Annual Report 1980

AKZO

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The annual meeting of stockholders will be held at the RAI Congress Center, Europaplein, Amsterdam, on Tuesday, May 12, 1981, at 10 a.m.

Agenda

1 Opening

2 Report of the board of management for the financial year 1980

3 Approval of the financial statements and consideration of the proposal, contained therein, to omit the dividend

4 Appointment of members of the supervisory council

5 Appointment of a member of the board of management

6 Annual decision concerning issues as required by the London Stock Exchange*

7 Any other business

* annually recurring agenda item in re compliance with the requirements of the London Stock Exchange concerning the listing of Akzo shares on that stock exchange

Translation

Akzo

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The symbol® indicates trademarks registered in one or more countries.

Supervisory council and board of management

Supervisory council

G. Kraijenhoff, chairman
J.R.M. van den Brink, deputy chairman
Y. Scholten, deputy chairman
S.C. Bakkenist
P.M.H. van Boven
A. Herrhausen
H.L. Merkle
H.J. Schlange-Schöningen
Mrs. K. Schudel-van Zwanenberg
J. de Vries
O. Wolff von Amerongen

Board of management

A.G. van den Bos, president
A.A. Loudon, deputy president
J.A. Wolhoff, deputy president
H. van Doodewaerd
A. van Driel
M.W. Geerlings
H.J. Kruisinga
J. Veldman
H.J.J. van der Werf
M.D. Westermann
H.G. Zempelin

Adviser: W.K.N. Schmelzer

Secretary

J.P. Huges

Akzo

Akzo is an international group of companies with operations in 50 countries. Employing 83,000 people, the Group achieved sales of Hfl 12.5 billion in 1980.

Akzo's product range includes man-made fibers, salt, commodity and specialty chemicals, coatings, pharmaceuticals, consumer products, electronic products, and miscellaneous industrial products.

Business activities are organized in seven entities: six divisions – Enka, Akzo Zout Chemie, Akzo Chemie, Akzo Coatings, Akzo Pharma, and Akzo Consumenten Produkten – which operate on a worldwide scale, and Akzona which incorporates practically all our interests in North America.

Akzo recognizes the importance of good communications regarding its policies and activities with those who are directly or indirectly involved with the Group. It accepts the codes of conduct established by the Organisation for Economic Co-operation and Development (OECD) and the International Labour Organisation (ILO).

Report of the supervisory council

Changes in supervisory council and board of management

At the annual meeting of stockholders held May 13, 1980, J.R.M. van den Brink, P.M.H. van Boven and Y. Scholten, whose terms of office had expired, were reappointed.

At the meeting, Mr. van den Brink retired as chairman and was succeeded by G. Kraijenhoff, deputy chairman. Mr. van den Brink joined the supervisory council of AKU in 1953 and took the chair in 1961. His competence as chairman of the council and his sense of purpose, which was of great support to us in difficult times, have been invaluable to the Company. We are gratified that Mr. van den Brink has accepted reappointment and will continue to serve on the council as a deputy chairman.

At the annual meeting of stockholders of May 12, 1981, Mrs. K. Schudel-van Zwanenberg, S.C. Bakkenist, H.L. Merkle, and J. de Vries will resign from the supervisory council.

Mr. de Vries will retire because he has reached the mandatory retirement age. To fill the vacancy we recommend appointment of E.G.G. Werner.

The other members' terms of office are expiring and we recommend that they be reappointed.

At the annual meeting of May 12, 1981, A. van Driel, president of Akzo Coatings, will resign from the board of management effective May 31, 1981, because he has reached the mandatory retirement age. Stockholders will be asked to appoint to the board with effect from June 1, 1981, C. Zaal, now deputy president of Akzo Coatings.

With effect from the same date, Mr. Zaal will become president of Akzo Coatings.

In 1982 A.G. van den Bos will reach the mandatory retirement age and will step down as president and as a member of the board effective May 31 of that year. We propose that A.A. Loudon, now a deputy president, be appointed to succeed him as president as of June 1, 1982.

Supervision

We regularly obtained oral and written reports on the business of the Company and thus were able to keep the Group's performance under constant review.

Last year we expressed our agreement with the board of management that top priority should be assigned to efforts and measures aimed at consolidating the position of the Group.

The worldwide economic recession aggravated the problems of the Western European man-made fiber industry, thereby interrupting the Group's recovery. We regret that once again drastic measures will have to be implemented to deal with the unprofitable situation in the synthetic textile and carpet fiber sector because, apart from a significant non-recurring loss, they involve a substantial decrease in the number of jobs. Nevertheless, we feel that the measures proposed by the board are necessary to end structural losses which can no longer be borne by the Group. Only so will we improve the development opportunities of the other product groups and safeguard the continued existence of the Group. We are confident that after implementation of the measures conditions for a balanced development will be more favorable.

We herewith submit to you for approval at the annual meeting of stockholders of May 12, 1981, the financial statements for the financial year 1980, as prepared by the board of management. The statements are made up of the balance sheet and statement of income, with notes, inclusive of the consolidated statements of the Group. These financial statements have been examined by Klynveld Kraayenhof & Co., *Registeraccountants.* Their report appears on page 49.

We have approved these financial statements, with the board of management's proposal contained therein to omit the dividend.

The net loss of Hfl 69.6 million has been charged against reserves.

We propose that you also approve the financial statements, thus discharging the responsibility of the members of the board of management for their conduct of the business and of the members of the supervisory council for their supervision.

Arnhem, March 27, 1981

For the supervisory council,

G. Kraijenhoff,
chairman

Financial highlights

on an historical-cost basis	1980	1979
in Hfl million		
sales	12,453	12,015
operating income	416	689
net income (loss) before extraordinary items	170	289
net income (loss) after extraordinary items	(70)	230
funds from operations	631	976
property, plant and equipment		
capital expenditures	645	461
depreciation	504	506
stockholders' equity	2,266	2,325
per common share of Hfl 20 par value, in Hfl		
net income (loss) before extraordinary items	5.77	9.75
net income (loss) after extraordinary items	(2.35)	7.74
dividend	–	2.40
stockholders' equity	76.56	78.55

on a current-value basis (see pages 44 and 45)	1980	1979
in Hfl million		
operating income	161	363
net income (loss) before extraordinary items	53	141
net income (loss) after extraordinary items	(187)	82
stockholders' equity	2,929	2,828
per common share of Hfl 20 par value, in Hfl		
net income (loss) before extraordinary items	1.80	4.75
net income (loss) after extraordinary items	(6.32)	2.76
stockholders' equity	98.93	95.54
number of employees	83,100	83,000

Report of the board of management

General review

Recovery interrupted

By mid-1980 the Group's recovery was halted by a strong recession, which spread rapidly to most countries of the world. In the first half of the year net income was well over the amount recorded for the corresponding period of 1979. The decline in the second half of 1980 resulted in a net income before extraordinary items of Hfl 170 million, compared with an amount of Hfl 289 million in 1979. Although sales were up 4% to Hfl 12.5 billion, shipments were down 3%.

From income of Hfl 170 million an amount of Hfl 240 million had to be deducted for extraordinary items, mainly due to restructuring measures to be taken in the man-made fiber sector of Enka Europe. The total cost of these measures is approximately Hfl 400 million, some Hfl 150 million of which is to come from provisions already made for this purpose in previous years.

After extraordinary items, this resulted in a net loss of Hfl 70 million (1979: net income Hfl 230 million).

On a current-value basis there was a net loss of Hfl 187 million (1979: net income Hfl 82 million).

In light of these results we propose to omit the 1980 dividend.

The decline in operating income is mainly due to substantial losses suffered on synthetic textile and carpet fibers, particularly by our Western European plants. Furthermore, income from some commodity chemicals was much lower.

The Company has no cause for dissatisfaction with performance in the other sectors in 1980.

Business cycle

In the first half of 1980 there were already signs of a slowdown in the economy in the United States, followed by a deep recession. This strongly affected Akzona's results, mainly due to heavy losses in its man-made fiber sector.

In Western Europe the downturn in the economy came later in the year, hitting Enka Europe's synthetic textile and carpet fibers, already debilitated by various severe problems, and also affecting commodity chemicals.

Major market segments for our products that were impacted by the recession were the textile, building and automotive industries. Our chemical products were perceptibly affected by the difficult situation in the plastics industry.

In general, our other product sectors, such as coatings, pharmaceuticals, consumer products, electronic products, and miscellaneous industrial products, were less vulnerable to adverse business conditions.

Restructuring of man-made fibers

Since 1975 the Western European man-made fiber industry has been cutting back its production capacity for synthetic textile and carpet fibers, yet the market has failed to recover sufficiently. In 1980, aggregate losses of the Western European man-made fiber industry totaled Hfl 2.5 billion, more than doubling the 1979 loss.

Apart from cyclical causes, the present, intensified crisis situation is mainly due to a number of structural factors:

- in recent years the consumption of textile products in Western Europe has shown only moderate growth; in addition, the Western European textile industry has further decreased in size as a result of its increasing inability to successfully cope with competition by producers in other continents;
- the Multi-Fiber Agreement concluded with a large number of newly industrialized and developing countries has failed to prevent imports from these countries from exceeding the 6% annual rise envisaged;
- in 1979 and 1980, imports showed a further increase due to the influx of man-made fibers and textile products from the United States, where producers benefited from prices for oil and natural gas that were maintained at a low level;
- in a European framework it has proved difficult to implement measures designed to curtail production capacity as agreed upon by Western European fiber producers, while nationally biased intervention and support policies adopted in some European countries exerted an adverse effect on market conditions;
- finally the substantial price hikes of petrochemical feedstocks and energy in recent years, which were insufficiently reflected in selling prices, contributed to the heavy loss situation.

Since 1975 Enka Europe has realized a drastic reduction in production capacity of its synthetic textile and carpet fibers and considerable cost savings in plants and offices. This has resulted in a better balance of Enka's line of products. The major products now are industrial yarns, rayon textile yarns and non-fiber products, which accounted for 65% of Enka Europe's sales in 1980.

Unfortunately, these moves have not been able to prevent the substantial losses on synthetic textile and carpet fibers. Operating losses on these products amounted to approximately Hfl 50 million in 1979 and rose to approximately Hfl 200 million in the year under review.

Early in 1981 these losses compelled Enka to announce far-reaching measures aimed at cutting back or terminating production of polyester textile yarn, polyamide carpet yarn and staple, and polyester staple in its plants in the Netherlands, the Federal Republic of Germany and Northern Ireland, and at concentrating production of the remaining products. Moreover, steel cord production in the Federal Republic of Germany is to be adjusted to sales possibilities, which will probably result in a gradual termination of production.

Consultations are taking place with personnel and government representatives about this curtailment of production capacity, which will also reduce the size of Enka Europe's central administrative and general services. Altogether, more than 4,000 jobs will be involved. We realize that the restructuring plan again frustrated the hopes of our employees, which makes it bitter medicine, especially for those who are directly affected.

Full implementation of the restructuring measures, requiring an amount of Hfl 400 million, is expected to cause a considerable improvement in Enka Europe's results of Hfl 150 to Hfl 200 million annually.

To alleviate the pressure on the Western European textile and fiber industry we advocate renegotiation of the Multi-Fiber Agreement, which will expire at December 31, 1981. In this context, we deem it imperative that the annual increase in import quotas will be better attuned to the development of textile consumption in the EEC.

Pressure on chemical products

The recession perceptibly dampened earnings from our commodity chemicals. For a number of products, mainly petrochemicals, prices slumped to such extent in the second half of 1980 that we were compelled to cut back production. Our specialty chemicals held their ground fairly well in the year under review.

Reduced growth in the western industrialized countries and the ongoing expansion of production capacity in other countries have increased the chemical industry's exposure to competition. Over the last few years the Western European industry has experienced a gradual erosion of its earnings position and a loss of financial buoyancy.

On the whole, we do not believe that a system of protectionist measures will be the proper remedy. However, action may be inevitable if competition becomes unfair. Transactions that are clearly indicative of dumping practices should therefore be fought quickly and effectively on a European level.

The Western European chemical industry with its international outlook has the technological potential and inventiveness to face the challenge of reduced growth and keener competition. An important condition for success is a further unification of the European market. It is also essential that EEC member states should be in step on environmental, safety and energy matters, as should the Community as a whole with countries outside its area.

The technological and commercial base of our line of chemical products both in Western Europe and elsewhere is firm enough to look to the future with confidence. However, a matter of great concern to us is the relatively steep increase in energy costs in the Netherlands, which enlarged the price disadvantage with the countries surrounding us. In particular for our commodity chemicals, which are largely sold outside the Netherlands, this trend threatens to further distort international competitiveness. While it is true that these price hikes have led to increased efforts to develop energy-saving processes, the introduction of such processes will call for high capital investments in due course.

Stable development for other products

Products that accounted for more than 40% of the Group's total sales and made a stable and material contribution to earnings even in recessionary 1980 included coatings, pharmaceuticals, consumer products, and miscellaneous industrial products. Overall, these products possess attractive potential for further innovation.

In recent years Akzo Coatings has consolidated its international market position in specialized areas, as is demonstrated by its successful introduction of automotive refinishes in a number of countries, including the United Kingdom. Substantial funds have been allocated by Akzo Pharma for improvement and modernization of research facilities in the Netherlands and the Federal Republic of Germany. In the year under report investigations were commenced into the potential of recombinant DNA technology for pharmaceuticals. Brand-Rex (Akzona) with its line of products and components for the electronic industry is passing through a stage of rapid expansion.

Our membranes are finding worldwide use as a dialysis material. The interesting technological aspects and versatility of this application have prompted us to devote a special section to this subject; see page 17 ff.

Financing and capital expenditures

In 1980, expenditures for property, plant and equipment aggregated Hfl 645 million. A major factor in the 40% increase over 1979 was the greater share for rationalization projects.

Project authorizations in 1980 amounted to Hfl 660 million. This amount does not include the *Arenka®* project, on which a final decision will not be taken until the consequences to the Group of the planned restructuring program for man-made fibers have been established.

In the year under review some major loans were negotiated with the primary aim of meeting financing requirements in the years ahead. The Group was thus able to maintain a position of ample liquidity.

Given the limited scope for industrial borrowing operations in the Dutch capital market, the greater part of these loans had to be arranged outside the Netherlands.

Outlook for 1981

In the early months of 1981 the performance of the Group has been marked by a continued recession in Western Europe and a slight upturn of business activity in the United States. For Western Europe, we do not expect signs of a recovery of the economy to become apparent until late this year.

The restructuring of Enka Europe will not have a perceptible effect in 1981, so that near-term results for man-made fibers will remain negative. On the other hand, we expect that the results of Akzona's fiber division will be positive.

The earnings performance of chemical products is still depressed, notably for commodity chemicals, but this group of products should nevertheless make a fair contribution to earnings. For coatings the results should be somewhat lower after the favorable years 1979 and 1980, while combined earnings from pharmaceuticals, consumer products and miscellaneous products should remain at the same level as in 1980.

The fact that it is so hard to be sure which way the world economy is headed, makes it extremely difficult to predict performance in 1981. Assuming our current economic forecasts to be correct, and barring exceptional events, we would expect the Group to close the year with a modest profit.

Capital expenditures should be at about the same level as in 1980. At the end of 1981 the number of jobs provided by the Group will be lower than in 1980, notably in the Netherlands, the Federal Republic of Germany and the United Kingdom.

With energy costs rising, solar salt production is gaining in importance.
View of International Salt's operation on the island of Bonaire (Netherlands Antilles).

Financial review

Quaterly data	sales		operating income	
in Hfl million	1980	1979	1980	1979
first quarter	3,285	2,901	181	151
second quarter	3,090	3,048	141	164
third quarter	2,853	2,942	31	159
fourth quarter	3,225	3,124	63	215
total	12,453	12,015	416	689

Results of operations

Sales and results

in Hfl million	1980	1979
sales	12,453	12,015
operating costs	12,037	11,326
operating income	416	689
interest	(261)	(259)
taxes on operating income less interest	(48)	(136)
equity in earnings of non-consolidated companies	72	32
Group income (loss) before extraordinary items	179	326
extraordinary items	(246)	(60)
minority interest	(3)	(36)
net income (loss)	(70)	230

Sales were up 4% from 1979, but shipments were off 3%, mainly due to lower volumes of man-made fibers and commodity chemicals. On average, prices rose 9%, but translation into guilders, at lower rates of exchange, for sales of consolidated companies outside the Netherlands had a negative effect on sales of 2%.

Operating costs were up 6% to Hfl 12,037 million. They break down as follows:

in Hfl billion	1980	1979
salaries, wages and social charges	3.8	3.6
depreciation	0.5	0.5
raw materials	4.6	4.3
energy	0.8	0.7
supplies and purchased services	2.3	2.2
total	12.0	11.3

The 6% increase in the amount for salaries, wages and social charges was almost exclusively due to a rise in the average wage level; in the two years the number of employees hardly changed. The proportion of these costs relative to sales rose from 29.7% in 1979 to 30.4% in 1980.

For raw materials, price rises were less pronounced than in 1979 because of the recession. On the other hand, energy prices continued their upsurge, especially in Western Europe.

Operating income, as a percentage of sales, was down from 5.7% in 1979 to 3.3% in 1980. At Hfl 105 million, the amount of positive inventory valuation differences was substantially lower than the 1979 figure (Hfl 194 million).

Interest expense rose in the year under review by Hfl 61 million to Hfl 411 million due to an increase in borrowings and a higher average interest rate. A major part of the rise in interest expense was offset by higher interest received on cash and marketable securities and by the capitalization (since January 1, 1980) of financing expenses of capital investment projects under construction.

Gains in *equity in earnings of non-consolidated companies* were caused in large part by the continued healthy development of the fiber plants in Latin America and India and by higher earnings of the two methanol plants in the Netherlands. Details on equity in earnings of non-consolidated companies are given on pages 9 and 10.

