

Railroads and Chemicals

Summary

Producers and consumers of chemicals need a safe, efficient, and cost-effective national transportation system, which is what railroads provide. In 2019, Class I railroads originated 2.2 million carloads of chemicals (7.8% of total carloads — third behind coal and intermodal) carrying 180.7 million tons (11.5% of total tons originated — second only to coal) and yielding \$11.2 billion in gross revenue (15.2% of total gross revenue, second behind intermodal).

Overview of Chemicals

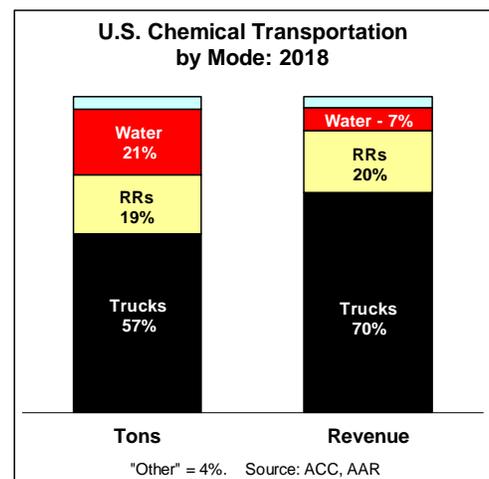
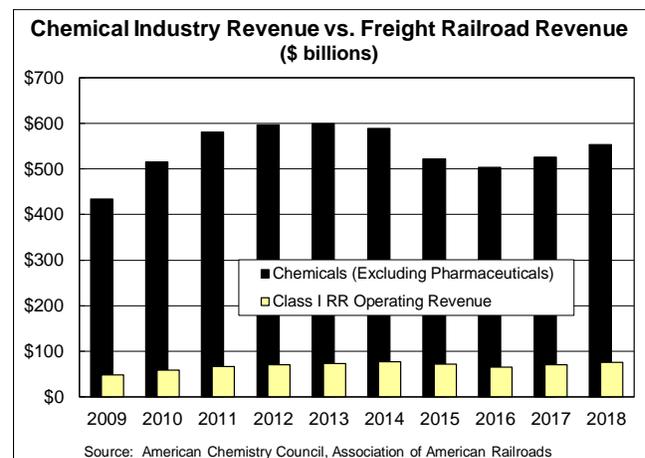
Chemicals consists of thousands of distinct products classified under the Standard Transportation Commodity Code (STCC) 28 — mainly STCC 281 (industrial chemicals); STCC 282 (plastics); and STCC 287 (fertilizers and other agricultural chemicals).

Because most chemicals are used in the production of other goods, the chemical industry's fortunes tend to rise and fall with the overall economy, especially manufacturing. The chemical industry's revenue of \$553 billion in 2018 (excluding pharmaceuticals) was more than seven times the revenue of the U.S. freight railroad industry.

Although the U.S. chemical industry consists of thousands of firms located throughout the country, many plants are concentrated in the Gulf States (where petroleum and natural gas raw materials are readily available), the Delaware Valley, and the Midwest.

Chemical Transportation

Because end users of chemicals are spread throughout the country, huge volumes of chemicals are shipped each year. According to the American Chemistry Council (ACC), some 970 million tons of chemicals were shipped in the United States in 2018 at a cost of \$55.7 billion. In 2018, transportation costs were 10.1% of the value of chemical industry shipments.



In 2018, trucks accounted for 57% of chemical tonnage shipped and 70% of chemical transportation costs, while water transport accounted for 21% of tonnage and 7% of transportation costs. Pipelines and air transport accounted for 4% of tons and costs. The remainder — 19% of tonnage and 20% of chemical transportation costs — is attributable to rail.

In 2019, chemicals accounted for 7.8% of originated carloads, 11.5% of originated tonnage, and 15.2% of gross revenue for U.S. Class I railroads.

In 2019, U.S. Class I railroads originated 2.2 million carloads and 180.7 million tons of chemicals. The highest-volume chemical carried by U.S. railroads is ethanol. More than half of all rail chemical tonnage consists of various industrial chemicals, including soda ash, caustic soda, urea, sulfuric acid, and anhydrous ammonia. Plastic materials and synthetic resins account for more than 25% of rail chemical tonnage. Most of the rest is agricultural chemicals.

Today, only intermodal accounts for more rail revenue than chemicals. Class I gross revenue from chemicals was \$11.2 billion in 2019 (15.2% of total gross revenue), though rail revenue from transporting chemicals is only equal to about 2% of U.S. chemical industry revenue.

