Biodegradable polyurethane dispersions.

Covestro raw materials can enable biodegradable coatings and composite solutions.

Impranil®

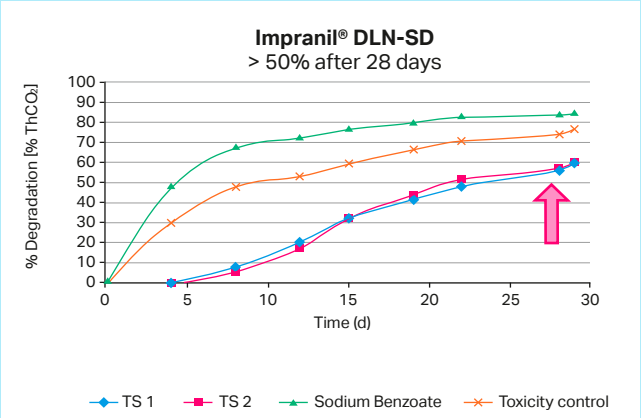
covestro

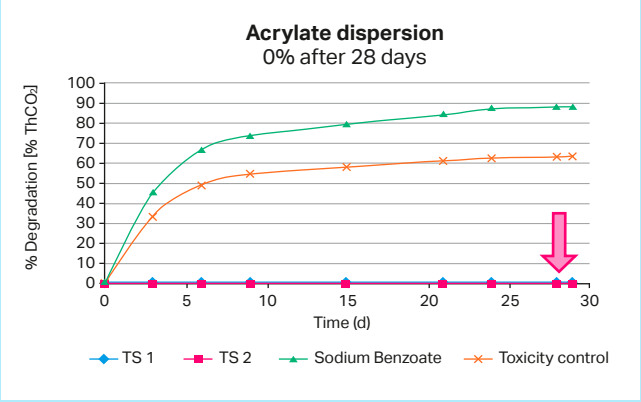
Impranil®: Covestro raw materials can enable biodegradable coatings and composite solutions.

Impranil® DLN-SD biodegradability

Example of OECD 301 results

- **Impranil®** DLN-SD vs acrylate dispersion





More and more, biodegradability is becoming a key topic for polymer materials in various applications such as prints for T-shirts or coatings and binders in the packaging industry. Yet there is still some confusion in the discussion when various terms are mentioned in this context, such as “degradability”, “compostability” or “renewability”.

Bio-based polymers are partially derived from renewable biomass, whereas biodegradable polymers degrade in specific environments. The origin of the raw materials and the biodegradability characteristics are not directly interlinked but depend on the chemical structure of the molecule. Bio-based polymers that do not degrade easily and fossil-based polymers with high degradability rates can be found. As these polymers can be used in different applications, biodegradability tests must be carried out in the relevant environment such as seawater, soil or under industrial compostability conditions.

When developing new products, Covestro considers sustainability throughout the entire product life cycle. This includes the raw materials, production and processing as well as the application and end-of-life options of our products.

Covestro **Impranil®** DLN-SD is a fossil-based polyurethane dispersion showing promising degradability rates in water. It was tested for biodegradability according to the CO_2 evolution test (OECD test standard 301) and shows a degradation of above 50% in 28 days. In general, biodegradability rates of **Impranil®** DLN-SD polymers are significantly higher than other film formers such as acrylic dispersions and therefore contribute to a reduced end-of-life impact. Beside the good biodegradable properties, **Impranil®** DLN-SD can be used in various applications due to its dry hand feel, good scratch and washing resistance when crosslinked, as well as good film forming properties and good compatibility with NBR (suitable to compound with NBR for gloves).

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