Extraordinary items largely relate to the projected measures for the restructuring of Enka Europe. The aggregate amount of about Hfl 400 million associated with these measures is made up of additional write-offs of property, plant and equipment (approximately Hfl 170 million) and provisions for the rationalization of activities, including redundancy plans for personnel (approximately Hfl 230 million). From this aggregate amount some Hfl 150 million in provisions formed in previous years could be deducted.

Results on a current-value basis

When the results are determined on the basis of the current-value of property, plant and equipment, and inventories (see pages 44 and 45), net income before extraordinary items is distinctly positive, at Hfl 53 million. After deduction of extraordinary items there is a loss of Hfl 187 million, which precludes payment of a dividend.

in Hfl million	1980	1979
operating income		
at historical cost	416	689
at current cost	161	363
net income (loss) before extraordinary items		
at historical cost	170	289
at current cost	53	141
net income (loss) after extraordinary items		
at historical cost	(70)	230
at current cost	(187)	82

Sales and operating income by product group

The table below shows that operating income from man-made fibers and chemical products fell considerably. Overall, the other product groups improved their contributions to operating income.

in Hfl million	sales 1980	sales 1979	operating income 1980	operating income 1979	operating income in % of sales 1980	operating income in % of sales 1979
man-made fibers	3,782	3,852	(170)	74	(4.5)	1.9
chemical products	3,549	3,481	183	253	5.2	7.3
coatings	1,432	1,221	110	98	7.7	8.0
pharmaceutical products	1,320	1,274	145	134	11.0	10.5
consumer products	869	725	40	31	4.6	4.3
miscellaneous products	1,670	1,595	116	132	6.9	8.3
total	12,622	12,148	424	722		
intra-Group deliveries and non-allocated costs	(169)	(133)	(8)	(33)		
total	12,453	12,015	416	689	3.3	5.7

The terms and conditions for intra-Group deliveries are negotiated at arm's length and therefore are, in principle, identical with the ones used in transactions with third parties. International intra-Group deliveries and international deliveries within a single product group are made in accordance with standard procedures that take due account of tax, currency and pricing regulations in force in the countries concerned.

Man-made fibers

Sales of *man-made fibers* were down 2%; shipments declined 7%. The latter decline concerned synthetic textile and carpet fibers produced by Enka plants in Western Europe and by American Enka plants. Shipments of industrial yarns and rayon textile fibers managed to hold their ground.

The sharp fall in operating results to a loss of Hfl 170 million reflects the structurally difficult position of the Western European textile and fiber industry. The recession was also reflected in weakened U.S. markets, which resulted in losses for American Enka. Polyenka (Brazil) continued to make a positive contribution to operating income.

The decline in sales of *man-made textile and carpet fibers* from Hfl 2,817 million to Hfl 2,663 million in 1980 was partially offset by an improvement in sales performance for *man-made industrial fibers* from Hfl 1,035 million in 1979 to Hfl 1,119 million in the year under review. For rayon auto tire yarns both sales and earnings gains were recorded; plant closures by other producers were a factor in these gains.

Chemical products

The recession also affected earnings performance of this group of products. Sales of *chemical products* (Hfl 3,549 million) were slightly higher than in 1979, but shipments were down 3%. Operating income of Hfl 183 million was approximately one-fourth down from 1979.

The decline was substantial for *salt and heavy chemicals*, particularly for a number of Akzo Zout Chemie's commodity chemicals, resulting in production cutbacks for a few products. Also, margins were squeezed, for instance for vinyl chloride monomer. Caustic soda prices, on the other hand, developed favorably.

Sales of salt and heavy chemicals decreased from Hfl 2,237 million to Hfl 2,174 million in 1980.

Although the economic downturn did not entirely pass by *specialty chemicals*, sales and operating income were higher than in the prior year.

Sales of specialty chemicals increased from Hfl 1,244 million to Hfl 1,375 million in 1980.

Coatings

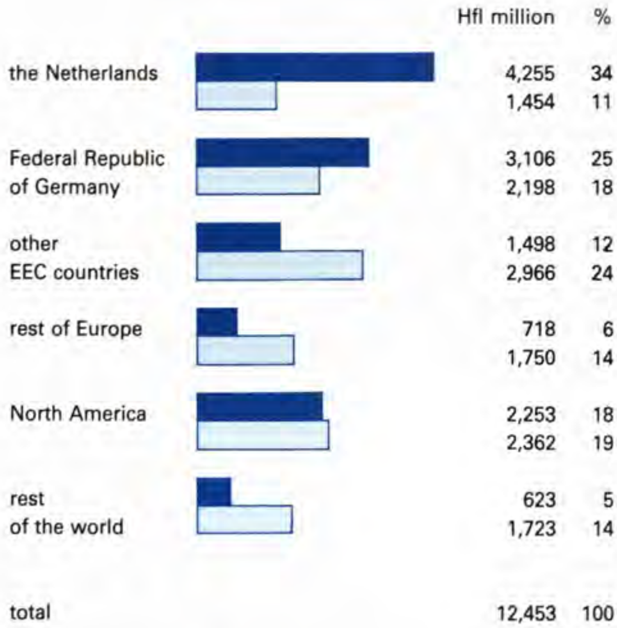
This product group again had a satisfactory year. Sales rose 17% to Hfl 1,432 million; approximately one-third of this was due to consolidation of Miluz (Argentina) and other companies. Especially in South America, and notably in Brazil, considerable sales gains were recorded.

Operating income was up 12% to Hfl 110 million. Early in the year margins were depressed due to price hikes for raw materials, but business in a number of sectors rebounded later in the year.

Pharmaceuticals

Both sales (Hfl 1,320 million) and operating income (Hfl 145 million) were slightly up from 1979. Organon

Sales (1980), by origin ■ and by destination □



(ethical drugs) and Intervet (veterinary products) recorded satisfactory growth figures. Organon Teknika (hospital supplies), Chefaro (non-prescription drugs) and Diosynth (raw materials for the pharmaceutical industry) did not live up to expectations.

Consumer products

Sales increased 20% to Hfl 869 million; a factor in this increase was the acquisition in mid-1980 of Ashe Laboratories Ltd in the United Kingdom.

Operating income was up 29% to Hfl 40 million. In the Netherlands, margins were generally under pressure. An improvement in sales and earnings was recorded for oils and fats.

Miscellaneous products

Akzona reported reasonably good results for Armira (leather) and very satisfactory results for Brand-Rex (electrical and electronic wire and cable, electronic products). Business for Barmag Barmer Maschinenfabrik, Membrana (membranes), Colbond (nonwovens) and Industrial Colloids, which are Enka units, was not unsatisfactory. The results of Akzo Plastics (Enka), however, were substantially lower than in the prior year on account of the recession.

Sales and operating income by region

The table below gives a breakdown of sales and operating income by region. These figures illustrate the impact of the recession on the results of our consolidated companies, especially in the EEC countries and North America.

in Hfl million	sales* 1980	sales* 1979	operating income 1980	operating income 1979
EEC countries	8,859	8,586	229	441
rest of Europe	718	711	37	56
total Europe	9,577	9,297	266	497
North America	2,253	2,224	45	113
rest of the world	623	494	105	79
total	12,453	12,015	416	689

* by area of origin

Europe

Operating income in *the Netherlands* declined considerably, mainly due to the heavy losses sustained by Enka B.V. and the substantial drop in operating income of Akzo Zout Chemie Nederland. The other companies together succeeded in improving the earnings performance of 1979.

The share of exports in overall sales by the Dutch Akzo companies in 1980 was unchanged from 1979 (approximately 70%).

The sales and earnings picture in the *Federal Republic of Germany* was essentially determined by Enka AG, which saw its operating income fall sharply. The other companies, whose operations are mainly in the fields of specialty chemicals, coatings and pharmaceuticals, together recorded an earnings figure which was somewhat lower than income for the previous year.

In the *United Kingdom* and *Spain* overall earnings showed the impact of major losses suffered by British Enkalon and La Seda de Barcelona. The performance of our consolidated companies in *France* and *Belgium* was on the whole satisfactory.

North America

As early as the spring of 1980 the recession in the *United States* cut deep into the level of Akzona's earnings, and caused a loss situation for its fiber division American Enka. By the end of the year a modest recovery materialized so that, on balance, Akzona's operations for the full year were profitable.

Rest of the world

Overall, business for our Brazilian companies was better than in 1979. This applies particularly to Polyenka (man-made fibers) and Montesano (coatings), two major consolidated companies in Brazil.

Non-consolidated companies

The non-consolidated companies are predominantly located in Western Europe and Latin America. Together they netted 1980 sales in the amount of Hfl 2.5 billion (1979: Hfl 2.4 billion); at December 31, 1980, they employed 12,500 persons (at December 31, 1979: 15,300 persons). Of 1980 sales, 44% related to man-made fibers, 43% to chemical products, and 13% to miscellaneous products.

Our equity in earnings of non-consolidated companies increased materially, from Hfl 32 million in 1979 to Hfl 72 million in 1980. The principal contribution to this increase was made by Enka companies, almost all of them man-made fiber producers outside Western Europe. COBAFI, Brazil's chief producer of nylon tire reinforcing materials, experienced a good year. In consultation with the other owners we sold our interest in Nichemtex (Nigeria); however, our know-how and experience in the field of fibers will continue to be available to that company.

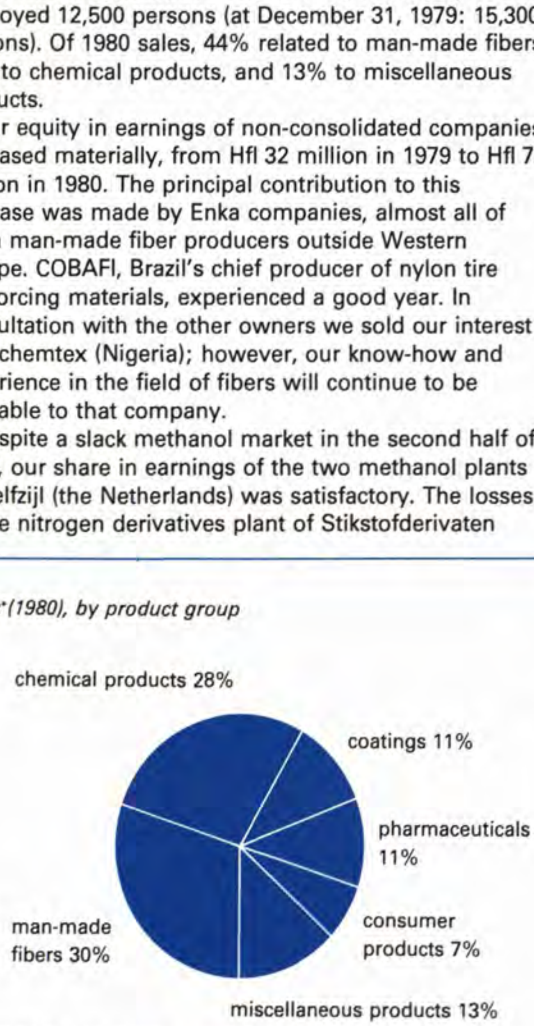
Despite a slack methanol market in the second half of 1980, our share in earnings of the two methanol plants at Delfzijl (the Netherlands) was satisfactory. The losses of the nitrogen derivatives plant of Stikstofderivaten (Belgium) failed to improve, mainly because of persistent market weakness. Delamine (the Netherlands) also remained in the red.

Value added

Value added by consolidated companies, defined as sales less the total cost of raw materials, energy, supplies, and services, and less the amount for depreciation, was down to Hfl 4,205 million (1979: Hfl 4,261 million). Value added expressed as a percentage of sales decreased from 35.4% in 1979 to 33.8% in 1980.

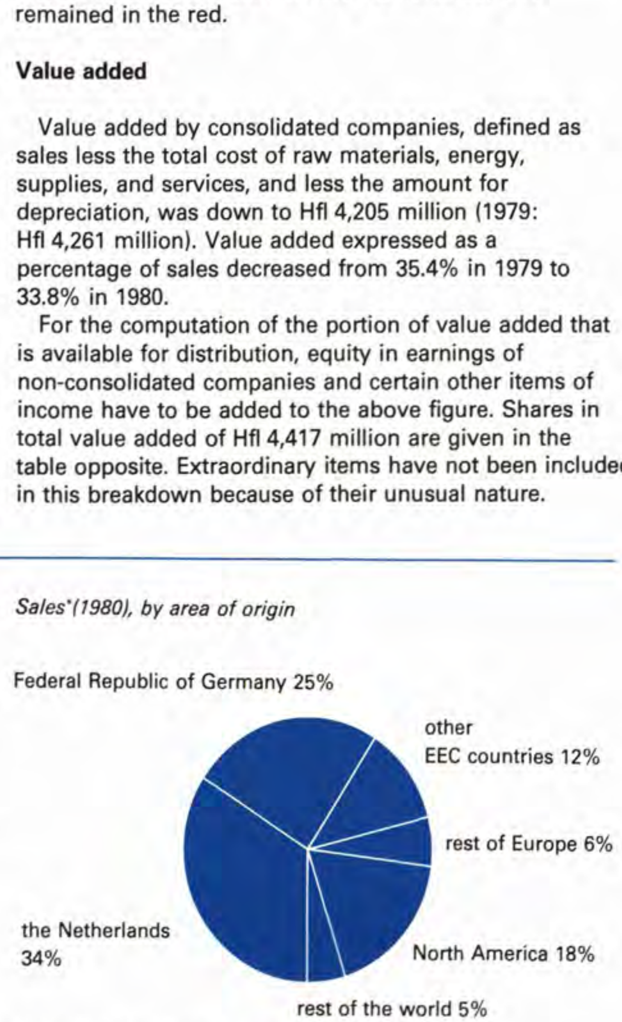
For the computation of the portion of value added that is available for distribution, equity in earnings of non-consolidated companies and certain other items of income have to be added to the above figure. Shares in total value added of Hfl 4,417 million are given in the table opposite. Extraordinary items have not been included in this breakdown because of their unusual nature.

Sales(1980), by product group*



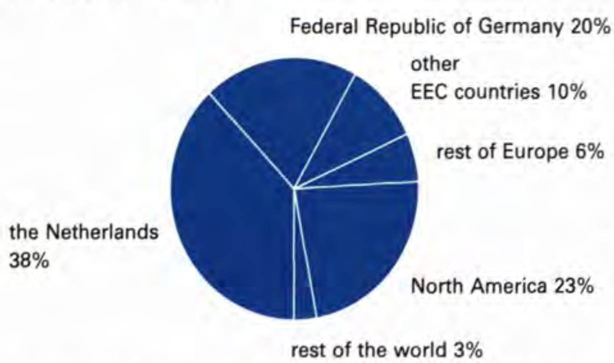
sales Hfl 12,453 million

Sales(1980), by area of origin*



sales Hfl 12,453 million

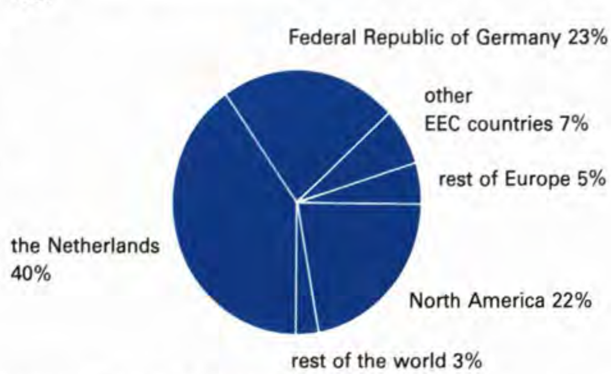
*Geographical distribution of expenditures for property, plant and equipment*in 1980*



expenditures for property, plant and equipment Hfl 645 million

* consolidated companies

*Geographical distribution of invested capital*at December 31, 1980*



invested capital Hfl 6,373 million

in %		1980		1979
employees		85.8		81.1
providers of loans		8.6		8.0
governments		1.6		3.5
stockholders (dividend)				
Akzo N.V. stockholders	–		1.6	
minority stockholders	0.5		0.4	
		0.5		2.0
Group equity		3.5		5.4
		100.0		100.0
total value added (in Hfl million)		4,417		4,403

The share of employees is shown to have climbed to 85.8% of total value added. There will be no dividend payments to Akzo N.V. stockholders.

The addition to Group equity becomes a charge when extraordinary items are taken into account.

Financing and capital expenditures

Compared with 1979, funds from operations available for Group financing were down, whereas capital expenditures were at a higher level.

The table below presents a survey of Group financing in 1980, with 1979 figures added for comparison.

in Hfl million	1980	1979*
working capital at January 1	2,766	2,108
funds from operations	631	976
capital expenditures	(724)	(570)
borrowings	593	538
repayment of borrowings	(498)	(202)
Akzo N.V. dividend	–	(71)
other changes	45	(13)
working capital at December 31	2,813	2,766
of which cash and marketable securities	883	805

* restated for comparison

Capital expenditures

Expenditures for property, plant and equipment rose from Hfl 461 million in 1979 to Hfl 645 million in the year under review, primarily due to a higher volume of rationalization projects. Also higher was the amount needed toward expansion projects.

Expenditures for acquisitions stood at Hfl 94 million (1979: Hfl 120 million); they chiefly concerned acquisition of a consumer products company in the United Kingdom, expansion of pharmaceutical interests in France and expansion of coatings interests in Spain and Argentina.

Divestments in 1980 generated an amount of Hfl 15 million (1979: Hfl 11 million).

expenditures for property, plant and equipment in Hfl million	1980	1979	1978
product groups			
man-made fibers	241	141	125
chemical products	193	144	172
coatings	50	34	25
pharmaceuticals	64	48	42
consumer products	23	15	11
miscellaneous products	74	79	59
total	645	461	434

expenditures for property, plant and equipment in Hfl million	1980	1979	1978
regions			
the Netherlands	246	170	180
Federal Republic of Germany	130	100	96
other EEC countries	63	44	36
total EEC countries	439	314	312
rest of Europe	36	16	11
total Europe	475	330	323
North America	150	117	93
rest of the world	20	14	18
total	645	461	434

In 1980 authorizations for additions to property, plant and equipment amounted to an aggregate of Hfl 660 million. This compares with a 1979 authorizations total of Hfl 890 million, including approximately Hfl 270 million for the electrolysis project.

