

## Detergents in the Arab World

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### ABSTRACT

The Arab world is increasing its consumption and production capacity of household detergents and its raw materials. The consumption of detergents, now about 400,000 tons annually, is expected to reach 900,000 tons in 1990. Detergent formulations follow European patterns and are primarily of the heavy duty foam type. Some international brands are produced under license, and more international brands are expected to be produced in the future. Most raw materials have been imported, but new plants are being built to produce LAB, sodium tripolyphosphate and sodium sulfate.

### INTRODUCTION

The Arab world extends from the Atlantic Ocean on the west to the Arab Gulf on the East, and from latitude 40° north and the southern part of the Mediterranean Sea on the north to the equator on the south. The distance from Casablanca in Morocco to Muscat in Oman is about 7,500 km, about 1.5 times the distance from Lisbon to Helsinki. Climatic conditions vary from cold winters in the north to moderate seasons in the Mediterranean area, to hot and very hot in the south for most of the year.

The Arab World is inhabited by about 169 million people in 21 different countries. Thus, its population is equal to about half that of Western Europe. However, the 21 nations share a common language—Arabic.

Soap was discovered more than 2,000 years ago in the Arab region by ancient Egyptians and Babylonians. The basic procedure for producing soap has remained essentially the same. Synthetic detergents were introduced about the end of the 1930s and early 1940s in some Arab countries—Egypt, Syria and others—for use in textile industries. Household powdered detergents came onto the market in the late 1950s. Some Gulf States entered the household detergent production era without passing through a soap production era.

Hard bar laundry soap dominates in many Arab countries, among them Egypt, Syria and Sudan, while detergents lead in other countries, such as Saudi Arabia, Kuwait, the United Arab Emirates and Libya. The expectation is that detergent use will advance in most Arab countries and bar soap use will decline, following the same progression that occurred in many Western European countries.

Hand washing of laundry, still used in many countries where hard bar soap is traditional, is being displaced by detergents. Simple top-loading washing machines are popular and widespread in many countries. These inexpensive machines tolerate high-foam detergents without any problems. Fully automatic washing machines are used not only in the oil-rich countries, but are becoming increasingly popular in other countries.

Simple top-loading washing machines have been manufactured in the region at a reasonable rate, and the manufacture of fully automatic washing machines has begun in the area.

### CONSUMPTION FORECAST

The overall consumption of detergents in the Arab countries

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for the years 1974 through 1978 is given in Table I. Consumption increased from 130,000 tons in 1974 to 277,000 tons in 1978. This represents an increase in per capita consumption from 0.94 kg in 1974 to 1.81 kg in 1978.

Detergent consumption in 1982 was about 418,000 tons, an estimate based on data available for some countries and on estimated figures for others. By 1990, detergent consumption is expected to be 953,000 tons, equivalent to a per capita consumption of 4.6 kg. This is less than the per capita consumption in Western Europe, indicating there is room for future increases in detergent consumption.

The 21 Arab countries can be divided into four geographic regions: the Western North Africa region (Morocco, Algeria, Tunisia and Libya); the Central region (Egypt, Sudan and Somalia); the Eastern Mediterranean region (Syria, Lebanon and Jordan), and the Arab Peninsula and Gulf region (Saudi Arabia, Yemen A.R., Yemen PDR, Oman, United Arab Emirates, Qatar, Bahrain, Kuwait and Iraq).

Table II shows detergent consumption for each region. The Arab Peninsula and Gulf region is expected to have the highest increase in total consumption between 1982 and 1990, when consumption is expected to reach 388,000 tons, an increase of 171%, with per capita annual consumption rising to 10.6 kg. This will be the highest per capita consumption in the area. Total consumption in the Western North Africa region ranks second at an expected 300,000 tons in 1990, an increase of 71% from 1982. The total consumption in the Central region is expected to reach 193,000

**TABLE I**  
Household Detergent Consumption in the Arab World

Year	Population (millions)	Consumption (000 tons)	Per capita (consumption kg)
1974	138.7	130	0.94
1975	142	149	1.05
1976	145.5	190	1.3
1977	149.4	215	1.44
1978	153	277	1.81
1982 E	169	418	2.4
1990 E	209	953	4.6

E = Estimated.

