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Industrial roots of green chemistry and the history of the BHC Ibuprofen invention and its quality inspirations

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Conventional wisdom and published histories of “Green Chemistry” describe its start as being a result of governmental and/or regulatory actions at the US “Environmental Protection Agency” (EPA) during the early 1990’s. But there were many Real World industrial examples of environmentally friendly commercial processes in the oil and commodity chemicals industries for decades prior to the 1990s. Some early examples of commercial “Green Chemistry” are briefly described in this article. The “Boots/Hoechst Celanese” (BHC) ibuprofen process was one of the earliest multiple-award-winning examples of industrial “Green Chemistry” in the fine chemical/pharmaceutical industry. The author, who conceived the BHC Ibuprofen synthetic strategy in 1984, reveals that the BHC ibuprofen process was not primarily a result of governmental or regulatory mandates or environmentalist or political motivations. The BHC ibuprofen process and probably many other early industrial “green” inventions evolved from and their development and commercialization motivated and guided by a long prior industrial culture of both scientific and technical evolution. The invention and commercialization of these early industrial commercialized processes and the BHC ibuprofen process were also guided by both competitive and economic market needs, personal human motivations and a low waste culture of “Quality” and “Continuous Improvement” that the commodity chemical industry internally promoted in the 1980’s. The author recommends that young green chemists and/or green engineers reconsider “Quality” approaches in order to genuinely lead Society toward a Greener future.

Biography

Mark A. Murphy, Ph.D., J.D. was born in Texas, earned a B.S. degree with Honors in Chemistry from Tulane University and a Ph.D. in Organometallic Chemistry from the University of Wisconsin-Madison in 1982. Mark worked at Celanese (later Hoechst Celanese) in Corpus Christi Texas from 1983 until 1993. Mark began Law School at the University of Texas-Austin in 1995 and graduated in 1998. Mark joined Needle & Rosenberg P.C. of Atlanta in 1998, where he practiced patent and IP law and was promoted to Partner in 2006. In 2007 Mark left to join Merchant & Gould’s Atlanta office as a Vice President. In 2008 Mark left Merchant & Gould to found UVLAW Patents LLC, where he practices the patent, IP and business law. Mark has a 2nd home in the mountains of North Carolina and engages in a variety of indoor and outdoor hobbies, including riding and maintaining a motorcycle.

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