Topping the list of projects approved in 1980 are:

- modernization of carpet yarn production at American Enka — Hfl 27 million
- expansion and improvement of rayon textile filament facilities of Enka in the Netherlands, the Federal Republic of Germany and Austria — Hfl 22 million
- modernization and expansion of industrial fiber production of Enka in the Netherlands and the Federal Republic of Germany — Hfl 33 million
- renewal and expansion of the cracking catalyst plant of Akzo Chemie, Amsterdam-Noord — Hfl 35 million
- renewal and expansion of pharmaceutical research facilities in the Federal Republic of Germany (Thiemann GmbH) — Hfl 22 million

– expansion of production facilities of Organon Inc. (Hfl 22 million) and of Inter-Continental Biologics Inc. (production of vaccines Hfl 10 million) in the United States Hfl 32 million

Working capital and liquidity

Working capital in 1980 was up Hfl 47 million (2%). Inventories required Hfl 221 million more in financing, largely as a result of price rises. On the other hand, trade receivables at December 31, 1980, roughly equaled the amount at December 31, 1979. Short-term liabilities increased, partly because of higher accounts payable (suppliers).

As a percentage of sales, inventories and trade receivables aggregated 36.6% at December 31, 1980, up from 35.9% at December 31, 1979.

Cash and marketable securities grew Hfl 78 million to Hfl 883 million at December 31, 1980. Maintenance of substantial liquidity was again assigned high priority in the year under review.

Borrowings

Aggregate borrowings by the Group in 1980 were Hfl 593 million (1979: Hfl 538 million).

Dutch subsidiaries obtained subordinated loans in the aggregate amount of Hfl 225 million for financing the Rotterdam electrolysis project (Hfl 150 million) and the restructuring of the Enka plant at Emmen (Hfl 75 million). These credit lines were arranged with the Nationale Investeringsbank and several private Dutch banks, with terms and conditions being in accordance with normal business practice. Under these agreements Hfl 25 million was outstanding at December 31, 1980.

With a banking consortium, Akzo N.V. negotiated a multi-currency loan of U.S. $ 230 million. The term of this loan is 10 to 13 years, at Akzo's option, and the interest rate will be adjusted from time to time to market conditions. Borrowings under this loan agreement totaled Hfl 196 million, half of which was used to repay amounts outstanding under medium-term credit facilities. The aggregate amount of unused credit arrangements increased from Hfl 650 million at December 31, 1979, to Hfl 940 million in the year under review.

Akzo N.V. also issued DM 125 million of 9% debentures with a maximum life of 10 years; the first annual installment will become due in 1986.

The proceeds of the above loans will be used to meet financing requirements for the next few years. The major significance of these loan agreements is that they have extended the average maturity of the company's long-term debt.

The average interest rate on the loans of consolidated Group companies at December 31, 1980, was 9.6% (1979: 8.9%).

Financing requirements in 1981

We do not expect to make any major call on the capital market in 1981 to obtain additional funds for financing. However, in some countries longer-term loans may be arranged to replace short-term debt.

Mons (Belgium) has become a major peroxides production center of the Group.
In the year under review the dicumyl peroxide (DCP) plant of Amdic S.A., a joint venture of the Japanese Mitsui Petrochemical Industries and Akzo Chemie, was brought on stream.
DCP is a crosslinking peroxide and is chiefly used in the production of plastics for the insulation of electric cables.

Human resources

Fibers require further action

Employment-related developments in the Group in the year under review were clouded by the news, announced in January, 1981, of projected further capacity cuts in our Western European fiber operations, and of the job losses that will necessarily follow. We regret that after the 1975-1977 rationalization a new restructuring program had to be adopted. However, the renewed surge of losses in this sector made action unavoidable.

We expect implementation of the program to reduce the number of jobs in Enka Europe's plants, offices and research institutes by more than 4,000. The operations to be scaled down or closed altogether are established in the Federal Republic of Germany (Kassel, Oberbruch, Obernburg), the Netherlands (Breda) and Northern Ireland (Antrim). The staffing of central offices and research institutes in the Netherlands and the Federal Republic of Germany is to be adjusted to the new situation.

Although the restructuring measures will be implemented gradually, layoffs will be inevitable.

The measures proposed may have distressing consequences for those who stand to lose their jobs. We are pledged to do our utmost to restrict such consequences to the minimum. We certainly do not make light of our responsibility for the decisions ahead and for their execution. But we accept this responsibility because we believe that, by safeguarding the future of the Group, and hence the jobs of many people, we are adopting the right course.

Employment statistics

The statistics given opposite on the number of employees of consolidated companies show that there were no significant changes in total personnel strength in the year under review.

The number of employees of non-consolidated companies was down from 15,300 at December 31, 1979, to 12,500 at December 31, 1980, reflecting a decrease in the number of non-consolidated companies.

Employees of consolidated companies

in numbers	Dec. 31, 1980	Dec. 31, 1979
the Netherlands	23,600	23,700
Federal Republic of Germany	21,000	21,200
other EEC countries	9,600	9,600
total EEC countries	54,200	54,500
rest of Europe	6,400	6,300
total Europe	60,600	60,800
North America	16,000	16,200
rest of the world	6,500	6,000
total	83,100	83,000

In the year under review, the personnel strengths of our consolidated companies in the Netherlands, the Federal Republic of Germany and the United States were off slightly, mainly in the fiber companies. Against these reductions there was an increase of approximately 1,100 persons through inclusion in the consolidated figures of Miluz (Argentina), a producer of coatings, and of Ashe Laboratories (U.K.), a manufacturer of consumer products.

Perspective on 1981

In 1981, Enka Europe's restructuring measures will demand a great deal of attention. Their implementation will release personnel who, where suitably qualified, will be given precedence in filling vacancies within Enka as well as in other Akzo companies.

Alternative employment opportunities within the Group are limited, and the situation differs from country to country. For quite some time now the number of jobs has been gradually falling. This trend will not be reversed by the capital investment projects now under way.

The extent to which the available opportunities are used will in part depend on the readiness of the people involved to accept new jobs that are slightly different from their old ones, or that are located elsewhere. We trust that young people in particular will respond flexibly to offers of work in other areas.

Social developments

Revaluation of the position of industry

The state of industry in nearly all of Western Europe and in North America has produced a degree of unemployment unparalleled since the Second World War. This is fostering a consciousness in ever wider circles that industry is fulfilling a vital role in the preservation of prosperity and employment. However, industry can only perform this role in a climate which recognizes the need for a fair return and encourages innovation and adjustment to international competitive conditions.

In the Netherlands, too, there was evidence of this revived interest in industry. Among its manifestations was the report of the Dutch Scientific Council for Government Advice, published in May, 1980, dealing with the Position and Future of Dutch Industry. This report deservedly received wide publicity, starting the sort of discussion and reappraisal which the country urgently needs. Particularly with regard to its analysis of the present situation we consider the report a valuable contribution to a realistic approach to the great and numerous economic problems facing the nation.

Quite apart from the disruptive effects of a quick succession of energy price hikes, private and public overspending in most countries of the west has sapped the earning capacity and the financial resources of private enterprise. To repair the damage and create room for more investment it will therefore be necessary to reduce "collective spending" (public expenditure plus social security payments) and to encourage savings in the private sector.

The manifest trend is for reliance to be placed on a dwindling workforce to generate the income of *all* people, working and non-working. This trend will have to be reversed. Acknowledgement of the need of such a reversal is fortunately growing, even if consensus on the nature of the action to be taken is still far off. For the EEC member states we favor a joint search by governments and industry for solutions, with coordination at Community level. We are ready to aid in this search according to our ability. The goal envisaged is the creation of the conditions for innovation and expansion of the industrial potential, so as to reinforce the foundations of prosperity and reduce unemployment. At the same time, a gradual redistribution of work will presumably have to be achieved, which must not increase the burden on industry, however. Furthermore the pay for work done will have to be in such proportion to social benefits that it carries sufficient incentive for people to take part in the labor process.

In spite of high unemployment rates, vacancies in industry, particularly for shift work, remain hard to fill. For our part we endeavor to improve working conditions, and in general we feel that pay for unpleasant work should appropriately compensate workers for its inherent negative aspects. The difficulty is, of course, that higher pay and the need for an overall reduction in industry costs can only be reconciled if industry's burden of taxes and social security charges is sufficiently lightened.

We hope that the growing recognition of the importance of industry for prosperity will also lead to a better relationship between the aims of education and the needs of industry. The same concerns apply as well to academic and governmental research. Lastly, there is a task for industry itself to furnish schools and universities with information about industry and its significance. We will do our best to step up our activities in this field.

Focus on quality

The importance society attaches to the quality aspects of industrial activity remains as great as ever. And rightly so. We therefore go to considerable trouble to protect the environment as well as the safety and health of workers and public.

However, this does not prevent us from insisting that governments observe a realistic balance between desirabilities and possibilities. Now that the economy is stagnating and very little growth is expected for the next few years, the consequences of further legislation in the areas concerned should be weighed even more carefully.

The stricter requirements in regard to product liability have given a new dimension to quality control and have underscored the necessity of a systematic and integrated approach toward the quality aspects of manufacturing operations. By means of total (or integral) quality control we have managed to preserve or raise the high quality of our products, and to reduce the substantial costs associated with quality control – that is, the cost of prevention, the cost of appraisal and the cost of failures.

It is our experience that, additionally, raw material and energy economies are often realized. A final benefit of the total quality control concept is that it can heighten worker motivation through job enrichment.

In our previous annual report we observed that the 1979 EEC directive respecting the safety of new chemical products contained useful starting points for the formulation of legal regulations in the individual member states. In the Netherlands this directive, which among other things makes mandatory the provision of information about a new product 45 days before it is launched, now looks to be supplemented by more severe legal requirements. This could make it harder for Dutch companies to compete with companies in the other member states.

Since exports (particularly chemical industry exports) are of major importance to Dutch society, we believe there is a strong case to be made for great reserve in promulgating legislation which exceeds EEC regulations in severity.

Research and technology

R&D costs increased Hfl 55 million to Hfl 515 million in 1980, due in large part to higher personnel costs. The number of employees was up 20 to 5,290 at December 31, 1980. Recruitment of young talented people was continued.

Of total expenditures, approximately 20% related to direct support activities for existing products and processes. The remaining four-fifths was associated with exploratory research and new product development.

The proposed curtailment of Enka Europe's fiber production will require realignment of R&D activities for man-made fibers in the research centers in Arnhem and Obernburg (Federal Republic of Germany).

Research policy is closely aligned with the Group's strategic business objectives for the eighties, which assign a high priority to improvements in the composition of the product line, thus drawing heavily on the innovation potential of divisional research and Corporate Research. At the same time, it should be recognized that commercialization of – in themselves – attractive innovations is not infrequently hampered by financial risks that are disproportionately high in light of potential returns.

The present economic business environment makes it necessary to direct research efforts toward improvement of product quality and reduction of production costs, including economical use of raw materials and energy. In our organization this trend is reflected in greater emphasis on production processes, notably for our chemical products.

Nevertheless, we continue to ascribe great importance to exploratory work on ideas not directly related to our existing products and processes. Such activities, which are limited in scope and often connected with specific experts, on several occasions have led to surprising findings, opening up new and wider areas of research.

Akzo Engineering's backlog of orders was at a satisfactory level in 1980. Work on some large capital investment projects for divisions, in addition to reservation of capacity for third parties, made it necessary to contract out part of the activities to others. Demand for Akzo Engineering's consultancy services, also by third parties, remained firm.

For the acquisition of patent rights for proprietary developments and for giving support to licensing activities the Group employs some sixty persons in Arnhem, Oss and Wuppertal (Federal Republic of Germany), of whom one-third are technically and legally trained experts. In the year under review much attention was devoted to fighting unjustified patent claims.

Despite energy savings, price hikes drove up energy costs to about Hfl 750 million, of which approximately Hfl 650 million was accounted for by our European plants. In 1980, a coordinator was appointed to promote optimal utilization of further energy conservation opportunities within the Group. Akzo Zout Chemie and Enka, our largest energy users, and Akzo Engineering possess great expertise in the field of energy conservation.

The various research activities are highlighted in the reports of the individual product groups.

Barmag Barmer Maschinenfabrik (Federal Republic of Germany) developed advanced technology film blowing machines for the plastics fabricating industry. Pictured here is the BF4-Baroflex machine for the production of multilayer food-grade film, with up to five layers.

This 24 MW gas turbine with two-stage waste heat boiler (cost approximately Hfl 21 million) now supplies almost all of the electricity and steam requirements of the Emmen fiber manufacturing facility. Thermal efficiency of this power plant is in excess of 80% – twice as high as the efficiency of the condensing steam turbine widely used by publicly owned electricity generating companies.

Membranes

A challenge for the future

Thirty-odd years ago the former Bemberg AG of Wuppertal-Barmen (Federal Republic of Germany) began work aimed at modifying cellulose films manufactured by the cuprammonium process to fit them for use as semipermeable membranes in separation processes. Closely cooperating with some progressive medical researchers, mainly in the United States, the company's scientists soon recognized the material's special suitability for such processes. A major contributory factor was, of course, that the medical world was already concentrating a great deal of effort on the design of the artificial kidney.

This marked the beginning of a period in which the supplier of packaging films gradually switched to the manufacture of ultra-thin hemodialysis membranes capable of removing waste products from the blood of kidney patients. These membranes had the right sort of properties for this medical application and spawned a series of improved and new types.

Enka AG, the parent of the Wuppertal-Barmen operation, today is the principal producer of artificial kidney membranes, which are supplied to medical equipment manufacturers the world over. Most of the artificial kidneys now in use have *Cuprophan®* membranes; globally, the number of patients undergoing periodical dialysis sessions is estimated to be 150,000.

Membranes are also used outside the medical field. In 1980, with the aim of optimizing exploitation of the Group's know-how and expertise, especially in the polymer field, and extending it to industrial applications, the membrane interests were organized in two companies, Membrana GmbH in the Federal Republic of Germany and Membrana Inc. in the United States, in which Enka AG and Akzona Inc. (through American Enka and Armak) participate on a basis of reciprocity.

Among the primary concerns of these joint ventures, whose policies are subject to coordination by a common management board, are coordination of membrane research and the exchange of results. Research centers involved are Obernburg and Wuppertal (Enka), Chicago (Armak) and Asheville (American Enka).

What is a membrane?

A current definition of a membrane would describe it as a film with semipermeable properties, which means that it passes certain components of a liquid or gas mixture, and stops others. The word membrane derives from the Latin *membrana,* meaning "skin".

Membranes are a creation of nature. They permit separation of phases in organisms and thus fulfill one of the most fundamental conditions for the development of life forms based on the cell. Membranes not only protect the cell outwardly but also make possible segregation of the various subsystems within it, while maintaining communication between the discrete phases mutually and the outside world.

Science took an early interest in separation processes using membranes. Its concern was particularly with the possibility of separation, fractionation and identification of molecules or particles of various substances in gases or liquids. These molecules or particles are induced to pass through the membrane by a difference in chemical concentration, in electrical potential, or in pressure.

Shortly after 1900, the possibility of using membranes in electrodialysis was first described. Before that, ultrafiltration processes had already been devised, which were to be widely used in industry.

Yet it was to last several more decades before further scientific and technological research into the complex relationship between membrane structure and separation properties would clear the way for large-scale application in industry and, especially, medicine.

Akzo and membranes

Akzo's knowledge in the membrane field derives largely from Enka's nearly eighty years of experience in converting cellulose into fibers, on the basis of both the viscose and the cuprammonium process. Quite early on, the conversion technology had given origin to the production of cellulose packaging films, which provided the starting point for the development and manufacture of dialysis membranes. The development of hollow fibers – the third generation of *Cuprophan®* membranes, with a structure resembling that of fine blood vessels – would have been unthinkable without familiarity with man-made fiber technology.

The polymer know-how available in the Group has likewise been helpful in blazing the trail toward the creation of synthetic membranes. A special role was played here by *Accurel®* polypropylene-based microporous polymer developed by Armak research in 1977. The chief uses envisaged for this material are in microfiltration, blood detoxification, and in controlled-release systems, which are particularly important in agriculture and in the pharmaceutical industry. The fact that the Group has major pharmaceutical operations (Akzo Pharma) should benefit the development of products for pharmacological and medical applications based on this polymer.

The vast medical and industrial application potential of membrane technology necessitated a reorganization of the Group's membrane-related R&D to increase its effectiveness. Additionally, it was decided to significantly expand R&D capacity.

Medical membranes

The effects of drugs and membranes in the treatment of diseases are different. Whereas pharmacology is based, in principle, on influencing a patient's metabolism through the *addition* of substances, membranes center on the direct treatment of the disease in that they *remove* metabolites.

Although apparently in opposition, the two approaches are in fact complementary, reconciling the increasingly complex demands of therapy. In the years ahead they should give rise to new ways of fighting disease, the outlines of which are now beginning to emerge. All this constitutes both a challenge, to the Group as well as to Akzo Pharma and Membrana, and a promise, which depends for its realization on the full exploitation of the synergistic potential.

In the principal field of application of membranes, kidney dialysis, no realistic alternatives are available as yet. There is nothing drugs can do about kidney failure, and transplants are a solution in a minority of cases only. So is peritoneal dialysis, which uses the membrane lining the cavity of the abdomen to remove waste products from the patient's blood.

The principle of the artificial kidney was already described before the First World War but was not tried on a patient until 1924. Even then another quarter of a century was to elapse before the Dutch physician Kolff so refined the hemodialysis technique that kidney patients could begin to be treated as a matter of routine.

