

Prices and People

Chemical Profile: Caustic Soda

Caustic Soda

May 8-14, 2006

Producer	Capacity*
American Azide, Cedar City, Utah	2
Bayer Material Science, Baytown, Tex.	380
Dow Chemical, Freeport, Tex.; Plaquemine, La.	5,080
Erco Worldwide, Port Edwards, Wis.	55
FMC, Green River, Wyo.	65
Formosa Plastics, Point Comfort, Tex.	1,000
GE Plastics, Burkville, Ala.; Mount Vernon, Ind.	205
Georgia Gulf, Plaquemine, La.	450
Georgia Pacific, Green Bay, Wis.; Muskogee, Okla.; Rincon, Ga.	25
Occidental Chemical, Convent, La.; Geismar, La. and Wichita, Kan.; Niagara Falls, N.Y.; Taft La.	2,800
Olin Chlor-Alkali Products, Augusta, Ga.; Charleston, Tenn.; McIntosh, Ala., Niagara Falls, N.Y.	1,400
OxyVinyls, Deer Park, Tex.; LaPorte, Tex.	1,100
Pioneer Americas, Henderson, Nev.; St. Gabriel, La.	390
PPG, Lake Charles, La.; Natrium, W. Va.	2,050
Sunbelt Chloralkali, McIntosh, Ala.	275
Vulcan/Mitsui, Geismar, La.	210
Westlake, Calvert City, Ky.	135
TOTAL	15,622

*Thousands of short tons per year of caustic soda (100% NaOH basis). Nearly all caustic soda is generated by the electrolysis of sodium chloride solution using one of three cell types: mercury, diaphragm or membrane. The electrolysis process produces 1.1 tons of 50% caustic soda with each ton of chlorine.

Nearly all caustic is produced as 50% aqueous solution. Less than 2% is produced in the solid, anhydrous form.

American Azide is a subsidiary of American Pacific Corporation. OxyVinyls is a 76/24 joint venture between Occidental Chemical Corporation and PolyOne Corporation. Sunbelt Chloralkali is a 50-50 joint venture between PolyOne and Olin Corporation. Vulcan/Mitsui is a 51/49 joint venture between Vulcan Chemicals and Mitsui & Co.

Shintech is constructing an integrated VCM plant in Plaquemine, La., which will include a chloralkali plant with a caustic soda capacity of 1.1 billion pounds. The first stage of the project is anticipated to start up later this year, with the caustic soda capacity at 660 million pounds. The project should be completed sometime in 2007.

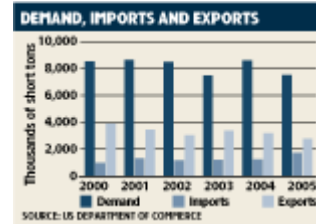
In September 2003, Formosa Plastics shuttered its 250,000 ton caustic soda facility at Baton Rouge, La. Occidental Chemical's caustic soda facilities in Delaware City, Del. and Deer Park, Tex. were permanently shut down in the third quarter of 2005, eliminating a combined annual capacity of 800,000 tons.

In 2005, Occidental Chemical acquired Vulcan Materials Company and with it, caustic soda plants in Geismar, La. and Wichita, Kan. with a combined capacity of 600,000 tons. A third caustic soda plant that was owned by Vulcan was subsequently sold by Occidental to Erco Worldwide. The plant in Port Edwards, Wis. has a capacity of 55,000 tons.

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DEMAND

2004: 8.619 million short tons; 2005: 7.552 million tons; 2009: 8.015 million tons, projected. Demand equals production plus imports (2004: 1.244 million tons; 2005: 1.739 million tons) less exports (2004: 3.207 million tons; 2005: 2.791 million tons).



GROWTH

Historical (2000–2005): -2.5% (negative) per year. Future: 1.5% per year through 2006.

PRICE

Historical (2000–2005): High, \$530 per ton, contract, liq. 50%, sellers tanks. f.o.b. Gulf Coast, frt. equald.; low, \$48, same basis. Current: \$375 to \$425, same basis.

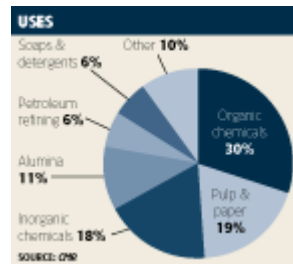


USES

Organic chemicals, 30%; pulp & paper, 19%; inorganic chemicals, 18%; alumina, 11%; petroleum refining, 6%; soaps & detergents, 6%; miscellaneous, including water treatment and textiles, 10%. Source: CMR

MARKET PERSPECTIVE

The growth in chloralkali capacity has been minimal due to poor profitability, leading to a much tighter market, beginning in 2004. As a result, pricing increased steadily through 2005, producing record-high contract pricing of \$530 per ton in November and December.



Rising energy bills and loss of competitiveness in exports to Asian markets have had their impact too. As a consequence, U.S. imports have been growing while exports have been in decline. Significant in the export decline has been the reduction of exports to Australia, where caustic soda is used in the production of alumina. The US accounted for half of the imports in the mid-1990s but this had fallen to 9% in 2003.

Demand for caustic soda in chemical production is strong, led by propylene oxide and polycarbonates in the organics sector and titanium dioxide and alumina among the inorganics. Recovery in the pulp and paper industry is also driving the caustic soda market.

OUTLOOK

Growth for caustic soda over the forecast period is projected to be 1.5% per annum. With no large capacity additions anticipated, the market should remain balanced, but tight. Continuing high energy costs will encourage greater quantities of caustic soda to be imported, while discouraging exports.

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