

# Global chemical industry shifts focus towards developing "green" routes to acrylic acid

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The state of the evolving bio-based acrylic acid industry is discussed in Nexant's Bio renewable Insights report on bio-based acrylic acid. Two strategic partnerships have been established for the bio-based production of acrylic acid via 3-hydroxypropionic acid. One partnership is between Novozymes, Cargill and BASF, whereas the other is between OPXBio and Dow. These partnerships rely heavily on the know-how and assets that each individual company brings to the partnership. Novozymes and BASF can leverage Cargill's experience in and access to the agri-business to aid technology development and secure appropriate feedstock/raw material sourcing. Larger partners, such as BASF or Dow can provide funding, industry experience, as well as design capability for downstream processing and purification of the product. Arkema and Nippon Shokubai have invested heavily into the development of a route to produce acrylic acid from glycerol/glycerin.

Notably, this technology is for their own implementation because neither company intends to licence it. After reported success at the pilot scale, the further advancement and implementation of this route hinged on the availability and cost of glycerol/glycerin, which was impacted by legislative reforms regarding bio-fuels production, of which glycerol/glycerin is produced as a byproduct. Novomer is pursuing a bio-adaptable route to acrylic acid that utilizes proprietary catalysts developed to produce polypropiolactone from ethylene oxide, which can be bio-based or petrochemicals-based, and carbon monoxide. Polypropiolactone can then be converted to glacial acrylic acid via pyrolysis. This route to acrylic acid presents a unique technology position, allowing Novomer's potential facilities to operate simultaneously in the bio-based as well as petrochemical-based sectors.

*SOURCE Company Report*