Successive generations of *Cuprophan®* membranes (now supplied by Membrana GmbH) have made a major contribution to this development. The present range consists of flat and tubular membranes, with the addition in recent years of hollow fibers, used in a variety of dialyzer designs.

So far, kidney dialysis has been the principal medical use of *Cuprophan®* membranes but there is intriguing evidence that other diseases may be capable of being cured by means of hemodialysis. However, more fundamental research remains to be done by medical science before membranes can be deployed on a large scale to combat such diseases.

Besides hemodialysis and hemofiltration, Membrana is now developing membranes for plasma separating and fractionating systems. Connected with a donor, they permit the direct separation of the plasma from the blood cells, which are returned on-line to the donor's circulation. Therapeutically, plasma separating and fractionating systems are becoming increasingly important for the treatment of the serious condition known as auto-immunity.

Industrial membranes

In this field with its growing number of potential uses the Group is still largely in the development phase. However, its advance may be much helped by the invention of *Accurel®* microporous polymer.

One of the key areas for industrial membranes in the future is microfiltration in laboratories and in industry, where it should be of growing importance.

Holding out great promise is a new method of dehydration and concentration of suspensions, developed by our research on the basis of the cross-flow microfiltration technique, which may come to replace conventional methods using filter presses or other separators. The new technique to a very large extent prevents clogging of the membrane, as in ultrafiltration, by tangential flow. Occasional or periodical backflushing ensures long-term filtration efficiency, even if pore size is just 0.1 to 1 micrometer, for suspensions with solids contents up to 15%.

The new technique bids fair to become of major importance in process microfiltration which hitherto relied on dead-end filtration or had to have recourse to other, more energy-intensive, filtration techniques.

Membrana is also studying the problem of lowering the alcohol content of beer and other alcoholic beverages without affecting solids content and taste. Cooperation with a few breweries has been initiated.

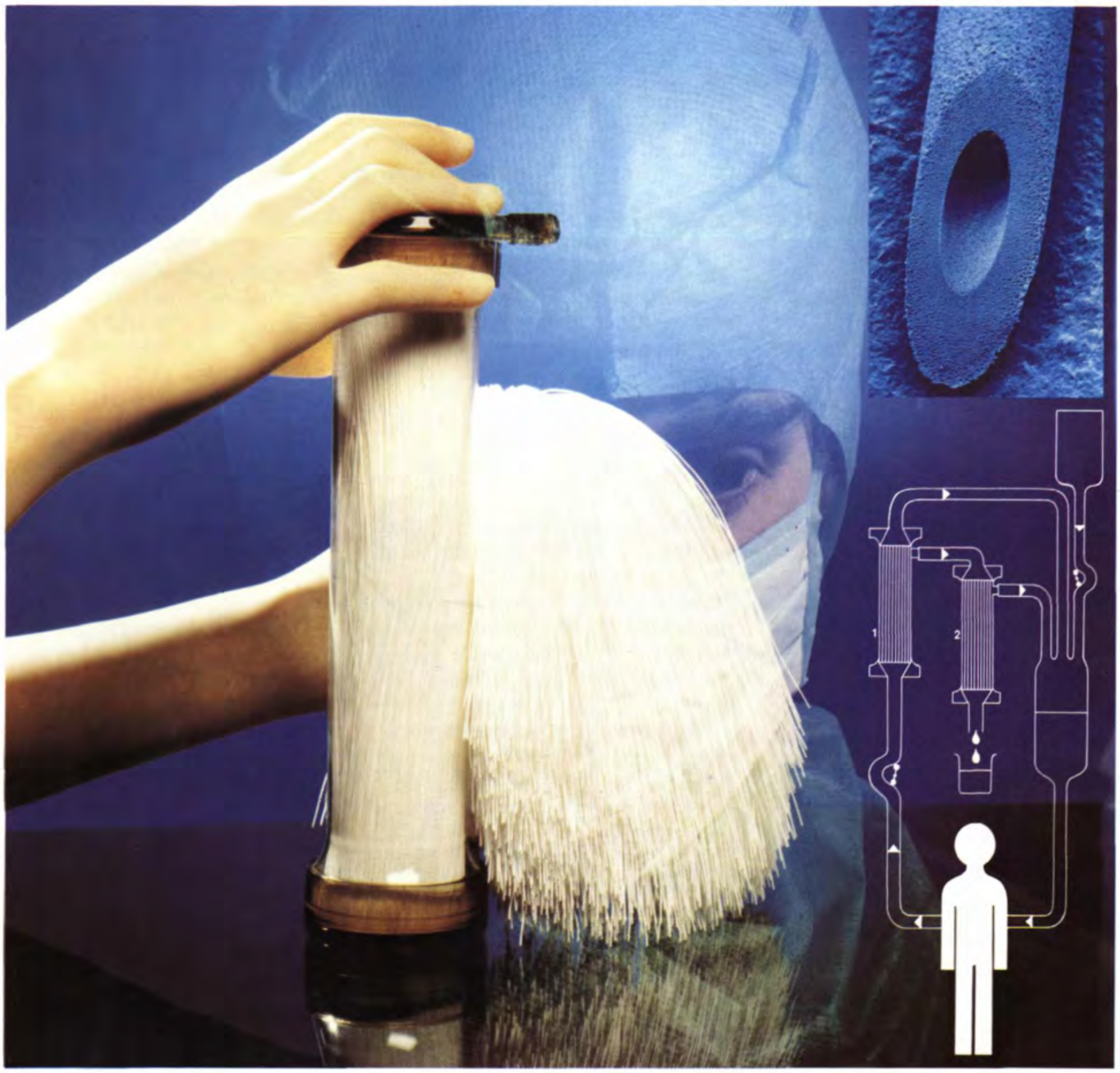
Outlook

Membrane technology and its uses (especially industrial ones) are in full development within the Group. A strong position has already been built up in the medical field worldwide, which, however, has to be buttressed and enlarged by further innovative activities. Given our potential of manpower and know-how we are confident of our ability to advance the solution of specific medical problems so long as continued cooperation with medical experts and institutes is ensured.

With regard to technical applications we believe that we will gradually capture a slice of the market in the years ahead, partly by virtue of specific know-how in the fields of microfiltration, ultrafiltration and reverse osmosis. In a world which is forced to make ever increasing allowance for the rising cost of energy and raw materials and which is committed to the preservation of a clean environment, membrane technology should have a promising future. We believe that the Group is well-placed to make the most of the opportunities available to it.

Membrana has successfully adapted the hollow fiber technology to the separation and fractionation of blood plasma. The plasma is separated from the blood cells in the first filter shown in the sketch; in the second filter it is separated into an albumin fraction and other protein fractions. The albumin fraction is then returned to the patient's bloodstream, together with the blood cells.

Development of the first filter has been completed and work on the second filter is in progress.
The top right inset pictures a hollow polypropylene fiber in cross section (magnification 40x).



Man-made fibers

in Hfl million	1980	1979	% change
sales: textile uses	2,663	2,817	(5)
industrial uses	1,119	1,035	8
total	3,782	3,852	(2)
operating income	(170)	74	
operating income, as percentage of sales	(4.5)	1.9	

For details on the restructuring program for the textile and carpet fiber sector of Enka Europe the reader is referred to the sections General Review, Financial Review and Human Resources.

Man-made fibers for textile uses including carpets

The average rate of capacity utilization of our fiber plants in Western Europe decreased to less than 80% because of a further rise in imports and a reduction in inventory levels in the fiber processing industry. American Enka's synthetic fiber plants reported an average capacity utilization rate of 80%.

Volume sales of our *polyester textile filament* were substantially lower, while revenues in Western Europe were squeezed by U.S. competition. This made it necessary to work shorter hours in some Enka plants. Rationalization projects for Enka Europe and American Enka which are aimed at a substantial decrease in the cost of polyester filament production are now largely completed.

The almost saturated carpet market in Western Europe still offers opportunities for companies marketing *polyamide carpet filament* specialties, a sector in which Enka has always held a leading position. Competition of U.S. imports, including carpets, was particularly disastrous for British Enkalon. American Enka had to cut back its carpet fiber production for quite some time and was compelled to switch temporarily from the production of *polyamide carpet staple* to the production of polyester staple for textile applications, using the same equipment.

Production and sales volumes of Enka's *polyester staple* were largely maintained, but the results were negative, notably in exports.

Rayon textile filament and staple continued their favorable development of recent years. The unique position which the Group acquired for its rayon products is highlighted in the section on these products.

In the other countries where we have establishments, mainly in Latin America, business remained satisfactory. It was decided to implement programs for the extension of synthetic textile fiber production capacity at Fibras Químicas (Mexico), Enka de Colombia and Petroquímica Sudamericana (Argentina). Finance will be arranged by these subsidiaries.

Man-made fibers for industrial uses

The decline in Western European automobile production, accelerated by growing imports from Japan, in the second half of 1980 had a distinct impact on the tire industry. However, the industry was able to benefit for quite some time from fairly stable demand on the replacement market.

For Enka Europe's *rayon* plants the adverse influence of these factors on production and shipments was offset by the termination of tire yarn production by others, resulting in almost full capacity utilization of these plants. Despite the strengthened market position, selling prices failed to keep pace with increased costs.

Steel cord shipments were down from the 1979 level, and sales were again unprofitable.

The recessionary economy strongly affected the performance of our *synthetic yarns,* which are finding application in auto tires, conveyor belts, safety belts, nets, and ropes. Shipments and price levels in this sector also came under pressure of strongly growing yarn imports from the United States.

Shipments of synthetics in the form of fabrics and other constructions for new applications, including drainage, erosion control, turf reinforcement in playing fields, and the sealing of refuse and waste disposal pits, are making progress. In the United States, American Enka is now also moving successfully into this market.

With *Enka Carbolon* carbon fibers, developed by Nippon Carbon Ltd, Enka added a new line to its product range. If the anticipated sales opportunities for this light-weight, high-performance fiber materialize, we may take production in our own hands.

For *Arenka*®, an aromatic polyamide yarn with very high strength and modulus, market development with yarns from the pilot plant was undertaken vigorously.

Rayon filament and staple

Enka's *rayon filament* and American Enka's *rayon staple* are not beset by the problems that plague synthetic textile filament and staple. There is no overcapacity, and these rayon products have regularly made a positive contribution to results.

The superior position rayon products formerly occupied in the industrialized countries crumbled after the Second World War with the advent of synthetic fibers. Major factors in the shift toward the synthetics were the properties of the new materials and the cost advantages, although up to this very day rayon products have managed to hold their ground in certain market segments. Overall, however, rayon production in Western Europe, North America and Japan declined 30% since 1969, whereas world production was virtually unchanged.

After the 1973 oil crisis the cost advantages of synthetics grew less significant due to escalating prices of oil, the principal feedstock for all synthetics. For rayon products the major basic material is cellulose, which can be made from renewable stocks of timber at relatively

Three rayon products which are still very much alive: textile yarns made into dress and lining fabrics, industrial yarns for auto tires, and staple for textile and sanitary products.

low energy costs. Also, the price of cellulose has risen at a considerably lower rate than petrochemical feedstocks. Among the drawbacks are the high expenditures for pollution control in rayon plants and the high costs of labor and energy, which should not be underrated.

The Group is currently operating 9 rayon plants in the Netherlands, the Federal Republic of Germany, Austria, Spain, and the United States, and in 1980 recorded aggregate shipments of 163,000 metric tons and sales of about Hfl 1.1 billion. With the product range of these plants the Group occupies a comparatively favorable market position, which was further enhanced in recent years because of plant closures by other producers.

This position is primarily due to tight control of the exacting production process and to the resulting high quality level of the products, which has given us a decisive edge over our competitors. This is true for rayon textile yarns as well as for rayon tire yarns, for which products we are a world leader.

New applications and processes may further strengthen the base of our rayon operations. One instance where this potentiality was realized is American Enka, where approximately half of the total output of rayon staple is now being sold to the growing nonwovens industry. Also, American Enka research managed to develop an entirely new process for the production of cellulosic fibers *(NewCell).* Capital expenditures and energy costs are significantly lower, and the process has a minimal impact on the environment. Production on pilot-plant scale is yielding satisfactory results.

Our expertise in the field of rayon makes us confident that our rayon products will maintain their share in the product mix of Enka Europe and American Enka, despite a slight overall decline in consumption. This once again illustrates that "old" products possess greater vitality than many thought possible.

Research and development

Enka's textile fiber research developed an entirely new filament type which was introduced in the year under review. Named *Diolen Ultra®*, the matrix-type polyester/polyamide yarn is composed of numerous monofilaments of high fineness which give it a very soft silk-like feel and excellent moisture transport.

Textile fiber research further conceived modifications in production equipment which lowered manufacturing costs in the year under review; its own costs were also down.

Industrial fiber research was successful in endeavors to develop integrated manufacturing processes for high-denier and low-denier heatset and non-heatset yarns. This work has already given rise to major capital expenditures for cost reduction. Among other developments were new finishing agents, and an *Arenka®* aramid/rayon tire yarn embodying the optimum balance between price and performance. We foresee good sales opportunities for a new type of polyester yarn which permits significant economies in the production of coated fabrics.

Chemical products

in Hfl million	1980	1979	% change
sales: salt and heavy chemicals	2,174	2,237	(3)
specialty chemicals	1,375	1,244	11
total	3,549	3,481	2
operating income	183	253	(28)
operating income, as percentage of sales	5.2	7.3	

Salt and heavy chemicals

Earnings of this product group, which has operations in northwest Europe, the United States and Brazil, were approximately 40% lower than in the previous year on account of the recession. Business for certain chlorine-based products experienced a sensible check in the second half of the year.

Salt

Both Akzo Zout Chemie and International Salt (Akzona) recorded a decline in shipments of *industrial (electrolysis) salt* and *highway salt* compared with 1979.

Akzo is the world's largest producer of salt: mined, solar and evaporated. With respect to evaporated salt, mounting energy costs should gradually place it at a disadvantage for certain uses if there is no change in policy. Alternative investment options in regard to existing production facilities and in-plant energy consumption are being elaborated, and the competitiveness of solar and rock salt is being studied in depth. Work in this area has been given a high priority.

Chlor-alkali products

The collapse of the PVC market in the second half of 1980 sharply reduced earnings from sales of *vinyl chloride monomer* and caused capacity utilization problems in our electrolysis plants.

Caustic soda, the co-product of *chlorine,* came to be in short supply because of lower demand for chlorine; as a result, European prices improved.

Soda prices were also up, due to lower pressure of imports from the Comecon countries and the United States. The price of natural soda ("trona") from the United States rose because of the higher cost of mining and transportation. A renewal of the pressure from imports remains a possibility, however, which is why we continue efforts to bring about a better geographical distribution of shipments. We also continue to press for speedy consideration of complaints of dumping practices.

Other commodity chemicals (Akzo Zout Chemie)

Organic solvents were also hit by poor business conditions in the second half of 1980.

Earnings for *chlorinated hydrocarbons* were at a reasonable level, given the unfavorable economic environment.

The impact of the recession on business for *monochloroacetic acid* and *herbicides* was scarcely perceptible, with earnings even higher than in 1979. Exports of monochloroacetic acid from Japan (Denak) to countries in Southeast Asia were down sharply, especially because of the higher value of the yen.

The butanol plant in the Rotterdam area will terminate its operations on April 1, 1981. The plant will be taken over by Essochem Holland Inc. and will subsequently be converted for the production of higher alcohols.

Production of *methanol* was cut back because of a temporary dip in demand, although there was no marked reduction in sales revenue.

Construction of a third methanol plant at Delfzijl (the Netherlands) is being considered.

Other commodity chemicals (Akzo Chemie)

Fair earnings were on the whole recorded for *sulfuric acid, carbon disulfide* and *carbon disulfide derivatives.* A sulfuric acid unit on the Amsterdam-Noord site was brought on stream again after being mothballed for years.

Shipments of *sulfo products* to the saccharin industry were under pressure of aggressive competition from countries in the Far East.

Production of *silicates* (mainly *water glass*) is being subjected to a restructuring program involving our plants in the Netherlands (2) and the Federal Republic of Germany (1).

The production of *chlorofluorocarbons* was increasingly being slowed down by slackness in the aerosols market caused by theories that these propellants could be depleting the world's ozone layer.

Research and development

Efficiency improvement and energy conservation in chemical processes continued to be central concerns in 1980.

For certain commodity chemicals, major process modifications and innovations are on the horizon.

Installation of a process information system in the two Dutch methanol plants (Methanol Chemie Nederland and Methanor) helped achieve a significant cut in power consumption.

With our interest in solar salt growing keener, we enriched our store of knowledge of solar salt production.

Specialty chemicals

Taking into account the recession in the second six months, sales and operating income of this product group held up rather well, compared with 1979.

Akzo Chemie concentrated the activities of two Dutch sales offices in its Amersfoort headquarters. The Amsterdam-Noord operation began a drastic rationalization program in an effort to improve the

Akzo Zout Chemie is a partner in the production and sale of methanol, which is made from natural gas in the two plants at Delfzijl (the Netherlands). Together they have an annual capacity of 700,000 metric tons. Methanol is rapidly growing in importance for such relatively new fields of application as the manufacture of acetic acid and motor fuels.

production and cost structures for catalysts and certain other industrial chemicals.

Cooperation between Akzo Chemie and Armak (Akzona) in R&D was intensified.

Products for plastic and elastomer manufacturers and processors

In Western Europe as well as in the United States, the plastics industry was hit comparatively hard by the recession. The materials affected included PVC, polyethylene, polystyrene, and unsaturated polyesters. *Initiators (organic peroxides)* and *stabilizers* used in manufacturing these plastics are supplied by us and produced in facilities in the principal industrial regions of the world. Despite the recession, earnings from these products were at a reasonable level.

Peroxide production capacity in the United States, the Netherlands, and Belgium was expanded through the addition of facilities manufacturing new initiator types.

