



THE EVOLUTION OF EPOXY

A CAS ANALYTICS PERSPECTIVE



With a broad range of industrial applications from metal coatings to electronics components, epoxy is central to everyday life. Relevant to many industries, epoxy has grown to be a global enterprise and is consumed in virtually every corner of the world.

The intellectual property (IP) landscape around epoxy is no different. Prior to 1990, organizations from only 34 countries filed patents related to epoxy. Between 2011 and 2016, there were 61 different countries involved in the epoxy IP space.

An interesting feature of the epoxy IP landscape is that it mirrors consumption across the globe. Patents are filed predominantly by nations from the Asia Pacific region, whose share of the global IP landscape is growing (Figure 1). The U.S. has the next largest share of the epoxy patent landscape, followed by Europe. Both of these regions and the rest of the world have given ground to the Asia Pacific region over the last decade.

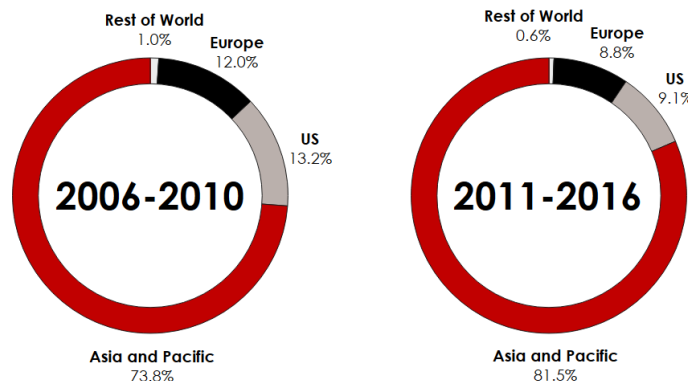
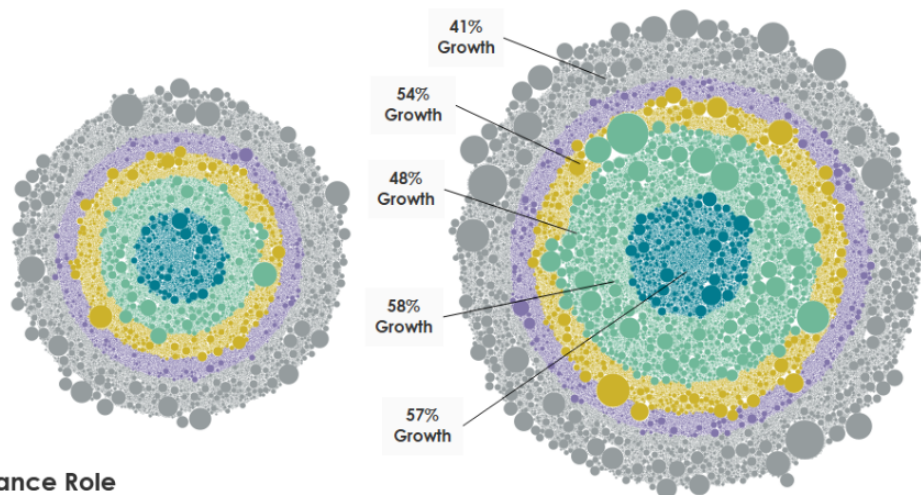


Figure 1: Regional share of the epoxy patent landscape (Source: CAS content collection)

With more nations competing for a share of the epoxy marketplace, it is no surprise that this space is becoming crowded from a chemistry perspective. Figure 2 illustrates how other chemical substances involved in epoxy-related patents have evolved over time. Each substance is represented by a single node and sized by the number of patent applications containing the substance. This analysis highlights how the “constellation” of chemical substances involved in epoxy IP has grown by nearly 50% over the last decade.

2006 to 2010 47,492 Substances

2011 to 2016 69,447 Substances



- Substance Role**
- Physical, Engineering or Chemical Process
 - Modifier or Additive Use
 - Polymer in Formulation
 - Industrial Manufacture
 - Technical or Engineered Material Use

Figure 2: Growth in substances across epoxy-related patent filings (Source: CAS content collection)



Growth in the number of substances was generally similar across the various roles, with the growth of Technical and Engineered Material Use being the lowest at 41%. This growth rate reflects an increasingly complex patent landscape with more chemical substances entering an already crowded space.

