

# The Origin of “Vinyl”

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## Question

Where does the term “vinyl” come from? Though it permeates polymer chemistry and has even taken on a cultural meaning (i.e., something cheap, plastic, or slick), the organic and polymer texts I have consulted are silent as to its origins.

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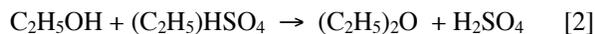
## Answer

The term “vinyl” is ultimately derived from the Latin *vinum*, meaning “wine” (*Wein* in German, *vin* in French) and was first applied in chemistry in the early 19th century to describe ethanol or wine alcohol (*Weingeist* in German, *esprit-de-vin* or *alcool vinique* in French).

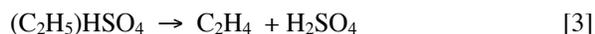
In 1809 von Vogel discovered a compound of ethanol and sulfuric acid,  $(\text{C}_2\text{H}_5)\text{HSO}_4$ , now known as ethyl hydrogen sulfate, but which was called “sulphovinic acid” (*Weinschwefelsäure* in German and *acide sulfovinique* in French) during the 19th century, in honor of its preparation from vinic alcohol (1, 2):



Depending on the conditions, this compound will either decompose into diethyl ether:



or into ethene gas:



Since the ethene produced in reaction 3 was derived from sulphovinic acid and ultimately from vinic alcohol, Gmelin suggested in 1848 that it be called *Vine* or *Vinegas* (3). The final step was taken in 1854 when Kolbe (figure 1) proposed the name “vinyl” for

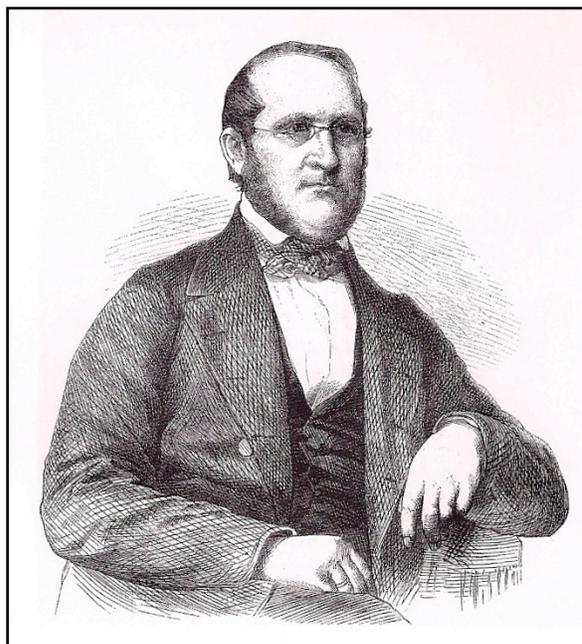


Figure 1. Adolf Wilhelm Hermann Kolbe (1818-1884).

the monovalent radical,  $\text{C}_2\text{H}_3\cdot$ , of this gas (4), whence the names of its various derivatives: vinyl alcohol ( $\text{C}_2\text{H}_3\text{OH}$ ), vinyl chloride ( $\text{C}_2\text{H}_3\text{Cl}$ ), polyvinyl chloride (PVC), etc.

## Literature Cited

1. A. Bouchardat, *Cours de chimie élémentaire*, Germer-Baillière: Paris, 1835, p. 722.
2. L. Gmelin, *Handbook of Chemistry*, Vol. 8, Cavendish Society: London, 1853, pp. 415-428.
3. L. Gmelin, *Handbuch der organischen Chemie*, Vol. I, Winter: Heidelberg, 1848, pp. 520-526.
4. H. Kolbe, *Ausführliches Lehrbuch der organischen Chemie*, Vol. 1, Vieweg: Braunschweig, 1854, pp. 345-368.

*Do you have a question about the historical origins of a symbol, name, concept or experimental procedure used in your teaching? Address them to Dr. William B. Jensen, Oesper Collections in the History of Chemis-*

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