Attractive properties of Nouryset® 200 *polymer, including fine clarity, high impact and scratch resistance, and superior chemical and heat resistance, make this organic glass an excellent choice for high-quality lenses in optical instruments and spectacles.*

The new Amdic S.A. dicumyl peroxide plant at Mons (Belgium) is a joint venture with Mitsui Petrochemical Industries. The development of the new generation of tin stabilizers (ester tins) was slowed down by the deterioration of business in the PVC industry.

The second plant for the production of *EC-black*, a carbon black possessing outstanding conductivity properties, was inaugurated in Japan. The plant is managed by Lion Akzo Co., a joint venture with the Japan-based Lion Corporation.

Akzo Chemie developed a proprietary process for the manufacture of *Nouryset® 200* monomer; its polymer (organic glass) is eminently suited for use in high-quality lenses. Introduction of the product in the year under review progressed satisfactorily.

Organic chemicals

Fatty acids and *fatty amines/amides,* for the greater part used in the detergents industry, are the principal items in this group of chemicals. While progress was made on the solution of the chemical and technological problems in the Mons (Belgium) plant, the Western European market is static, with persistent downward pressure on prices. It was decided to expand capacity in the United States (Armak) and in Japan (Lion Akzo). Most of the Japanese output goes to Lion Corporation, a major producer of detergents.

Better results were achieved for the other organic chemicals (mainly surfactants), such as *paper chemicals, sequestering agents* and *gluconates.* A factor in this improvement was capital investment designed to raise productivity.

Catalysts

Desulfurization catalysts were again selling well. It was decided to expand production capacity of our establishments in the United States (Armak), Japan (Nippon Ketjen) and the Netherlands (Amsterdam-Noord).
The fact that refineries are processing a growing volume of heavier oil fractions (shortly to include those from shale and tar sands oil) which are higher in sulfur should benefit catalyst sales.

Strong demand for our new *cracking catalysts* occasioned a decision to undertake a substantial program of modernization and expansion. Realization of this program in the spring of 1982 may bring a significant improvement in the unsatisfactory earnings picture.

Income from the other catalyst types was gratifying.

Japan

Over the past decade Akzo Chemie has made a conscious effort to strengthen and expand operations in this highly industrialized country. As a result we now have Japanese ventures, established jointly with local business, in the fields of *organic peroxides* (Kayaku Noury), *desulfurization catalysts* (Nippon Ketjen), and *fatty amines/amides* and *carbon black specialties* (Lion Akzo). Additionally, there are standing arrangements for commercial and licensing activities.

These companies, which in the main started their life on the basis of our know-how, have joined the existing research cooperation between Akzo Chemie (Europe) and Armak (United States), which makes for a smooth transfer of Japanese-developed know-how to other Group companies.

Research and development

The principal research programs are concerned with *tin stabilizers, cracking catalysts* and *catalysts* for use in the production of *acrylonitrile,* as well as with *telomeric acids and derivatives,* and *specialty isocyanates.*

Modest economic growth projections oblige us, more than ever, to measure research efforts against chances of realization of new projects.

Coatings

in Hfl million	1980	1979	% change
sales	1,432	1,221	17
operating income	110	98	12
operating income, as percentage of sales	7.7	8.0	

Akzo Coatings continued its favorable development in 1980. Admittedly, the effects of the recession began to be felt in a number of product sectors, but this was offset by several positive factors. Of major importance for the company's market position is the high quality of its products, together with regular improvements in, and additions to, the range. This has permitted a significant internationalization of activities, of which Akzo Coatings is now increasingly reaping the fruits.

Our shares in the Group companies Ivanow and Miluz were enlarged to reinforce our interests in Spain and Argentina. At the urging of the government of Tunisia our stake in operations there was reduced to a minority holding.

House paints and do-it-yourself (DIY) paints

Despite lower building activity we were able to further strengthen our position in the trade market. One factor in this success was a promotional campaign built on the central theme of color. Our impression that quality products still command a ready market was confirmed by growing orders for *Rubbol® S.B.* This highly durable outdoor paint based on proprietary resins was successfully launched in the Benelux market.

Our ability to supply a broad range of colors by means of the color-mixing machine helped us maintain our share in the DIY market. So did our improved position in the so-called superstores. It is true, however, that the falling number of household moves is having a perceptible negative effect on sales of DIY paints.

Automotive finishes

For our plants the steep plunge in the production of automobiles in Western Europe translated into substantially reduced volume sales of *automotive finishes* to the industry and to its suppliers.

We note growing interest in various parts of the world in our water-thinnable products. In early 1981, a leading German auto maker adopted the use of a solvent-free primer-surfacer. We were able to accomplish further introduction of our basecoat/clearcoat metallic system, and some licenses for the system were granted.

Auto refinishes

The slump in auto manufacturing also hampered growth in consumption of *auto refinishes.* A systematic approach to the various market segments nevertheless enabled us to increase our market share. A case in point was the United Kingdom where we launched our products a few years ago. Introduction of the time and labor saving *Autocryl® Filler* in many European countries strengthened our position in priming materials.

Other coatings

In *coil coatings* our leadership in France was consolidated. In Italy, sales benefited from increasing demand for plastisols, which produce a tough weather-resistant coating.

Consumption of our *aircraft coatings* is growing internationally. The rise in importance of the European aircraft industry is a key factor in strengthening our position.

The chemical industry is among industries expressing growing interest in high-specification *anticorrosion coatings.*

Synthetic resins

This class of products was hit by dwindling auto sales and price hikes for a few important raw materials.

An extension of research facilities enables the product group to step up development of resin specialties for use in sectors with lower exposure to cyclical swings. Many more laboratory procedures were automated.

Research and development

The technological base of our principal products was broadened and strengthened in the year under review. Areas of progress include:

- water-thinnable coatings for the automotive and other industries;

Resikote®, *a two-component coatings system, gives steel attractive appearance in addition to excellent protection.*

- patented sag control agents which reached market maturity;
- basecoat/clearcoat metallic coatings for the automotive industry;
- one-coat paints for electrophoretic application, with controlled gloss and hue;
- new coil coating products;
- new radiation-curing resins with improved adhesion to metals and plastics;
- special printing ink auxiliaries and dispersions;
- universal low-temperature-curing paint systems for trucks;
- a compact computer-based labeling system which meets EEC and other Western European requirements.

Further efforts were made in the year under review, by means of publications and the transfer of knowledge to customers and potential users, to raise the quality of application technology.

Pharmaceuticals

in Hfl million	1980	1979	% change
sales	1,320	1,274	4
operating income	145	134	8
operating income, as percentage of sales	11.0	10.5	

Sales of this product group again showed only moderate growth. Operating income was 8% higher than in 1979.

With the take-over of AAgrunol by Fisons Ltd completed at September 1, 1980, Akzo Pharma abandoned the market of crop protection products.

In the year under review a study was undertaken into the potentialities of recombinant DNA technology with respect to pharmaceuticals. A preliminary investigation is being carried out in cooperation with a U.S. institute which is highly specialized in this field.

Ethical drugs

On average, this product sector showed a reasonable sales gain. Our operations in France and the United Kingdom were very satisfactory. In the Federal Republic of Germany a decline in sales of preparations for the treatment of cardiovascular diseases (Thiemann) was offset by substantial growth in sales of the antidepressant *Tolvon®*. Similar growth was recorded in many other countries, where this effective and comparatively safe antidepressant is one of the most widely prescribed drugs.

Translation into guilders at lower rates of exchange reduced earnings, notably in Brazil.

Higher revenue due to volume gains was offset by cost rises.

Our internationally conducted research in the field of cardiovascular diseases resulted in the development of *Cordium®*, a preparation possessing unique properties for the treatment of angina pectoris. Countries that have registered the drug include France and Brazil; in these two countries the product will be launched in 1981.

Continued efforts to seek health registration of Organon's new "pill" based on a new progestational component will lead to its first introduction in 1981.

Considerable progress was made in the development of a *neuropeptide* for use in geriatrics.

The activities aimed to further broaden our base through acquisition of products and licenses were pursued vigorously.

Integration of R.E.T.I. (France) was completed through acquisition of the outstanding block of shares (34%).

Hospital supplies

The pressure placed on hospital expenditures was reflected in keener competition with decreasing prices for all product classes. This was particularly felt in the ultrasound sector in Europe and the dialysis sector in the United States.

Organon Teknika was again able to introduce a number of new and improved products in the field of dialysis and diagnostics.

The company's organization was considerably strengthened by the move to the new international headquarters in Turnhout (Belgium).

Non-prescription drugs

In this sector there was a slowdown in sales growth and earnings were down from the prior year.

The introduction of a common cold remedy *(Cold Control)* in the United Kingdom was disappointing. In the Netherlands volume sales of pain killers were depressed due to adverse publicity, while Chefaro's anti-acne preparation *(Axolon®)* faced keen competition. These negative factors were offset in part by the introduction of a new anti-acne preparation *(Akiba®)* in the Federal Republic of Germany and the successful launching in Mexico of *Predictor®*, Chefaro's reliable home test for pregnancy.

Plans were made to introduce in some countries the enzymatic toothpaste *Zendium®* of Akzo Consumenten Produkten through the Chefaro sales organization.

Raw materials for the pharmaceutical industry

The adverse market development in this sector continued unabated.

The *alkaloids* product group was confronted with further price declines for *narcotic drugs* because of the continued market glut. Nevertheless, the purchase of adequate supplies of reasonably priced raw materials enabled us to attain acceptable results and to safeguard in large measure production and shipments for 1981.

In the *biochemicals* sector lower selling prices were recorded for nearly all products due to abundant supply. Rationalization of production afforded some compensation. Considerable progress was made in the development of improved *anticoagulants* and some material was made available for clinical testing. The purity of *insulin* was further improved.

The *pharmaco-chemicals* sector was able to maintain its important position in the market for *steroids*, despite the fact that it, too, was exposed to some price erosion, which, however, decreased in intensity as the year wore on. The culture of *solasodine* in New Zealand was hampered by some problems; consequently the envisaged scale of production was not yet realized.

Veterinary products

With sales and profitability rising, Intervet continued the favorable trend of recent years, thanks mainly to its new, in-house developed products.

The strong position which Intervet has in Europe with its veterinary specialties warranted the take-over of Inter-Continental Biologics Inc. in the United States. The first construction stage of new ICB facilities for the production and development of *vaccines* for the largest market in the world will be completed in the course of 1981.

In Mexico a new plant for the production of vaccines came on stream, resulting in a much broader product range for this country. In the Netherlands the construction of a new headquarters and of a new biological pilot production plant is under way.

Organon International's latest addition to its research facilities at Oss (the Netherlands). The new building houses pharmaceutical research, analytical research, and the technology department.

Consumer products

in Hfl million	1980	1979	% change
sales	869	725	20
operating income	40	31	29
operating income, as percentage of sales	4.6	4.3	

Margins of the majority of our products were again pinched in 1980. By and large the effect was greater on our Dutch operations than on foreign subsidiaries. Conscious control of production and marketing costs was among the means which nevertheless helped achieve reasonable operating income.

Detergents and cleaning products

In the Netherlands, *Biotex*® soaking agent had little difficulty in holding its ground. *Dobbelman*® household detergent was up against heavier sales resistance due to stiff competition in the low-price end of the detergents market. Our *Topsi 60*® detergent was launched in response to concern for energy conservation.

In Belgium, Denmark and Norway earnings varied from fair to excellent. Reintroduction of *Biotex*® in the United Kingdom is making encouraging progress.

The Otarès group, which markets cleaning systems, again performed well. Our Norwegian operations base was strengthened.

Health and bodycare products

A major step toward further internationalization of this product sector was the acquisition of Ashe Laboratories, United Kingdom. It is currently being investigated whether the benefits from the widened product range could perhaps be augmented by intensification of activities.

The performance of Recter was at a lower level than in 1979, mainly due to a margin squeeze for *Roosvicee*® rose hip syrup. The successful introduction of *Zendium*® toothpaste in the previous year yielded promising results and perceptibly strengthened Recter's range. Meanwhile, this enzymatic paste has been introduced in Finland, Denmark and Portugal, and further internationalization is scheduled. The position of *Zwitsal*® baby- and bodycare products was bolstered in Belgium and other countries. Boldoot launched its new *Carte Blanche*® line of toiletries and thus made a significant contribution to product innovation.

Foodstuffs

In 1981 the Duyvis company in Zaanstad will begin rationalization of its production of party snacks and will take steps to improve storage facilities. In the year under review several products were introduced, or reintroduced, in the Dutch market. Margins of *Duyvis*® products again suffered from intensified competition. With *Duyvis*® party snacks now in process of introduction in Belgium, the base of production at Zaanstad has been broadened. Fino Fabrieken of Harderwijk, the producer of *California*® soups, was operating at full capacity, with sales in the Netherlands at a high level. California België also did well.

Mayolande S.A. (France) looks back on an excellent year. Competition in nuts and sauces is stiffening, however. We plan to consolidate Mayolande's position through its strong *Benedicta*® and *Benenuts*® brands.

ROMI (Vlaardingen) benefited from the market development for oils and fats. Exports were a major factor in its satisfactory performance.

Research and development

In line with government policy seeking drastic reduction and, if possible, complete elimination of phosphates in detergents, we are developing a novel phosphate-free detergent.

In all sectors of the division, product innovation programs are being implemented. The safety of each ingredient of a new product is carefully screened to establish compliance with moving regulatory targets.

Miscellaneous products

in Hfl million	1980	1979	% change
sales	1,670	1,595	5
operating income	116	132	(12)
operating income, as percentage of sales	6.9	8.3	

The group of miscellaneous products covers Enka and Akzona lines. Within this group each product class had its own pattern of development; the net result of these individual developments was a 5% rise in sales and a lower operating income, compared with 1979.

Enka products

Business for Barmag Barmer Maschinenfabrik was not unsatisfactory. Viewed against a recessionary background, sales of *machinery and equipment* to the man-made fiber and plastics industries, which have embarked upon modernization and automation programs, were at a reasonable level. Volume sales of products for the elevator industry (*hydraulic equipment*) and for the automotive industry (*hydraulic valves, vacuum pumps for servo-assisted braking systems*) sustained their satisfactory development.

Dialysis membranes could not maintain the high level of shipments of 1979 because of inventory adjustments by a few customers. Earnings were only slightly lower, however.

For Akzo Plastics the economic recession primarily had the effect of keeping sales and operating income of *spinning granules* well below the 1979 level. For *engineering plastics,* sales were off but operating income was only slightly lower than in the previous year because of the growing share of specialty products.

Hopes expressed in our previous annual report that volume sales of *Arnitel® thermoplastic elastomers* would grow substantially were only partly realized. Akzo Plastics and a U.S. company each took legal action against the other to establish the validity or otherwise of a number of patents

In view of environmental regulations in a number of countries, the use of *Arnite® thermoplastic polyester bottles* will hinge upon the finding of a satisfactory system for the collection and returning of empties. In itself the recovery of the material through depolymerization poses no problems. In the United Kingdom the bottle-making plant of Strongpac Ltd, a subsidiary of the joint venture Strongpac Enka-PLM was completed in 1980.

Industrial Colloids continued to benefit from the growing volume of exploration by the oil industry. Demand for *drilling mud additives,* which the product group sells to almost all oil countries, could barely be satisfied.

In the teeth of slackness in the building industry and of an indifferent carpet market, the Colbond product group was able to increase volume sales of *nonwovens* for industrial uses and for carpet backing.

Akzona products

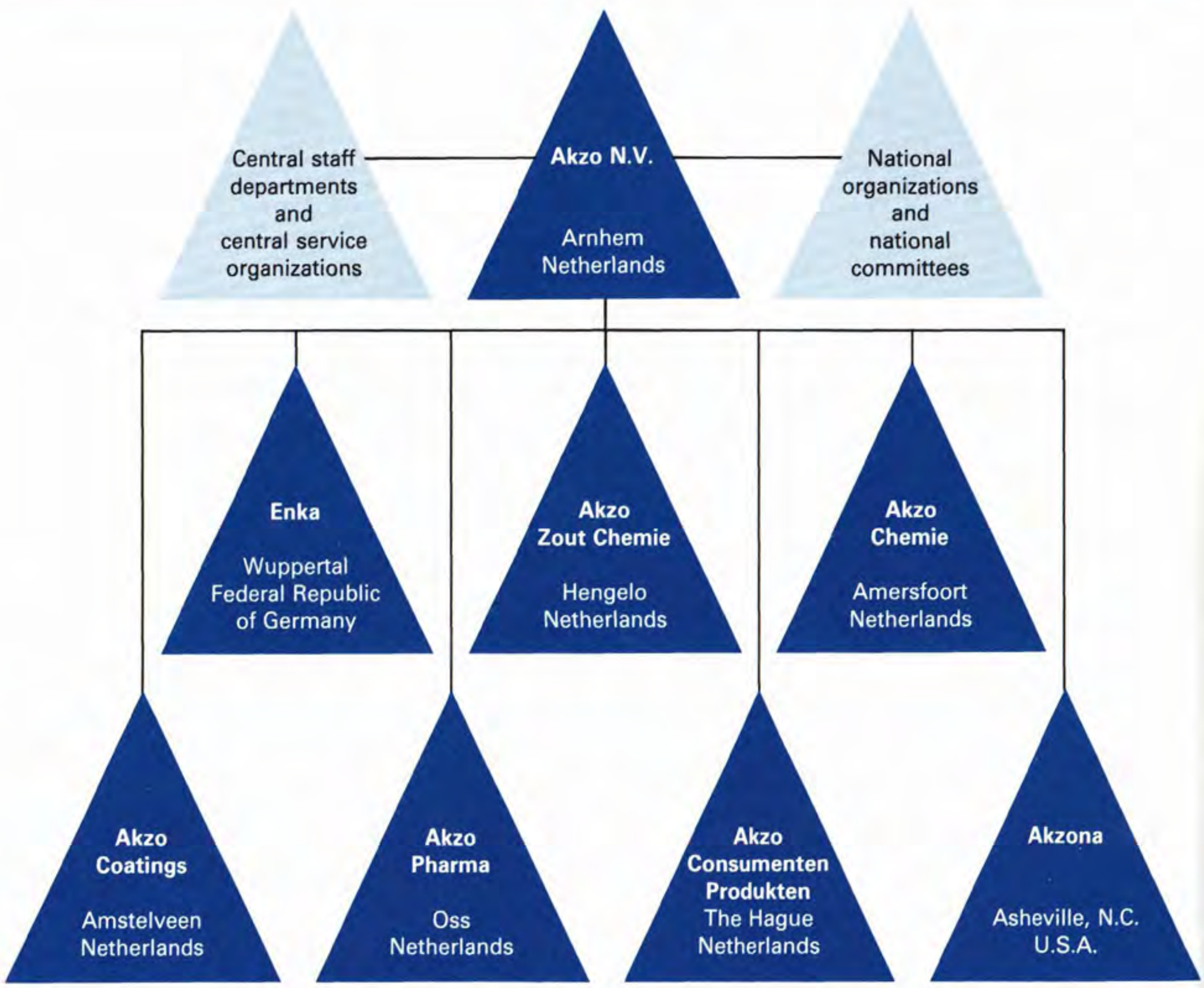
Brand-Rex, a producer of electrical and electronic connectors and systems, was scarcely affected by the recession, and even reached record levels in sales and earnings. The positive trend in its business which has been evident in the last few years must be ascribed to broad diversification through acquisitions and the development of markets in growth areas. The division has production facilities in the United States, Canada, the United Kingdom, and Switzerland.

