



CHEMICAL REACTIONS

A Survey of the Chemicals, Pharmaceuticals & Paints sector

The chemicals sector was once considered to be in the forefront of Greek industry. Today it is rapidly downsizing and struggling to survive.

The basic industries produce fertilisers, acids and petrochemical feedstocks. When they were established in the early

1960s, they were expected to generate ancillary investment.

But there is only a limited amount of agrochemical formulation and some pharmaceutical manufacturing. No active ingredients are produced in Greece and there is no fine chemicals industry to produce exipients. ►

In 1990, there were 165 companies in the sector employing 11,892 people, according to the business information company ICAP. By 1993, the number had fallen to 138 (down 16.4 per cent) employing 7,394 people (down 37.8 per cent).

There is high concentration. In 1992, the top 15 companies accounted for 65.3 per cent of total assets and 69.9 per cent of total net income. These figures do not include EKO Chemicals, associated with the refinery of the same name at Thessaloniki, which ICAP categorises under the refining sector.

The first Panhellenic Socialist Movement government tried to create a national pharmaceuticals industry to serve a national health service but it never got beyond the stage of producing copy products and introduced unfair competition which led to the rundown of the existing pharmaceuticals manufacturing base. It was finally wound up under pressure from the European Commission's competition authorities. Biochemistry and genetic engineering remain academic pursuits.

Because the chemicals sector is polluting, there is intense concern about its impact on the environment.

The bulk of European Union legislation deals with safety standards regarding toxicity and control of emissions. Greek governments by and large apply EU quality and safety standards but the incorporation of directives into Greek law has been erratic and slow.

Greek chemical companies formed the **Hellenic Chemical Industries Association** only in 1994. It is intent on securing introduction of the so-called Responsible Care programme, whereby companies take the lead in protecting the environment. It hopes by doing so, to finesse the introduction of overly restrictive legislation.

TABLE 1: Chemical production in Greece

<i>tonnes '000; unless otherwise specified</i>					
	1988	1989	1990	1991	1992
Salts	364.3	615.4	637.5	622.8	664.9
of which					
ammonium nitrate	...	118.1	116.2	127.3	62.5
calcium ammonia nitrate	...	114.7	119.9	87.0	204.5
ammonium nitrate in solution	249.4	255.0	259.5	244.8	265.0
Bases	36.0	39.0	37.9	39.1	37.8
Acids	1,912.1	1,954.5	1,858.3	1,645.7	1,275.9
of which					
H₂SO₄ Sulphuric	988.7	1,013.7	950.3	840.6	617.4
HNO₃ Nitric	527.9	525.5	511.1	421.4	440.6
H₃PO₄ Phosphoric	359.5	368.3	341.5	319.1	164.9
Fertilizers	2,175.6	2,219.6	1,953.4	1,784.3	1,234.1
of which					
Nitrogenous single Compound	675.5	683.5	411.7	293.1	305.6
Superphosphatic	1,367.0	1,389.3	1,398.8	1,334.4	860.3
Superphosphatic	120.3	134.4	131.5	144.2	55.4
Plastic materials & synthetic resins	152.4	156.7	159.4	157.0	164.5
of which					
PVC	69.5	76.2	79.2	77.7	79.3
Petrochemicals	75.3	88.5	87.5	108.0	122.2
of which					
Solvents	27.6	37.6	41.3	56.4	72.0
Synthetic fibres	15.0	6.8	6.8	6.2	6.6
Organic colourings	5.1	5.2	5.8	6.2	7.0
Metal oxides	1.0	0.9	0.8	1.0	0.8
Resin & turpentine	5.5	4.9	5.9	4.4	4.0

PHARMACEUTICALS

Limited local added value

Water, work and packaging: that's the Greek input into the pharmaceutical industry. There are no active ingredients manufactured in the country; neither is there a fine chemicals industry producing excipients — the binding agents, solutions, colourings and flavourings which make the active ingredient palatable and help determine the efficacy of the medicine by regulating its rate of release into the body.

"It is not worth it for companies to conduct their own testing schemes to ensure the products meet EU specifications," says **Emil Koutsoff**, director of the **Association of Pharma-**

ceutical Companies of Greece (SFEE). "It's easier to buy from approved foreign suppliers, even if it's more expensive.

By and large, the products manufactured in Greece are those with more than 50 per cent water content whose bulk makes them too expensive to import prefabricated.

As recently as 1990, 60 per cent of all drugs sold in Greece were locally manufactured — either under licence, royalty or subcontracting agreements.

Because of the effect of price controls (see below) many companies have run down their manufacturing in favour of purely trading operations. In less than half a decade the proportion of imported to locally manufactured products has been reversed.

There are 55 firms in SFEE. Of these 30 are subsidiaries or affiliates of multinational companies. The remainder are Greek companies working to licencing or royalty agreements. Only 28 of the SFEE companies have manufacturing plants, including eight of the multinationals. Most of the multinationals use third party subcontractors. SFEE is the official Greek

representative to the **European Federation of Pharmaceutical Industries' Associations (EFPIA)**.

There are three firms which comprise something called the **Importers Association**, headed by **Paul Yiannacopoulos** of **Vianex**, and there are some 30 smaller local firms grouped in the **Panhellenic Pharmaceutical Manufacturers Association** producing mostly copy products. There are an estimated 8,000 people employed in the pharmaceuticals sector directly and about three times that number indirectly.

Measuring the size of the pharmaceuticals market is complex.

