Validation of an industrial process to manufacture isosorbide bis(methyl carbonate) at pilot level

VIPRISCAR

Newsletter
April 2019

Towards a new industrial model. Business opportunities based on biomass

The chemical industry faces a new revolution. At the turn of the 19th century, new processes based on the exploitation of fossil resources emerged making a radical impact with the development of the petrochemical industry.

Nowadays, society demands a new revolution of the production methods that promote the implementation of an alternative development model focused on sustainability and circular economy.

Based on these trends, the VIPRISCAR project is being developed between 2018-2021, funded by the BBI-JU and led by TECNALIA.

It results from sustainable process to produce isosorbide bis-methyl carbonate (IBMC), developed and patented by TECNALIA up to TRL 3.

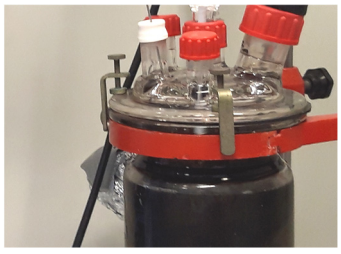
IBMC is a glucose-derived new product, which is not yet introduced in the market.

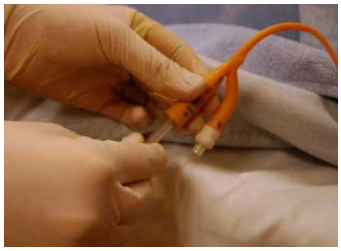
The main objective of the project is **to validate a manufacturing process at pilot plant scale** (TRL 5, production batches of 100 kg).

VIPRISCAR's second objective is to demonstrate with a proof-of-concept**, the added value that IBMC** can bring to the market. It is aimed to highlight the usefulness of polymers derived from IBMC in three high-volume sectors: **industrial coatings, hot melt adhesives and biomedicine (catheters).**

EXPECTED IMPACT

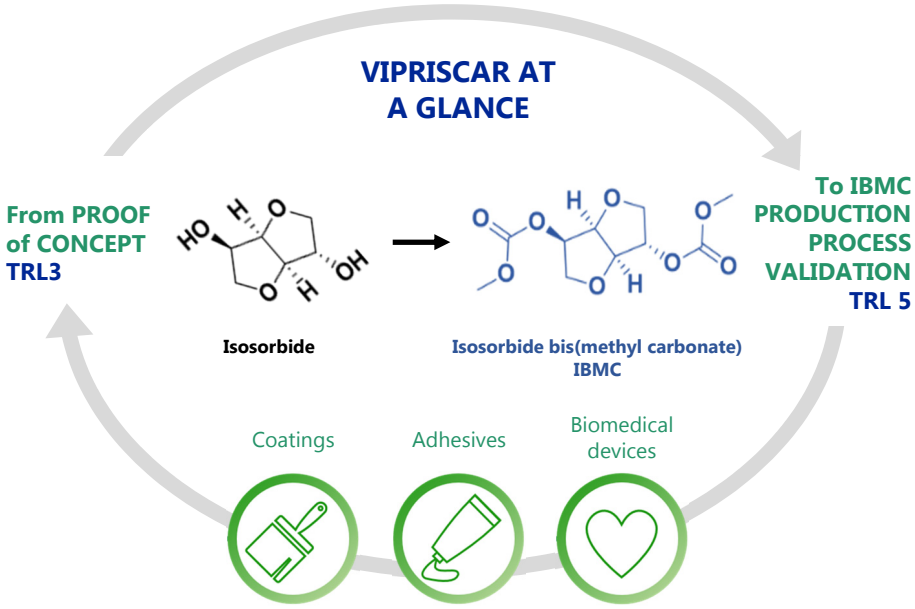
- Move the production process from the proof of concept (TRL 3) to a validation in laboratory environment (TRL 4).
- Validate isosorbide bis(methyl carbonate) (IBMC) production process in a relevant industrial environment (TRL 5).
- Develop polyurethane dispersions (PUDs) based on IBMC-derived materials for different applications (coatings, adhesives, bio-medicine).





IBMC is an intermediate with great market potential because it has been designed to produce new polyols, polycarbonates, and non-isocyanate polyurethanes, materials whose market is estimated to exceed $100,000 M in the year 2021.

The aliphatic bicyclic structure of IBMC, as well as its renewable and biodegradable origin, suggests that IBMC could replace toxic aromatic petroleum derived molecules currently used as bisphenol-A and MDI and TDI diisocyanates.



For this purpose, an international consortium has been established by 9 partners from 6 European countries.

The industrial participation represents 66.6% (6 partners) of the consortium, 2 are large companies (JOWAT, CIKAUTXO) and 4 SMEs (B4PLASTICS, AEP POLYMERS, VERTECH, and EXERGY).

The consortium is completed by three Spanish technology providers: TECNALIA, GAIKER, and LEITAT.

More information and contacts

- **VIPRISCAR web page**: www.vipriscar.eu
- **Project manager:** Dr. Soraya Prieto (soraya.prieto@tecnalia.com)
- **Technical coordinator:** Dr. José R. Ochoa-Gómez (jramon.ochoa@tecnalia.com)

VIPRISCAR has received funding from the Bio Based Industries Joint Undertaking (JU) under the European Union's Horizon 2020 research and innovation programme under grant agreement No 790440.

The JU receives support from the European Union's Horizon 2020 research and innovation programme and the Bio Based Industries Consortium