**TABLE II**  
Detergents Consumption by Geographical Regions (thousands of tons)

Region	1974	1978	1982	1990(E)	% increase 1982-1990
Western North Africa	52	110	175	300	71%
Central	20	27.6	61	193	216%
Eastern Mediterranean	18	22	42	80	90%
Arab Peninsula & Gulf	40	118.4	140	380	171%
Total	130	277	418	953	128%

E = Estimated.

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tons, representing an increase of 216% in 1990 compared to 1982.

Production capacity of powdered detergent plants in the Arab countries is estimated at 750,000 tons as of 1983. This means that either new capacity has to be created by 1990 or more detergent will have to be imported. There are at least 40 manufacturing plants with spray drying towers. More than 10 additional plants are either under construction or in the final planning stages.

### FORMULATIONS OF HOUSEHOLD DETERGENTS

The composition of household detergent used in the Arab world is similar to the types used in Europe. A high-foam heavy duty detergent with the following average composition represents the most commonly used products:

#### High-foam Household Detergent

Active matter (LAS)	18 - 25%
Sodium tripolyphosphate	20 - 30%
Sodium silicate (100%)	4 - 12%
CMC	1 - 2%
STS	1 - 3%
Optical brightener	0.1 - 0.3%
Sodium carbonate	0 - 10%
CMEA	0 - 2%
Perfume	0.1 - 0.2%
Moisture	6 - 10%
Sodium sulfate	balance to make up 100%

The low-foam powdered detergent is starting to be used although it is predominant only in a few markets, such as Kuwait. Its composition is similar to that of its European counterparts. The active matter is composed of anionics, nonionics and soap, but it contains a higher percentage of phosphate than the present European products.

Sodium perborate generally is present in the same ratio as in the European formulae. However, zeolites are not used.

Liquid detergent has been used a long time in industry and in small percentages in private households. Use has in-

creased recently and is expected to grow.

Some international detergent brands are manufactured under joint license or as joint ventures. Expectations are that others will follow.

### RAW MATERIALS SITUATION

The demand for detergents in the Arab countries is increasing and will pass a million tons annually by the end of the century. This big quantity requires joint efforts to produce the required raw materials. Although the major portion of detergent raw materials is now imported, some raw materials are produced locally. Looking at the raw materials situation we find the following:

**Linear alkyl benzene (LAB):** A 40,000-ton plant is scheduled to start production during the third quarter of 1984 in Egypt; Iraq has constructed a new plant to produce 50,000 tons LAB annually.

**Sodium tripolyphosphate (STPP):** STPP has been produced in Tunisia for several years; Iraq is planning to produce 50,000 tons a year. STPP will have to be imported to the Arab region for at least the next 5 to 10 years. The Iraqi plants for LAB and STPP are to be financed by the Arab Petroleum Investment Corporation, which is a subsidiary of the Organization of the Arab Petroleum Exporting Countries.

**Sodium silicate:** Sodium silicate is in better supply than other raw materials, being produced locally in Egypt, Iraq and Saudi Arabia. Other countries, however, still import sodium silicate.

**Sodium sulfate:** Although sodium sulfate is produced in Egypt, production is not sufficient to meet demand. A project to produce 100,000 tons from natural lakes is under way in Egypt.

**Sodium carbonate:** This is produced in Egypt by the solvay process, but not in other countries.

**Sulfur:** Sulfur is produced in major quantities in Saudi Arabia and Iraq and is exported.

**Sodium toluene sulfonate:** Egypt manufactures STS and exports some to other Arab nations.

**CMC, optical brighteners, sodium perborate and coconut monoethanol amine** all are imported.

## Vista debuts

Conoco Chemicals has sold part of its operations to a new group, Vista Chemical Company, which officially began operations in July. Several AOCS members now are affiliated with Vista, including Michael Cox, Ted Matson, Steve McGuire, Charles Starks and D. Wharry.

Vista Chemical consists of Conoco Chemicals Company assets purchased from the Du Pont Company by an investment group headed by executives of Conoco Chemicals. The new company, a privately held corporation with headquarters in Houston, Texas, manufactures large volume commodity and specialty chemicals.