Armira benefited from a better leather market, with significantly reduced prices of hides relative to 1979.

Arnhem, March 27, 1981

The Board of Management

Organization of the Akzo Group



Akzo N.V. is the Group's *holding company* with direct and indirect interests in a number of companies. Together they constitute the Akzo Group.

The business activities of the Group are organized in product-oriented *divisions.* Each division combines all activities relating to the development, manufacture and sale of a number of similar products. The six divisions operate internationally. In North America, nearly all Akzo's interests are incorporated in Akzona Inc., which is 66% owned by Akzo N.V.

The board of management of Akzo N.V. is assisted in its management function by *central staff departments* located in Arnhem.

In addition, there are *central service organizations* working for the Group and in some specific cases also for third parties. They include:

Corporate Research, Arnhem/Obernburg
Akzo Engineering, Arnhem
Akzo Data Services, Arnhem
Akzo Systems (consultancy on information systems), Arnhem
Rijnconsult (organization consultancy), Arnhem

In some countries national organizations exist which have a coordinating function and render services to local Akzo companies.

Management

March, 1981

Board of Management of Akzo N.V.

The board of management is the highest executive body in the Akzo Group.

The executive committee is a part of the board of management and is composed of the president and the two deputy presidents, viz. A.G. van den Bos, A.A Loudon and J.A. Wolhoff.

The executive committee is concerned with the broad issues of the Group's orientation and strategies and as such has no direct operational or functional tasks and responsibilities. There does exist a division of work among the members which is also based on geographical policy aspects, while Mr. Loudon is additionally entrusted with responsibility for social policy, public affairs, organization, and pension affairs.

Two members of the board of management are responsible for several functional areas:

M.W. Geerlings	research and development, technology, engineering, safety and environmental affairs, energy, quality control, patents
H.J. Kruisinga	financial, accounting, legal and fiscal policies, automation affairs, internal auditing, insurance

The following board members are in charge of the operational units of the Group:

H. van Doodewaerd	Akzo Consumenten Produkten
A. van Driel	Akzo Coatings
J. Veldman	Akzo Pharma
H.J.J. van der Werf	Akzo Zout Chemie
M.D. Westermann	Akzo Chemie
H.G. Zempelin	Enka

Secretary to the board of management and to the supervisory council is J.P. Huges.

Acting as adviser to the board of management is W.K.N. Schmelzer, specifically in relation to international affairs and issues of a general social nature.

Central staff departments

Officers

M.W. Arts	internal auditing
S. Bergsma	financial affairs
Mrs. M.A. van Damme-van Weele	chemical development
A.M. van Haastrecht	organization
C. Hoek	legal affairs
H.S. Jongepier	safety and environmental affairs
J.H. Katgert	accounting and management information
J.K.G. Meijnen	insurance affairs
H.W. Muzerie	group development
O.H. Nijman	fiscal affairs
R.J. Ovezall	corporate personnel affairs and public affairs
P.J.S.Th. Stehouwer	research and development
T.M. Tieleman	economic affairs and planning
A.W. Zijlker	computer affairs

Other staff officers

B. Klaverstijn	information
E.W. Meier	international relations
P.W. Pfeiffer	energy and quality control
R. Sieders	patents

Akzo Engineering

J.R. Eppenga

Managements of divisions

Enka

H.G. Zempelin	president
J.R. Hutter	deputy president
H. Stöhr	
G. Tückmantel	
J. Verhaar	
A. Bendziula	
D. Sorgdrager	

A distinct unit of Enka is
Enka International

S. Minnema	president
G.G. Cerutti	
R. van Wingerde	

Akzo Zout Chemie

H.J.J. van der Werf	president
F.A.G. Collot d'Escury	
J.H. Dijkema	
A. van Es	

Akzo Chemie

M.D. Westermann	president
J.C.P. van Oosterom	
H.C. Bijvank	
M.E. Hartman	
J. den Hoed	
D.B. Kagenaar	
A. Moolenburgh	
H.A. Praetorius	
E. Snoeck	

Akzo Coatings

A. van Driel	president
C. Zaal	
K. Bakker	
J.W. Berghuis	
R. de Bonneval	
W.L.W. Ludekens	
K.G. Schultze	

Akzo Pharma

J. Veldman	president
J.H.H. Florax	
W. Smit	
B.H.M. van Dommelen	
F.L. Vekemans	
A.G. Vermeeren	

Akzo Consumenten Produkten

H. van Doodewaerd	president
M.A. Hoolboom	
P.B. van Hulst	
H.B. Jacobs	
A.M. van der Linden	
J.E.H. Sikkink	

Managements of national organizations

Akzo Nederland

W.J. Wolff	president
A. van Es	
P. Hollander	
D.B. Kagenaar	
A.M. van der Linden	
W. Smit	
D. Sorgdrager	
G. Tellegen	

Akzo België

F.C.L. De Deken	president

Akzo Indústria e Comércio, Brazil

J.M. Hessels	president

Mercator Internationaal, Japan

T. Haruki	managing director

Principles of consolidation

The consolidated financial statements include Akzo N.V. and all companies in which Akzo N.V. or any of its majority subsidiaries has an interest, directly or indirectly, of more than 50% of the outstanding voting stock. 100% of the assets, the liabilities and the results of the consolidated companies are included. Minority interest in Group equity and Group income (loss) is shown separately.
The principal affiliated companies are listed on pages 55 and 56. A list of names and registered offices of affiliates, drawn up in conformity with article 2:320, paragraph 2, and using paragraph 3, subpara a, of the Dutch Civil Code, has been filed at the Trade Registry of Arnhem.

Principles of valuation and determination of income

The valuation principles for property, plant and equipment, investments in non-consolidated companies, other non-current assets, inventories, prepaid expenses, securities included in cash and marketable securities, and provisions are stated separately in the notes to the consolidated balance sheet.
Receivables, cash and liabilities are stated at face amounts, less such provisions for receivables as are deemed necessary. The parts of long-term receivables and long-term debt becoming due within one year are included under short-term receivables and other current liabilities, respectively.
Preparation and start-up expenses of large investment projects are capitalized and charged against income, in not more than five equal annual installments, after the facilities concerned have been put into service.
Other intangible assets, which include exploitation rights, are not capitalized; they are charged against operating income.
Purchased goodwill is charged directly against Group equity.

In the consolidated balance sheet, amounts in foreign currencies have been translated into guilders at rates virtually equal to the rates of exchange in force at year's end. The valuation in guilders of the U.S. dollar convertible debentures is based, however, on a rate of U.S. $ 1 = Hfl 3.60, except for the portion due within one year.
In the consolidated statement of income, foreign currencies have been translated into guilders at rates of exchange fixed for each quarter as typical of the rates then applicable.
Foreign exchange differences are included in income, except for foreign exchange differences resulting from translation into guilders, at changed exchange rates, of stockholders' equities of affiliated companies outside the Netherlands; the latter differences are directly added to, or deducted from, Group equity.
The principal exchange rates used in drawing up the balance sheet and statement of income are:

		balance sheet		statement of income	
	unit	Dec. 31, 1980	Dec. 31, 1979	1980*	1979*
U.S. dollar	1	2.13	1.91	1.99	2.00
Deutsche mark	1	1.09	1.10	1.09	1.10
Pound sterling	1	5.07	4.23	4.65	4.25
French franc	1	0.47	0.47	0.47	0.47
Swiss franc	1	1.20	1.18	1.19	1.21
Spanish peseta	100	2.70	2.88	2.78	3.00
Braz. cruzeiro	100	3.26	4.50	3.80	7.64

* average exchange rates

Current-value information

The principles of valuation and determination of income used in the consolidated financial statements shown on pages 34 through 43 are based on historical cost. The effect of price rises on Group equity and income is shown on pages 44 and 45.

Net income (loss) per share of common stock

Net income per share of common stock is calculated by dividing net income, less the part thereof distributed in the form of dividends on priority and cumulative preferred stock, by the number of shares of common stock outstanding at December 31.
Net loss per share of common stock is calculated by dividing net loss by the number of shares of common stock outstanding at December 31.

Consolidated balance sheet of the Akzo Group

after allocation of loss (1980) and profit (1979)

see notes on pages 37 through 41

in Hfl million	December 31, 1980		December 31, 1979	
non-current assets				
property, plant and equipment	3,440.4		3,272.8	
investments in non-consolidated companies	356.9		297.4	
other non-current assets	119.4		144.0	
		3,916.7		3,714.2
current assets				
inventories	2,454.8		2,233.3	
short-term receivables	2,288.9		2,231.4	
prepaid expenses	67.7		45.8	
cash and marketable securities	882.6		804.7	
		5,694.0		5,315.2
total assets		9,610.7		9,029.4
Group equity				
Akzo N.V. stockholders' equity	2,266.2		2,325.3	
minority interest in Group equity	392.8		408.1	
		2,659.0		2,733.4
long-term liabilities				
provisions	1,328.7		1,146.8	
long-term debt	2,741.8		2,599.8	
		4,070.5		3,746.6
current liabilities				
bank borrowings and overdrafts	573.7		453.3	
other current liabilities	2,307.5		2,096.1	
		2,881.2		2,549.4
total Group equity and liabilities		9,610.7		9,029.4

Consolidated statement of income of the Akzo Group

see notes on pages 41 and 42

in Hfl million		1980		1979
sales		12,452.7		12,014.7
operating costs				
salaries, wages and social charges	(3,788.9)		(3,571.7)	
depreciation	(503.6)		(505.5)	
other costs	(7,743.9)		(7,248.4)	
		(12,036.4)		(11,325.6)
operating income		416.3		689.1
interest		(261.0)		(258.8)
operating income less interest		155.3		430.3
taxes on operating income less interest		(48.2)		(136.8)
		107.1		293.5
equity in earnings of non-consolidated companies		72.4		32.2
Group income (loss) before extraordinary items		179.5		325.7
extraordinary items		(246.2)		(59.8)
Group income (loss)		(66.7)		265.9
of which minority interest		(2.9)		(36.2)
Akzo N.V. net income (loss)		(69.6)		229.7
net income (loss) before extraordinary items		170.7		289.2
extraordinary items	(246.2)		(59.8)	
of which minority interest	5.9		0.3	
		(240.3)		(59.5)
Akzo N.V. net income (loss)		(69.6)		229.7

net income (loss) before extraordinary items, per common share of Hfl 20 par value, in Hfl	5.77	9.75
net income (loss) per common share of Hfl 20 par value, in Hfl	(2.35)	7.74

Consolidated statement of changes in financial position of the Akzo Group

see notes on page 43

in Hfl million		1980		1979
working capital (excess of current assets over current liabilities) at January 1		2,766		2,108
source of funds				
Group income (loss) before extraordinary items		179		326
depreciation and disposals	533		550	
other non-cash items	(30)		111	
		503		661
		682		987
extraordinary items affecting funds		(51)		(11)
funds from operations		631		976
disposal of participations	15		11	
working capital of consolidated companies disposed of	–		(9)	
		15		2
borrowings		593		538
issuance of stock by Group companies		1		1
		1,240		1,517
application of funds				
expenditures for property, plant and equipment		645		461
acquisitions	94		120	
working capital of new consolidated companies	(17)		(44)	
		77		76
other non-current assets		(26)		(8)
		696		529
repayment of borrowings		498		202
dividends paid to:				
stockholders of Akzo N.V.	–		71	
minority stockholders of Group companies	21		16	
		21		87
other		(22)		41
		1,193		859
working capital at December 31		2,813		2,766

Notes to the consolidated financial statements of the Akzo Group

General

Changes in consolidated companies

The 1980 consolidated figures include Ashe Laboratories Ltd, United Kingdom (Akzo Consumenten Produkten), and Miluz S.A.I.C.I.F., Argentina (Akzo Coatings), in which a majority interest was acquired in the year under review.
There were no other material changes.

Consolidated balance sheet

Property, plant and equipment

Land is stated at cost, with a revaluation of approximately Hfl 70 million for land acquired long ago.
Other property, plant and equipment are stated at cost, less depreciation. Effective January 1, 1980, cost includes the financing expenses of capital investment projects under construction*. Government subsidies, etc. are deducted from cost of acquisition.
Depreciation is calculated by the straight-line method based on estimated life, which in the majority of cases is 10 years for plant equipment and machinery and ranges from 20 to 30 years for buildings. In cases where the book value calculated in this way exceeded the value to the business, additional write-offs were made.
Additional write-offs of Hfl 175.6 million in 1980 were mainly due to the proposed restructuring measures in the man-made fiber sector. The ensuing extraordinary losses were reduced by the provision for additional write-downs, which was Hfl 108.2 million at December 31, 1979.

The table below shows the changes in 1980.

in Hfl million	total	land	buildings	plant equipment and machinery	means of transport	assets not used in the production process
situation at December 31, 1979						
cost of acquisition	9,644.0	200.0	1,953.6	7,156.5	103.0	230.9
depreciation	(6,263.0)		(936.2)	(5,074.1)	(73.8)	(178.9)
book value	3,381.0	200.0	1,017.4	2,082.4	29.2	52.0
provision for additional write-downs	(108.2)					
	3,272.8					
changes in book value						
changes in consolidated companies	8.3	0.2	2.8	3.9	0.7	0.7
capital expenditures	644.6	5.4	95.0	528.8	14.0	1.4
depreciation	(503.6)		(67.7)	(420.4)	(11.2)	(4.3)
disposals	(29.6)	(2.7)	(5.5)	(16.0)	(1.4)	(4.0)
additional write-offs	(175.6)		(48.7)	(125.2)	(0.4)	(1.3)
changes in exchange rates	73.5	1.0	15.0	56.9	0.8	(0.2)
other	41.8	3.9	11.6	21.5	1.3	3.5
total changes in 1980	59.4	7.8	2.5	49.5	3.8	(4.2)
situation at December 31, 1980						
cost of acquisition	10,305.7	207.8	2,064.3	7,692.8	113.0	227.8
depreciation	(6,865.3)		(1,044.4)	(5,560.9)	(80.0)	(180.0)
book value	3,440.4	207.8	1,019.9	2,131.9	33.0	47.8

Capital investment projects under construction included in cost of acquisition and book value totaled Hfl 302.8 million at December 31, 1980 (at December 31, 1979: Hfl 231.9 million).

Purchase commitments not included in the consolidated balance sheet totaled Hfl 195.3 million at December 31, 1980 (at December 31, 1979: Hfl 194.1 million).

* In the light of changing views regarding the presentation of financial statements, it was decided to fully capitalize financing expenses of capital investment projects under construction with effect from January 1, 1980. Before this date, only financing expenses of major capital investment projects were capitalized as a portion of the preparation and start-up expenses. This change had a positive effect of approximately Hfl 19 million on the 1980 net result.

Investments in non-consolidated companies

This item includes the non-consolidated companies and the loans to these companies. Investments in non-consolidated companies are stated at the amount of Akzo's share in stockholders' equity, less provisions in the amount of Hfl 7 million (at December 31, 1979: Hfl 7 million).
The calculation of stockholders' equity has been based as much as possible on the Akzo principles of valuation. Loans to non-consolidated companies totaled Hfl 9.9 million (at December 31, 1979: Hfl 12.8 million).

in Hfl million	
situation at December 31, 1979	297.4
investments	27.0
equity in 1980 earnings	74.6
dividends received	(54.8)
changes in exchange rates	(8.7)
other changes	21.4
situation at December 31, 1980	356.9

Other non-current assets

This item includes mainly long-term receivables, less Hfl 26.5 million for discounted receivables (at December 31, 1979: Hfl 25.5 million), and other assets that are not directly realizable.
Other non-current assets are stated at cost or estimated value, whichever was lower.

Inventories

Inventories are stated at the lower of cost or net realizable value. Cost is defined as full cost exclusive of interest, research expenditure and general administrative expense, taking into account the stage of processing. The cost of inventories has been accounted for using the FIFO formula. Provisions have been made for obsolescence and other risks.
In the valuation of inventories, profits arising as a result of transactions between consolidated companies have been eliminated.

in Hfl million	Dec. 31, 1980	Dec. 31, 1979
raw materials and supplies	758.3	713.2
work in process	620.7	573.5
finished goods	1,075.8	946.6
	2,454.8	2,233.3

Short-term receivables

in Hfl million	Dec. 31, 1980	Dec. 31, 1979
trade receivables	2,102.5	2,081.9
receivables from non-consolidated companies	73.1	68.7
other receivables	392.3	375.1
	2,567.9	2,525.7
of which discounted	279.0	294.3
	2,288.9	2,231.4

Prepaid expenses

Prepaid expenses are stated at face amounts. This item includes Hfl 16 million (at December 31, 1979: Hfl 7 million) in respect of discount on borrowings and costs of negotiating loans, which are charged to income over the life of the loans.

