloy to toys, general merchandise, and so on, as well as electric products. Lineup of TERRAMAC[®] products now covers a wide range of customer needs from high biomass content grade to high function grade by taking in the new TERRAMAC[®] alloy.

Furthermore, Unitika will continue developing environmentally friendly biomass-based material with a wide range of TERRAMAC[®] products, such as films, sheets, fibers, non-wovens, and resins. Especially, this new TERRAMAC[®] alloy is expected to grow and become an important pillar of domestic and international TERRAMAC[®] business of Unitika.

Sales plan:

Aiming 80 million yen in sales in 2011.