Some 6,500 products have been licenced for sale and prices set for them. Of these, only 3,200 are currently available in the market place (5,800 in total if different dose packs of the same product are considered).

Patients pay 25 per cent of their drug charges (zero to 10 per cent if they have some chronic disease such as diabetes or seriously debilitating disease like cancer). The **Social Insurance Fund (IKA)**, which covers some 55 per cent of the population

The Greek input into the pharmaceutical industry can be condensed into three words: water, work and packaging (Photo credit: Lavipharm annual report)



TABLE 4: Spending on pharmaceutical products

Year	Population (mn)	Total drug sales ^a (Dr mn)	Spending per head (Dr)	Total drug sales deflated (Dr mn)	Spending per head deflated (Dr)
1987	9.98	87,140	8,728	87,140	8,728
1988	10.00	110,379	11,033	97,244	9,720
1989	10.04	128,162	12,766	99,306	9,892
1990	10.09	169,928	16,843	109,355	10,839
1991	10.20	218,408	21,413	117,614	11,531
1992	10.20	278,504	27,171	131,631	12,905
1993	10.20	362,503	35,540	147,359	14,447
1994	10.30	e447,982	43,493	e164,336	15,955
1995	10.30	e571,000	55,437	e202,410	19,652

^a Retail prices. See Table 5 for breakdown between hospitals and pharmacies.

Source: General Statistics of Consumption of Pharmaceuticals in 1993, Pharmetrica 1994, and Viomichaniki Epitheorissis estimates

has a "positive list" of some 1,850 preferred drugs. Doctors may prescribe any licenced medicine but their prescriptions are monitored to see whether they are regularly prescribing drugs not on the list or are favouring a particular company's products.

Measured in terms of packages dispensed, the growth in the pharmaceuticals market in recent years has been modest. According to the state-run health economics research group, Pharmetrica, the quantity rose from 240.3 mn packages in 1989 (31.3 mn hospitals; 209 mn pharmacies) to 273.9 mn in 1993 (39 mn hospitals and 234.9 mn pharmacies). This represented a 14 per cent increase — 24.6 per cent hospitals and 12.4 per cent pharmacies.

Measured in terms of cost, however, the market skyrocketed both in both nominal and real terms. During the same period spending increased nearly three fold. The total bill for pharmaceuticals in 1989 was Dr128.1 bn — hospitals Dr18.7 bn and pharmacies Dr109.4. By 1993 this had leapt to Dr362.5 bn — hospitals Dr54.3 bn and pharmacies Dr308.2 bn. Even when deflated to take account of the rise in consumer prices the total cost rose by 48 per cent from Dr99.3 bn in 1989 to Dr147.4 bn in 1993 (Tables 4 and 5).

TABLE 5: Breakdown of hospital and pharmacy sales

Year	Sales to hospitals ^a	Pharmacy sales	Total sales
1987	11,921	75,220	87,140
1988	15,545	94,833	110,379
1989	18,739	109,423	128,162
1990	25,033	144,895	169,928
1991	33,287	185,120	218,408
1992	43,146	235,359	278,504
1993	54,270	308,233	362,503
1994	70,643	377,339	447,982

^a State hospitals only. Private hospitals buy from wholesalers or in some instances retailers. There were in 1993 just nine pharmacists employed in private clinics.

Source: Pharmetrica

The market is heavily concentrated. The top ten companies, all multinationals, claim between 35 - 37 per cent of the market depending upon whose market share figures one uses.

The international industry has gone through a process of rationalisation with mergers of major companies: Bristol-Myers with Squibb, Smith-Kline Beckmann with Beecham and Rhône-Poulenc with Rorer. BASF purchased the pharmaceuticals busi-

ness of the UK Boots group. At the time of writing, Glaxo was in the process of buying out Wellcome and Hoechst is in the process of acquiring Marion Merrell Dow Inc.

Such mergers can have devastating effects on local Greek licencees. One small Greek drug company lost all its agency agreements when the French company with which it had collaborated for many years was taken over by a French company which had agree-

ments with another Greek firm. The Greek company reluctantly was forced into a merger. A leading local manufacturer and trader, which also had the distribution agency for one of the top-ten companies, lost a contract which generated annual profits of Dr240 mn when that company decided to set up in Greece on its own account. The local companies, with no local active ingredients to call on, are at the mercy of their foreign associates. A number of pharmaceutical companies have diversified into cosmetics as insurance against sudden changes in their circumstances.

Foreign multinationals have a dominant and growing market share. According to figures produced by Pharmetrica, sales to the hospital and wholesale market by foreign firms rose from 53.7 per cent in 1987 to 63.6 per cent in 1993. The percentage of products either sold or packaged by domestic companies declined accordingly from 46.3 per cent in 1987 to 34.4 per cent in 1993.

TABLE 6: Market shares, top ten pharmaceutical companies 1994

(%) <i>Company</i>	<i>Pharmacy</i>	<i>Hospital</i>	<i>Total</i>
Glaxo	5.02	8.77	5.56
Bristol Myers Squibb	4.89	8.08	5.35
Merck Sharp & Dohme	4.75	2.58	4.43
Roche Hellas	3.16	8.47	3.93
Sandoz	3.18	6.01	3.59
SmithKline Beecham	2.99	4.63	3.23
Boehringer Ingelheim	3.29	n.a.	2.81
Astra	2.69	3.27	2.77
Servier	3.07	n.a.	2.62
Bayer	2.31	4.25	2.59

Source: Glaxo