Cash and marketable securities

With few exceptions, securities included in this item are listed on stock exchanges. They are stated at cost or market value, whichever was lower.

in Hfl million	Dec. 31, 1980	Dec. 31, 1979
securities	55.4	75.8
short-term investments	669.5	588.1
cash on hand and in banks	157.7	140.8
	882.6	804.7

The total amount of medium- and long-term credit facilities arranged by Akzo but not yet utilized was approximately Hfl 940 million at December 31, 1980 (at December 31, 1979: approximately Hfl 650 million).

Group equity in Hfl million	capital stock	capital surplus, paid in	other reserves	stock-holders' equity	minority interest	Group equity
situation at December 31, 1979	592.6	658.0	1,074.7	2,325.3	408.1	2,733.4
issuance of stock of Group companies to third parties					0.7	0.7
goodwill resulting from acquisition of companies			(33.6)	(33.6)	(0.7)	(34.3)
purchase of cumulative preferred stock	(0.1)			(0.1)		(0.1)
1980 Group loss			(69.6)	(69.6)	2.9	(66.7)
dividends paid by Group companies to third parties					(21.0)	(21.0)
changes in exchange rates			4.0	4.0	14.1	18.1
other changes			40.2	40.2	(11.3)	28.9
situation at December 31, 1980	592.5	658.0	1,015.7	2,266.2	392.8	2,659.0

At least Hfl 210 million of the capital surplus, paid in (at December 31, 1979: Hfl 210 million) can be considered free from income tax within the meaning of the Dutch 1964 Income Tax Law (Wet op de Inkomstenbelasting 1964).

Provisions

This item comprises provisions which do not refer to specific assets.

in Hfl million	Dec. 31, 1980	Dec. 31, 1979
deferred taxes	330.1	367.6
pension rights	411.7	382.1
other provisions	586.9	397.1
	1,328.7	1,146.8

The current portions of provisions in respect of pension rights and other provisions amount to approximately Hfl 150 million (at December 31, 1979: approximately Hfl 100 million).

in Hfl million	
situation at December 31, 1979	1,146.8
changes in consolidated companies	7.8
changes in exchange rates	16.0
additions less amounts used	155.6
other changes	2.5
situation at December 31, 1980	1,328.7

Provisions for deferred taxes

This item includes the tax liabilities, less the part expected to be settled in 1981. These liabilities are stated at face amounts. See also the note to taxes on income (page 42).

Provisions in respect of pension rights

Most Group companies have arranged appropriate pension plans for their employees, with due observance of the statutory regulations and customs in the countries concerned, including the computational methods and interest rates used. The ensuing liabilities and the required contributions and admission fees are generally computed on an actuarial basis.
The item salaries, wages and social charges in the consolidated statement of income includes Hfl 320 million (1979: Hfl 310 million) for pension expense.
At December 31, 1980, the present value of the pension benefits was on balance fully covered by:
- provisions, in the aggregate amount of Hfl 412 million, made by Group companies in their balance sheets;
- the funds accumulated in independent pension funds through payment of contributions.

At December 31, 1979, the present value of pension benefits not covered was approximately Hfl 140 million.

Other provisions

This item includes provisions for liabilities whose extent cannot be ascertained with accuracy, and provisions for various operating risks. The amounts of the provisions are fixed in relation to the liabilities and risks concerned.
The principal provisions are for rationalization of activities and total Hfl 368 million (at December 31, 1979: Hfl 166 million). In 1980, Hfl 46 million was used, while Hfl 248 million was added. The provisions also include amounts for liabilities in respect of guarantees, and for self-insurance and litigation.

Long-term debt

in Hfl million	Dec. 31, 1980	Dec. 31, 1979
subordinated loans	25.0	–
convertible debentures	215.4	241.1
other debentures	687.2	560.3
installment buying and leasing arrangements	44.4	42.7
private borrowings and other long-term debts	2,124.9	1,997.9
	3,096.9	2,842.0
current portion of long-term debt	355.1	242.2
	2,741.8	2,599.8

in Hfl million	
situation at December 31, 1979	2,599.8
changes in consolidated companies	–
changes in exchange rates	48.6
borrowings	592.5
repayment of borrowings	(497.5)
other changes	(1.6)
situation at December 31, 1980	2,741.8

The breakdown by country is shown in the following table.

in Hfl million	Dec. 31, 1980	Dec. 31, 1979
the Netherlands	1,691.5	1,626.2
Fed. Rep. of Germany	226.9	270.2
United States	543.0	441.2
other countries	280.4	262.2
	2,741.8	2,599.8

Aggregate maturities after 1981 are as follows:

during the years 1982 through 1986	Hfl 1,737 million
during the years 1987 through 1991	Hfl 827 million
after 1991	Hfl 178 million
	Hfl 2,742 million

The average interest rate is 9.6% (1979: 8.9%).
The book value of assets financed by installment buying and leasing amounts to approximately Hfl 44 million (at December 31, 1979: approximately Hfl 37 million).
Private borrowings and other long-term debts have been secured to an aggregate amount of Hfl 339 million (at December 31, 1979: Hfl 383 million) by means of mortgages, etc.
Loan agreements of Akzona Inc. in the aggregate amount of Hfl 473 million (at December 31, 1979: Hfl 370 million) contain covenants which restrict the amount of secured debt the company may incur.

Subordinated loans	*in Hfl million*
This item includes the first tranche of subordinated loans arranged by Akzo Nederland B.V., together with either Enka B.V. or Akzo Zout Chemie Nederland B.V., in the aggregate amount of Hfl 225 million. Akzo N.V. has agreed to be jointly and severally liable for these loans. They are subordinated to all third-party debts of the companies named. The interest payable on borrowings under these loan agreements is based on the going rate for comparable credit facilities. Repayment will take place in the years 1983 through 1992. Redemption before maturity is permitted as from September 1, 1987.	25.0
Convertible debentures	*in Hfl million*
The amount outstanding at December 31, 1980, of 4¾% debentures Akzo N.V. 1969 convertible into Akzo N.V. common stock was U.S. $ 63 million. The conversion price is Hfl 127.10 per share of Hfl 20 par value, based on an exchange rate of U.S. $ 1 = Hfl 3.60. The valuation of these debentures in guilders is based on the same exchange rate, except for the portion due within one year. Repayment at par occurs in 10 equal annual installments of U.S. $ 7 million, the first of which became due in 1980. Full or partial repayment before maturity is permitted. This borrowing includes the debentures held available for exchange of the remaining 4¾% convertible debentures Zout-Organon B.V. of U.S. $ 1,000 each; 30 of these debentures have not been exchanged.	215.4
Other debentures	*in Hfl million*
Currently outstanding amount of 11¼% debentures Akzo N.V. 1974. These debentures are payable in 10 approximately equal annual installments, the first of which became due on November 1, 1975. Redemption before maturity is not permitted.	30.0
to be carried forward	30.0

carried forward	30.0
Sfr 60 million principal amount of 7¾% debentures Akzo N.V. 1975. Subject to certain conditions, these debentures will be repaid in 5 annual installments of Sfr 2 million each in the years 1981 through 1985 and in 4 annual installments of Sfr 4 million each in the years 1986 through 1989. The remaining principal amount will be payable at May 9, 1990. Redemption before maturity is permitted as from May 9, 1981.	72.2
Hfl 125 million principal amount of 9¼% debentures Akzo N.V. 1976. These debentures are payable in 5 approximately equal annual installments, the first of which will become due on July 15, 1982. Redemption before maturity is not permitted.	125.0
Hfl 125 million principal amount of 9½% debentures Akzo N.V. 1979. These debentures will be repaid in 4 approximately equal annual installments in the years 1983 through 1986. Redemption before maturity is not permitted.	125.0
Lfrs 500 million principal amount of 9¼% debentures Akzo N.V. 1979/1987. These debentures will be repaid in 6 annual installments of Lfrs 30 million each in the years 1981 through 1986. The remaining amount will be payable at October 25, 1987. Redemption before maturity is permitted as from October 25, 1983.	33.7
DM 125 million principal amount of 9% debentures Akzo N.V. 1980/1990. These debentures will be repaid in 5 annual installments in the years 1986 through 1990: DM 12.5 million in 1986, DM 25 million annually in 1987 through 1989, and the remaining amount of DM 37.5 million in 1990. Redemption before maturity is permitted as from May 15, 1985.	135.9
Profit-sharing employee debentures Akzo N.V.	1.8
Total other debentures Akzo N.V.	523.6
Currently outstanding amount of 4½% debentures Akzo Pharma B.V. 1961. These debentures are payable in 15 annual installments of Hfl 1 million each, in the years 1967 through 1981.	1.0
Other debentures issued by consolidated companies	162.6
	687.2

Other current liabilities

in Hfl million	Dec. 31, 1980	Dec. 31, 1979
suppliers	1,032.6	905.0
non-consolidated companies	46.2	38.2
taxes on income*	29.6	61.9
Akzo N.V. final dividend	–	41.3
current portion of long-term debt	355.1	242.2
pensions	4.3	1.9
other liabilities and accrued charges	839.7	805.6
	2,307.5	2,096.1

* less tax receivables of Hfl 43 million (at December 31, 1979: Hfl 21 million)

Liabilities not shown in the balance sheet

With regard to non-consolidated companies and third parties, guarantees were given and liabilities contracted to an aggregate amount of Hfl 255 million (at December 31, 1979: Hfl 270 million), of which Hfl 125 million (at December 31, 1979: Hfl 100 million) direct by Akzo N.V.
In respect of leasehold, rent, etc., liabilities have been contracted for a number of years to an amount of approximately Hfl 63 million (at December 31, 1979: approximately Hfl 54 million) per year.

Consolidated statement of income

Sales

This item shows the total of amounts invoiced to third parties, including non-consolidated companies, in respect of goods supplied and services rendered, less sales taxes and excise duties. There are practically no differences in timing of invoicing and delivery.

in Hfl million	1980	1979
man-made fibers	3,782	3,852
chemical products	3,549	3,481
coatings	1,432	1,221
pharmaceuticals	1,320	1,274
consumer products	869	725
miscellaneous products	1,670	1,595
	12,622	12,148
intra-Group deliveries	(169)	(133)
	12,453	12,015

Depreciation

in Hfl million	1980	1979
buildings	67.7	64.2
plant equipment and machinery	420.4	425.7
means of transport	11.2	10.8
assets not used in the production process	4.3	4.8
	503.6	505.5

For the method of calculation of depreciation, see page 37.

Operating income

in Hfl million	1980	1979
man-made fibers	(170)	74
chemical products	183	253
coatings	110	98
pharmaceuticals	145	134
consumer products	40	31
miscellaneous products	116	132
	424	722
non-allocated costs	(8)	(33)
	416	689

Interest

in Hfl million	1980	1979
interest paid	(377.9)	(350.4)
interest received, including income from securities, etc.	116.9	91.6
	(261.0)	(258.8)

In 1980, interest paid decreased by Hfl 33 million due to the capitalization of financing expenses of capital investment projects under construction.

Taxes on income

The taxes on earnings included in this item consist of both current and deferred tax liabilities. From the losses incurred, taxes have been deducted to the extent that they can be offset against taxes charged to income in previous years. No tax deductions are made from earnings to the extent that these earnings can be offset against losses suffered in previous years. Therefore, a portion of income (loss) is not included in taxable income. Mainly due to extraordinary losses, no tax benefits could be realized in 1980 in respect of aggregate losses in the amount of approximately Hfl 200 million. In 1979 an aggregate amount of approximately Hfl 80 million of income was exempt from taxes. Losses not yet compensated amounted to approximately Hfl 950 million at December 31, 1980 (at December 31, 1979: approximately Hfl 820 million); within the compensation periods provided by law, earnings to be achieved in the coming years can therefore be included up to this amount in the statement of income without tax deductions.

The taxes included in the statement of income break down as follows:

in Hfl million	1980	1979
taxes on operating income less interest	(48.2)	(136.8)
taxes on equity in earnings of non-consolidated companies	(22.7)	(18.3)
taxes included in extraordinary items	29.6	4.3
	(41.3)	(150.8)

Equity in earnings of non-consolidated companies

Under this heading are included the Group's equity in earnings of non-consolidated companies and interest received on loans granted to these companies, with due allowance made for taxes on these items.

Extraordinary items

This item includes important but isolated gains and losses not relating to normal operations; the taxes concerned have been taken into account.

in Hfl million	1980	1979
extraordinary gains	42.5	6.0
extraordinary losses	(288.7)	(65.8)
	(246.2)	(59.8)

Extraordinary losses in 1980 mainly relate to the planned restructuring measures in the man-made fiber sector.

Consolidated statement of changes in financial position

Working capital

in Hfl million	Dec. 31, 1980	Dec. 31, 1979
inventories	2,454	2,233
short-term receivables	2,289	2,231
prepaid expenses	68	46
cash and marketable securities	883	805
bank borrowings and overdrafts	(574)	(453)
other current liabilities	(2,307)	(2,096)
	2,813	2,766

Other non-cash items

in Hfl million	1980	1979
changes in provisions	1	90
retained earnings of non-consolidated companies	(20)	11
other changes	(11)	10
	(30)	111

Extraordinary items affecting funds

This item includes increases or decreases in funds which are due to extraordinary items included in the financial statements of the year under review or prior years.

in Hfl million	1980	1979*
extraordinary items	(246)	(60)
items not causing increases or decreases in funds:		
addition to provisions	154	10
other	41	39
	(51)	(11)

* restated for comparison

Acquisitions

in Hfl million	1980	1979
investments in non-consolidated companies	27	14
acquisition of consolidated companies	67	106
	94	120

In 1980 we acquired the stock of Ashe Laboratories Ltd, United Kingdom, and increased our interests in Miluz S.A.I.C.I.F., Argentina, R.E.T.I. S.A., France, and Ivanow S.A., Spain.

Other applications of funds

This item includes the effect on working capital of valuation differences arising from translation into guilders of the 1980 and 1979 balance sheet amounts of foreign companies at the rates of exchange in force at December 31 of the years concerned.

Current-value information

Because of continued inflation in virtually all countries, the current value of property, plant and equipment and of investments in non-consolidated companies, included in non-current assets, is higher than is shown in the consolidated balance sheet. Hence, Group equity is correspondingly higher. Income is lower if costs are determined in relation to current prices.

There exists no generally accepted method to show the effects of price rises on Group equity and income. The method of calculation adopted in this section is set forth below.

Method of calculation

Condensed consolidated balance sheet

Non-current assets

The current value of land has generally been approximated on the basis of appraisals.

To calculate the current value of buildings, machinery and equipment, indexes from external sources in the principal countries of establishment were used. A decrease in value as a result of technological advances, estimated to be 1% annually for buildings and 2% annually for machinery and equipment, was deducted from the current values so obtained, where the indexes did not themselves reflect such a decrease.

In cases where the current value thus calculated exceeded the value to the business, the latter value was used. This applies in particular to part of the buildings, machinery and equipment in Europe for the production of man-made fibers.

Current value in foreign currencies has been translated into guilders at rates virtually equal to the rates of exchange in force at year's end.

For non-consolidated companies, an overall revaluation was made on the basis of the estimated current value of their property, plant and equipment, with due allowance made for taxes.

Current assets

For inventories, no revaluation was made, as the value shown in the consolidated balance sheet does not differ materially from the current value of inventories.

Stockholders' equity

Stockholders' equity on a current-value basis has been determined by adding to stockholders' equity as shown in the consolidated balance sheet, the amount of the revaluation of non-current assets. From this amount, deductions were made for deferred taxes arising from the revaluation of property, plant and equipment, which were calculated at an average rate of 50%, and for minority interest.

Liabilities

Liabilities on a current-value basis have been determined by adding to liabilities as shown in the consolidated balance sheet the amount for deferred taxes arising from the revaluation of property, plant and equipment.

Condensed consolidated statement of income

Operating costs

The amount of the adjustment to current prices of depreciation and other operating costs includes:

- the additional depreciation needed if depreciation is computed on the current value of property, plant and equipment;
- the increase in the value of inventories computed for the normal inventory level.

Taxes

The amount of the adjustment of taxes is computed on the basis of a rate of 50% applied to additional depreciation and to the increase in the value of inventories.

Equity in earnings of non-consolidated companies

The amount of the adjustment to current prices of equity in earnings of non-consolidated companies reflects the effect of additional depreciation of property, plant and equipment on earnings of these companies, with due allowance made for taxes.

