



Biodegradable
polyurethane dispersions.

Covestro raw materials can enable biodegradable
coatings and composite solutions.

Impranil®

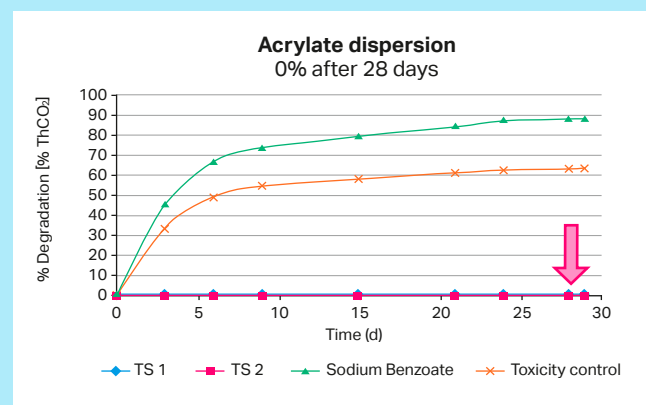
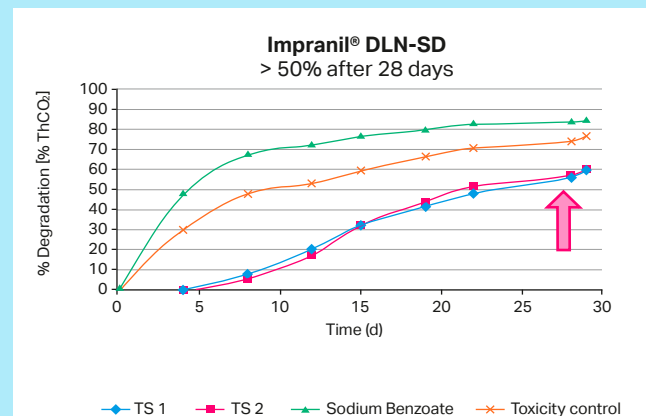


Impranil®: Covestro raw materials can enable biodegradable coatings and composite solutions.

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 CO₂ 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).

The manner in which you use our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations, is beyond our control. Therefore, it is imperative that you test our products to determine suitability for your processing and intended uses. Your analysis must at least include testing to determine suitability from a technical, health, safety, and environmental and regulatory standpoint. Such testing has not necessarily been done by Covestro, and Covestro has not obtained any approvals or licenses for a particular use or application of the product, unless explicitly stated otherwise. [EMEA only: If the intended use of the product is for the manufacture of a pharmaceutical/ medicinal product, medical device¹ or of pre-cursor products for medical devices or for other specifically regulated applications which lead or may lead to a regulatory obligation of Covestro, Covestro must explicitly agree to such application before the sale.] Any samples provided by Covestro are for testing purposes only and not for commercial use. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale which are available upon request. All information, including technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed by you that you assume and hereby expressly release and indemnify us and hold us harmless from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with any claim of any patent relative to any material or its use. No license is implied or in fact granted under the claims of any patent. ¹Please see the “Guidance on Use of Covestro Products in a Medical Application” document.
 Edition: 2021 · Printed in Germany



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