

# **EPOXY ADHESIVES – “THE WORKINGMAN’S GLUE”**

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Since their inception in the early 1950s, epoxy based adhesives have become the most recognizable structural adhesive type and have found commercial success in demanding applications such as aerospace, automotive, electronics and do-it-yourself, among many others. Epoxies are usually the first adhesive considered whenever a demanding application is required.

Adhesives represent a rather small percentage of the total consumption of epoxy resins. In the US, epoxy resins used for adhesive formulations represent only 4.4% of consumption of epoxy resins, while coatings account for over 55%. However, when it comes to value add, epoxy based formulated adhesives represent over 6% of the total value in-use.

While the market for epoxy adhesives is a finite market, epoxy chemistry enjoys a special place in the mindset of most people who know at least something about adhesives. Generally, users of epoxies consider these materials to be among the “strongest”, “toughest” and most “versatile” adhesives. However, we are getting ahead of ourselves. Like many markets, epoxy adhesives are not one single market, but comprised of the sum of many individual end-use market segments where epoxy adhesives have settled into a relatively stable market position.

The US market for epoxy adhesives is estimated to be just under 200 million pounds spread across a broad base of end use markets, including consumer DIY where most people are first exposed to the amazing versatility of epoxy chemistry for adhesives. However, despite epoxy adhesives finding use in many fragmented markets, actual consumption in volume is quite surprisingly highly concentrated in a few specific end use market segments followed by a large fragmentation into dozens of less important end use markets. Automotive Assembly applications approach 50% of the total volume of epoxy adhesives consumed in the U.S.



## US Epoxy Adhesive Volumes by Market Segment

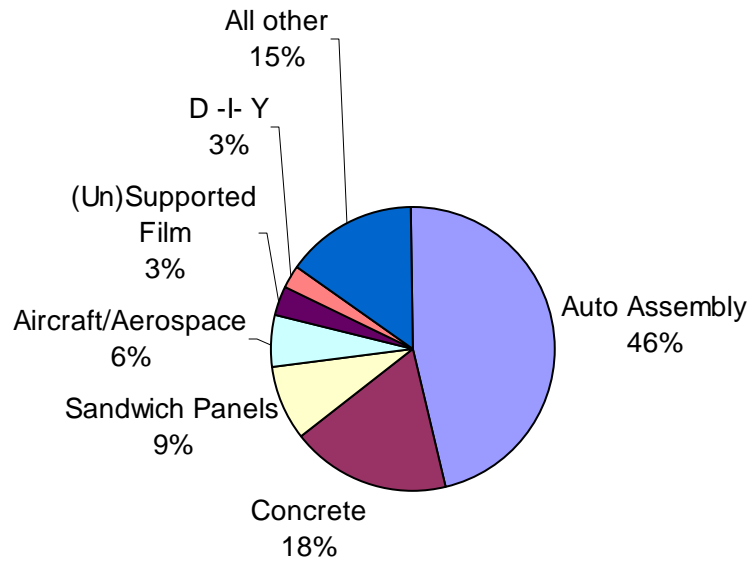


Chart 1

Clearly, the *VALUE* of epoxy adhesives consumed in these market segments varies widely and adhesive suppliers have successfully marketed this value where possible. The value of epoxy adhesives in some of the smaller market segments such as electronics or some product assembly applications can command very high unit volume pricing. However, the formulator of the adhesives has been the financial beneficiary of this specialization and niche marketing. Raw materials suppliers have generally been “corralled” into specific value perceptions, due to their more distant understanding of the total value chain.

Similarly, examination of consumption by the form of epoxy adhesives reveals some additional surprises.



## Epoxy Adhesives, US by Formulative Technology

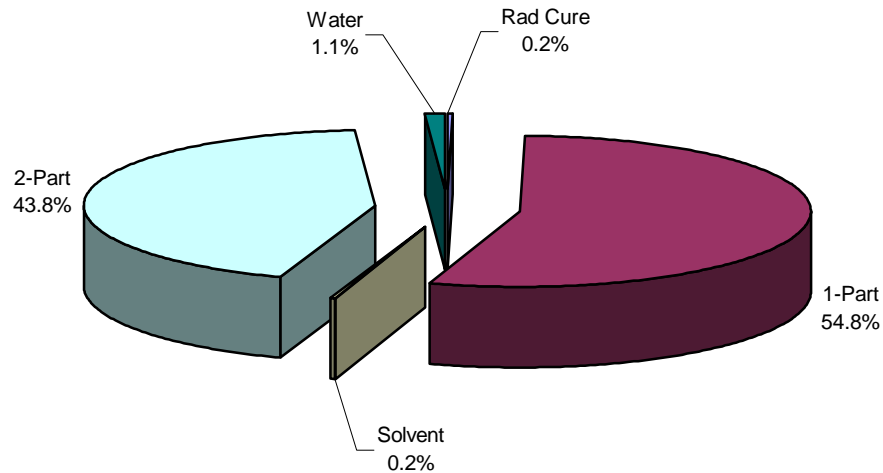


Chart 2

Single component formulations are the largest representing about 55% of consumption, while two-component formulations account for another 44% of total volume. Water based, solvent based and radiation cure formulations collectively represent less than 2%.

Epoxy adhesives were one of the first true structural adhesives and have earned their reputation as "the workingman's glue" time and time again.



## About the Author



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Bob joined ChemQuest in 1999 with 27 years experience in the Adhesives, Sealants and Coatings Industry. Prior to joining ChemQuest, he served as Business Manager and New Business Development Manager of Ashland Specialty Chemical Polymers & Adhesives Division. He brings with him extensive knowledge and experience in developing high-productivity sales and marketing teams, developing business processes, market assessment, competitive analysis and business modeling. His primary strategic focus has been in catalyzing growth through internal initiatives as well as business and technology acquisition, licensing and partnerships. He holds a B.S. in Chemical Natural & Synthetic Polymer Chemistry from SUNY College of Environmental Science & Forestry. Call Bob at (614) 792-3673.

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