Innovation across nations in the epoxy space reflects the diverse marketplace. Figure 3 illustrates the primary applications referenced in epoxy patent filings from major nations across the globe. Serving such a diverse global market requires innovative sourcing and production to remain competitive.

CAS is ready to partner with epoxy industry stakeholders to help them advance competitiveness, overcome industry challenges and drive strategic innovation by leveraging our content, technology, and expertise.

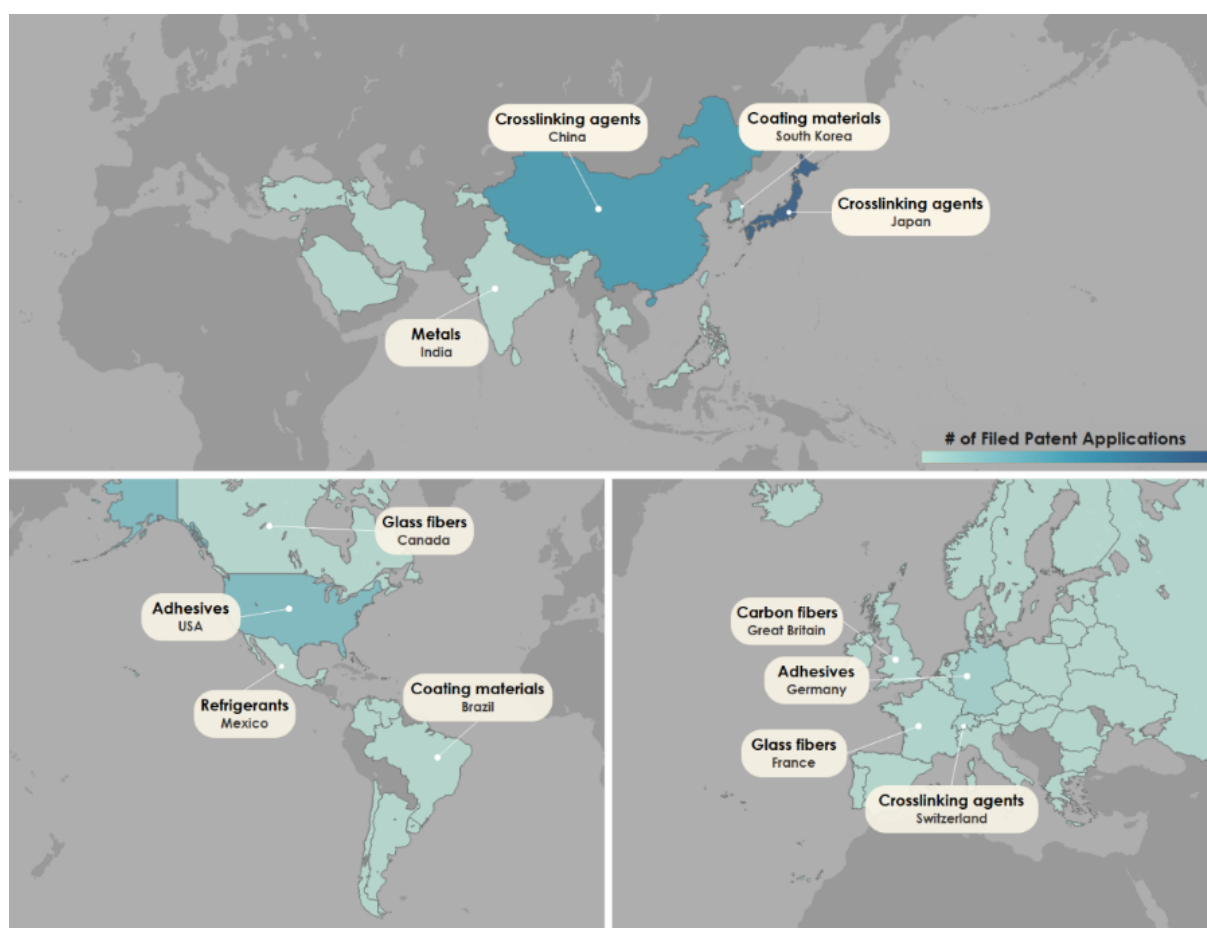


Figure 3: Primary applications of epoxy patents in key nations (Source: CAS content collection)

About CAS

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