According to Vista's president and chief executive officer, John D. Burns (former executive vice president of Conoco Chemicals), there are over 35 former Conoco Chemicals managers who now are members of Vista and are actively involved in the day-to-day operations of the new company. He said no substantive changes are planned in

the company's operations and product lines in the near future.

## Happi list

A recent survey in Happi magazine listed the top 50 U.S. companies making household and personal products and industrial and institutional products. Those ranked in the top 10, by sales volume, were Procter and Gamble (\$9.45 billion), Colgate-Palmolive (\$3.42 billion), S.C. Johnson (\$2.1 billion), Avon (\$1.88 billion), Lever Brothers (\$1.565 billion), Bristol-Myers (\$1.37 billion), Revlon (\$1.12 billion), Estee Lauder (\$1.08 billion), Lehn and Fink (\$715 million) and Chesebrough-Pond (\$706 million).

Amway was thirteenth at \$678 million, Economics Lab fourteenth with \$659 million, Clorox seventeenth with \$594 million and Armour-Dial twentieth at \$475 million. Beecham was No. 21 (\$466 million), Johnson and Johnson No. 37 (\$230 million), Texize No. 38 (\$229 million) and Shaklee No. 44 (\$120 million).

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### Ag chemical report

The value of surfactants used in agricultural chemicals grew more than fourfold between 1977 and 1982, according to data from the U.S. Department of Commerce.

The 1977 Census of Manufacturers reported surfactants worth \$9.2 million were used in producing agricultural chemicals. Total value of all materials used to produce ag chemicals in 1977 was estimated at \$1,210 million. In the 1982 Census of Manufacturers, value of surfactants used was listed at \$44.6 million, with total costs for all materials listed at \$2,121 million. Quantity of surfactants used was not reported in the preliminary report, released this summer.

The value of surfactants used showed a more rapid rise than any other material cost.

Total value of agricultural chemicals produced in 1982 was listed at \$4.8 billion.

### News briefs

#### Loeb Promoted

Melvin L. Loeb, a member of AOCS, has been appointed director of research for Stepan Company. He joined Stepan in 1978 and most recently was manager of research. Dr. Loeb received his masters and Ph.D. degrees in chemistry from MIT and completed his MBA at the University of Chicago.

Stepan Company, based in Northfield, Illinois, is a producer of basic and intermediate chemicals used in household, industrial, personal care, agricultural and energy-related products.

#### Emery Expands

Emery Industries is doubling its molecular distillation capacity in response to growing demand for higher purity dimer acids, according to a company spokesman.

The molecular distillation process produces high dimer content versions from commercial dimer acids. The addition follows an overall increase in dimer production capacity as part of Emery's recent \$54 million expansion at the Cincinnati plant.

### Ashland Acquisition

Ashland Chemical Company has bought KCL Fluids, Inc., a Tyler, Texas-based marketer and distributor of specialty chemicals and products used by oilfield service companies in the Southwestern US. KCL Fluids produces custom-blended industrial grade potassium chloride used for stimulating oil well production.

Ashland Chemical president J. A. Brothers says the acquisition fits the company's plan to base its growth on existing strengths in specialty chemicals and chemical distribution. Ashland Chemical is the largest distributor of industrial chemicals and solvents in the US.

### Glyco Moves

Glyco Inc. is moving its corporate headquarters from Greenwich, Connecticut, to Norwalk, Connecticut. Thomas B. Davis, president of Glyco, said the move is to meet the expanding needs of a growing business.

Glyco is a privately held, 57-year-old company which produces and markets a broad line of specialty chemicals derived primarily from animal fats and vegetable oils.

### Call for Papers

A call for papers has been issued for the 14th I.F.S.C.C. International Congress, to be held in Barcelona, September 16-19, 1986. The conference, organized by the Spanish Society of Cosmetic Chemists, will address the issue of "Cosmetic Science: New Trends in Research and Technology." For more information, contact: General Secretary, c/o Jorge Girona Salgado, 18-26, Edificio Juan de la Cierva, Barcelona-34, Spain.

### Bryce Elected

The Society of Cosmetic Chemists, U.K., has elected D. M. Bryce as president for its 1984/85 year with J. D. Middleton as vice president. Immediate past president G. L. Banks reported increased attendance at meetings during the past year.