Financial ratios		1980		1979
	on the basis of historical cost	on the basis of current value	on the basis of historical cost	on the basis of current value
Group equity : liabilities	0.38	0.45	0.43	0.49
stockholders' equity per common share of Hfl 20 par value, in Hfl	76.56	98.93	78.55	95.54
operating income as percentage of sales	3.3	1.3	5.7	3.0
net income (loss) before extraordinary items:				
per common share of Hfl 20 par value, in Hfl	5.77	1.80	9.75	4.75
as percentage of stockholders' equity	7.5	1.8	12.4	5.0
net income (loss) after extraordinary items:				
per common share of Hfl 20 par value, in Hfl	(2.35)	(6.32)	7.74	2.76
as percentage of stockholders' equity	(3.1)	(6.4)	9.9	2.9

Condensed consolidated balance sheet

in Hfl million	December 31, 1980 on the basis of historical cost	December 31, 1980 on the basis of current value	December 31, 1979 on the basis of historical cost	December 31, 1979 on the basis of current value
non-current assets	3,917	5,403	3,714	4,895
current assets	5,694	5,694	5,315	5,315
total assets	9,611	11,097	9,029	10,210
Akzo N.V. stockholders' equity	2,266	2,929	2,325	2,828
minority interest	393	519	408	529
Group equity	2,659	3,448	2,733	3,357
liabilities	6,952	7,649	6,296	6,853
total Group equity and liabilities	9,611	11,097	9,029	10,210

Condensed consolidated statement of income

in Hfl million	1980 on the basis of historical cost	1980 on the basis of current value	1979 on the basis of historical cost	1979 on the basis of current value
sales	12,453	12,453	12,015	12,015
operating costs				
depreciation	(504)	(654)	(506)	(638)
other costs	(11,533)	(11,638)	(10,820)	(11,014)
operating income	416	161	689	363
interest	(261)	(261)	(258)	(258)
taxes	(48)	80	(137)	26
equity in earnings of non-consolidated companies	72	62	32	23
extraordinary items	(246)	(246)	(60)	(60)
Group income (loss)	(67)	(204)	266	94
minority interest	(3)	17	(36)	(12)
Akzo N.V. net income (loss)	(70)	(187)	230	82
net income (loss) before extraordinary items	170	53	289	141
extraordinary items less minority interest	(240)	(240)	(59)	(59)
Akzo N.V. net income (loss)	(70)	(187)	230	82

Changes in stockholders' equity

in Hfl million		1980		1979
stockholders' equity on a current-value basis at January 1		2,828		2,803
net income (loss)	(187)		82	
goodwill resulting from acquisition of companies	(34)		(6)	
dividend	–		(71)	
other changes	322		20	
		101		25
stockholders' equity on a current-value basis at December 31		2,929		2,828

Other changes include the revaluation of non-current assets, the increase in the value of inventories, and the effect of changes in exchange rates.

Akzo N.V. balance sheet

after allocation of loss (1980) and profit (1979)

see notes on page 48

in Hfl million	December 31, 1980		December 31, 1979	
affiliated companies				
consolidated companies	2,820.0		2,810.5	
non-consolidated companies	69.1		46.7	
loans to affiliated companies	1,029.2		816.0	
		3,918.3		3,673.2
short-term receivables and prepaid expenses				
receivables from affiliated companies	34.9		30.0	
other receivables	37.8		36.6	
prepaid expenses	16.3		9.6	
		89.0		76.2
cash and marketable securities				
marketable securities	0.2		2.1	
short-term investments	608.2		535.1	
cash on hand and in banks	29.9		75.0	
		638.3		612.2
total assets		4,645.6		4,361.6
stockholders' equity				
common stock	591.9		591.9	
cumulative preferred stock	0.6		0.7	
priority stock	0.0		0.0	
capital stock	592.5		592.6	
capital surplus, paid in	658.0		658.0	
other reserves	1,015.7		1,074.7	
		2,266.2		2,325.3
borrowings				
convertible debentures	215.4		241.1	
other debentures	523.6		395.8	
borrowings from affiliated companies	502.1		221.6	
other borrowings	981.7		974.7	
		2,222.8		1,833.2
current liabilities				
amounts due to affiliated companies	4.1		16.5	
final dividend	–		41.3	
bank borrowings and overdrafts	68.4		59.0	
other liabilities and accrued charges	84.1		86.3	
		156.6		203.1
total stockholders' equity and debts		4,645.6		4,361.6

Akzo N.V. statement of income

see notes on page 48

in Hfl	1980	1979
net income (loss)	(69,600,000)	229,700,000
reservation, pursuant to art. 38, para 2, of the articles of association valid in 1979		(148,000,000)
profit available for allocation		81,700,000

The 1980 net loss has been charged against reserves.

Arnhem, March 27, 1981

The board of management:

A.G. van den Bos
A.A. Loudon
J.A. Wolhoff
H. van Doodewaerd
A. van Driel
M.W. Geerlings
H.J. Kruisinga
J. Veldman
H.J.J. van der Werf
M.D. Westermann
H.G. Zempelin

The supervisory council:

G. Kraijenhoff
J.R.M. van den Brink
Y. Scholten
S.C. Bakkenist
P.M.H. van Boven
A. Herrhausen
H.L. Merkle
H.J. Schlange-Schöningen
K. Schudel-van Zwanenberg
J. de Vries
O. Wolff von Amerongen

Notes to Akzo N.V. balance sheet and statement of income

General

The investments in affiliated companies, as well as the other assets and liabilities, have been valued, and net income (loss) has been determined, in accordance with the principles of valuation and determination of income mentioned on page 33. Thus stockholders' equity and net income (loss) are equal to stockholders' equity and net income (loss) as shown in the consolidated financial statements on pages 34 and 35.

Non-consolidated companies

in Hfl million

situation at December 31, 1979	46.7
equity in 1980 earnings	22.0
dividends received	(5.5)
changes in exchange rates	5.7
other changes	0.2
situation at December 31, 1980	69.1

Capital stock

Authorized capital stock of Akzo N.V. is Hfl 1,030,048,000 and consists of 48 shares of priority stock, par value Hfl 1,000 per share; 30,000 shares of cumulative preferred stock, par value Hfl 1,000 per share; and 50 million shares of common stock, par value Hfl 20 per share.
Outstanding capital stock consists of 48 shares of priority stock, 618 shares of cumulative preferred stock, and 29,593,586 shares of common stock.
A total of 20 shares of cumulative preferred stock were purchased in 1980.
The priority stock is held by "Akzostichting" (Akzo Foundation), which is controlled by the members of the supervisory council and the board of management. The meeting of holders of priority stock has the right to draw up binding lists of nominees for appointment to the supervisory council and the board of management.
The accrued and unpaid dividends on the priority and cumulative preferred stock relate to 1980 and aggregate Hfl 39,960.

Borrowings

For information on the convertible and other debentures, see the notes to the consolidated financial statements (pages 40 and 41).
Borrowings from affiliated companies have no fixed repayment schedule. A portion of these borrowings bears no interest. To the extent that interest is charged, it averages 9.9% (1979: 9.4%).
Interest on other borrowings averages 8.7% (1979: 9.4%).

The repayment schedule for the other borrowings is as follows:

in 1981	Hfl 114 million
during the years 1982 through 1986	Hfl 581 million
during the years 1987 through 1991	Hfl 287 million
	Hfl 982 million

Remuneration of supervisory council

For 1980 the members of the supervisory council were paid a fixed remuneration only, in the aggregate amount of Hfl 480,000. For 1979 a total of Hfl 598,125 was paid, of which Hfl 255,625 was fixed remuneration and Hfl 342,500 a bonus.
All members receive remuneration.
At end-1980 the council numbered 11 members (end-1979: 11).

Auditors' report

We have examined the foregoing 1980 financial statements of Akzo N.V., Arnhem. For the purpose of our examination we also have made use of the reports of other independent auditors with respect to a number of subsidiaries.
In our opinion, these financial statements present fairly the financial position of Akzo N.V. at December 31, 1980, and the results of its operations for the year then ended.

Arnhem, March 27, 1981

Klynveld Kraayenhof & Co.

Ten-year financial summary

The figures set forth below are based on historical cost;
for figures based on current value, see page 52.

consolidated balance sheet December 31	1980	1979	1978	1977	1976	1975	1974	1973*	1972*	1971
in Hfl million										
property, plant and equipment	3,441	3,273	3,360	3,577	3,904	4,396	4,322	4,235	4,250	4,274
investments in non-consolidated companies	357	297	338	321	288	307	285	282	341	335
other non-current assets	119	144	152	148	162	125	175	155	130	140
non-current assets	3,917	3,714	3,850	4,046	4,354	4,828	4,782	4,672	4,721	4,749
inventories	2,454	2,233	1,902	1,920	1,949	2,113	2,562	1,641	1,615	1,664
short-term receivables	2,289	2,231	1,992	1,882	1,787	1,906	1,831	1,954	1,728	1,590
prepaid expenses	68	46	48	60	59	51	56	52	54	56
cash and marketable securities	883	805	598	580	611	539	524	840	645	616
current assets	5,694	5,315	4,540	4,442	4,406	4,609	4,973	4,487	4,042	3,926
total assets	9,611	9,029	8,390	8,488	8,760	9,437	9,755	9,159	8,763	8,675
capital stock	593	593	593	593	593	593	593	562	542	542
capital surplus, paid in	658	658	658	658	658	658	658	689	710	710
other reserves	1,015	1,074	980	1,074	1,377	1,733	2,223	2,036	1,813	1,740
stockholders' equity	2,266	2,325	2,231	2,325	2,628	2,984	3,474	3,287	3,065	2,992
minority interest in Group equity	393	408	397	414	486	541	565	573	570	610
Group equity	2,659	2,733	2,628	2,739	3,114	3,525	4,039	3,860	3,635	3,602
provisions	1,329	1,147	1,054	1,039	942	1,052	958	991	809	725
long-term debt	2,742	2,600	2,276	2,496	2,626	2,693	2,124	2,047	2,407	2,402
long-term liabilities	4,071	3,747	3,330	3,535	3,568	3,745	3,082	3,038	3,216	3,127
bank borrowings and overdrafts	574	453	386	347	310	308	410	162	223	273
other current liabilities	2,307	2,096	2,046	1,867	1,768	1,859	2,224	2,099	1,689	1,673
current liabilities	2,881	2,549	2,432	2,214	2,078	2,167	2,634	2,261	1,912	1,946
total Group equity and liabilities	9,611	9,029	8,390	8,488	8,760	9,437	9,755	9,159	8,763	8,675
invested capital**:										
of consolidated companies	6,373	6,183	5,620	5,953	6,394	6,963	6,836	6,616	6,510	6,394
in non-consolidated companies	357	297	338	321	288	307	285	282	341	335
total	6,730	6,480	5,958	6,274	6,682	7,270	7,121	6,898	6,851	6,729
property, plant and equipment										
capital expenditures	645	461	434	409	413	745	799	549	555	943
depreciation	504	506	486	494	533	519	531	540	527	526
ratios										
sales : invested capital	1.95	1.94	1.90	1.75	1.68	1.40	1.57	1.42	1.26	1.26
Group equity : liabilities	0.38	0.43	0.46	0.48	0.55	0.60	0.71	0.73	0.71	0.71
Group equity : non-current assets	0.68	0.74	0.68	0.68	0.72	0.73	0.84	0.83	0.77	0.76
current assets : current liabilities	1.98	2.09	1.87	2.01	2.12	2.13	1.89	1.98	2.11	2.02

development of stockholders' equity (in Hfl million)	1971-1980	1980	1979	1978	1977	1976	1971-1975
stockholders' equity at January 1	3,118	2,325	2,231	2,325	2,628	2,984	3,118
stock dividends	208						208
retained earnings	31	(70)	158	24	(166)	(153)	238
goodwill resulting from acquisition of companies	(210)	(34)	(6)	(17)	(12)	(4)	(137)
change in exchange rates	(924)	4	(99)	(147)	(91)	(213)	(378)
other changes	43	41	41	46	(34)	14	(65)
stockholders' equity at December 31	2,266	2,266	2,325	2,231	2,325	2,628	2,984

* based on cash dividend

** Group equity plus long-term liabilities

consolidated statement of income	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971
in Hfl million										
sales	12,453	12,015	10,666	10,433	10,750	9,717	10,761	9,418	8,235	8,056
salaries, wages and social charges	(3,789)	(3,572)	(3,395)	(3,277)	(3,277)	(3,109)	(3,144)	(2,764)	(2,478)	(2,354)
depreciation	(504)	(506)	(486)	(494)	(533)	(519)	(531)	(540)	(527)	(526)
other costs	(7,744)	(7,248)	(6,364)	(6,422)	(6,635)	(6,106)	(6,314)	(5,350)	(4,645)	(4,535)
operating income (loss)	416	689	421	240	305	(17)	772	764	585	641
interest	(261)	(259)	(248)	(245)	(249)	(234)	(147)	(147)	(172)	(165)
taxes on operating income less interest	(48)	(136)	(113)	(65)	(59)	58	(226)	(283)	(181)	(238)
equity in earnings of non-consolidated companies	72	32	28	34	24	13	42	42	29	23
Group income (loss) before extraordinary items	179	326	88	(36)	21	(180)	441	376	261	261
extraordinary items	(246)	(60)	(25)	(122)	(167)	(253)	8	(3)	7	4
Group income (loss)	(67)	266	63	(158)	(146)	(433)	449	373	268	265
of which minority interest	(3)	(36)	(39)	(8)	(7)	(7)	(69)	(82)	(51)	(56)
net income (loss)	(70)	230	24	(166)	(153)	(440)	380	291	217	209
profit available for allocation	–	82	–	–	–	–	210	241	188	184
distributed income	–	71	–	–	–	–	118	107*	97*	98
common stock, in thousands of shares of Hfl 20 par value	29,594	29,594	29,594	29,594	29,594	29,594	29,594	28,062	26,989	26,989
number of employees	83,100	83,000	83,200	84,400	91,100	98,200	105,400	105,800	101,000	104,500
per common share of Hfl 20 par value, in Hfl										
net income (loss) before extraordinary items	5.77	9.75	1.66	(1.75)	0.20	(6.53)	12.55	10.48	7.70	7.62
net income (loss) after extraordinary items	(2.35)	7.74	0.82	(5.63)	(5.16)	(14.86)	12.83	10.37	8.02	7.72
profit available for allocation	–	2.74	–	–	–	–	7.08	8.59	6.94	6.81
dividend	–	2.40	–	–	–	–	4.00	3.80	3.60	3.60
of which, at stockholder's option, in common stock								2.60	2.40	
number of shares entitling holder to one new share								18	25	
stockholders' equity	76.56	78.55	75.35	78.52	88.78	100.80	117.36	117.08	113.49	110.78
ratios										
operating income (loss), as percentage of sales	3.3	5.7	3.9	2.3	2.8	(0.2)	7.2	8.1	7.1	8.0
salaries, wages and social charges, as percentage of sales	30.4	29.7	31.8	31.4	30.5	32.0	29.2	29.3	30.1	29.2
net income (loss) before extraordinary items, as percentage of stockholders' equity	7.5	12.4	2.2	(2.2)	0.2	(6.5)	10.7	9.0	6.8	6.9
net income (loss) after extraordinary items, as percentage of stockholders' equity	(3.1)	9.9	1.1	(7.2)	(5.8)	(14.7)	10.9	8.9	7.1	7.0

* of which Hfl 35 million (1973) and Hfl 33 million (1972) in cash

consolidated statement of changes in financial position	1980	1979	1978	1977	1976	1975	1974
in Hfl million							
working capital (excess of current assets over current liabilities) at January 1	2,766	2,108	2,228	2,327	2,441	2,339	2,226
source of funds							
funds from operations	631	976	659	539	503	370	1,024
borrowings	593	538	390	289	496	826	422
funds retained through payment of Akzo N.V. final 1973 dividend in stock							72
miscellaneous	16	3	19	62	41	17	20
	1,240	1,517	1,068	890	1,040	1,213	1,538
application of funds							
expenditures for property, plant and equipment	645	461	434	409	413	745	799
acquisitions	77	76	90	60	50	92	65
other non-current assets	(26)	(8)	4	(12)	41	(43)	20
repayment of borrowings	498	202	557	408	446	277	306
dividends paid to stockholders of Akzo N.V.	–	71	–	–	–	–	118
miscellaneous	(1)	57	103	124	204	40	117
	1,193	859	1,188	989	1,154	1,111	1,425
working capital at December 31	2,813	2,766	2,108	2,228	2,327	2,441	2,339

figures on a current-value basis	1980	1979	1978*	1977*	1976*	1975*	1974*
Group equity, in Hfl million	3,448	3,357	3,290	3,369	3,764	4,225	4,559
stockholders' equity, in Hfl million	2,929	2,828	2,803	2,870	3,193	3,585	3,928
Group equity : liabilities	0.45	0.49	0.52	0.54	0.61	0.64	0.74
stockholders' equity, per common share of Hfl 20 par value, in Hfl	98.93	95.54	94.69	96.95	107.87	121.14	132.73
operating income (loss)							
in Hfl million	161	363	269	104	77	(315)	402
as percentage of sales	1.3	3.0	2.5	1.0	0.7	(3.2)	3.7
net income (loss) before extraordinary items							
in Hfl million	53	141	(28)	(124)	(105)	(339)	216
per common share of Hfl 20 par value, in Hfl	1.80	4.75	(0.95)	(4.19)	(3.55)	(11.46)	7.30
as percentage of stockholders' equity	1.8	5.0	(1.0)	(4.3)	(3.3)	(9.5)	5.5
net income (loss) after extraordinary items							
in Hfl million	(187)	82	(53)	(239)	(264)	(585)	224
per common share of Hfl 20 par value, in Hfl	(6.32)	2.76	(1.79)	(8.08)	(8.92)	(19.77)	7.57
as percentage of stockholders' equity	(6.4)	2.9	(1.9)	(8.3)	(8.3)	(16.3)	5.7

* restated for comparison

product group statistics	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971
in Hfl million										
sales										
man-made fibers										
textile uses	2,663	2,817	2,633	2,590	2,834	2,880	3,386	3,497	3,060	3,069
industrial uses	1,119	1,035	934	1,008	970	827	1,142	901	738	771
	3,782	3,852	3,567	3,598	3,804	3,707	4,528	4,398	3,798	3,840
chemical products										
salt and heavy chemicals	2,174	2,237	1,794	1,854	1,722	1,428	1,653	1,204	1,147	1,030
specialty chemicals	1,375	1,244	1,122	1,144	1,061	824	991	753	645	622
	3,549	3,481	2,916	2,998	2,783	2,252	2,644	1,957	1,792	1,652
coatings	1,432	1,221	1,049	975	941	836	772	638	575	535
pharmaceuticals	1,320	1,274	1,211	1,099	1,071	971	819	706	624	579
consumer products	869	725	696	611	789	779	679	539	490	502
miscellaneous products	1,670	1,595	1,349	1,274	1,362	1,172	1,319	1,180	956	948
	5,291	4,815	4,305	3,959	4,163	3,758	3,589	3,063	2,645	2,564
total	12,622	12,148	10,788	10,555						
intra-Group deliveries	(169)	(133)	(122)	(122)						
sales to third parties	12,453	12,015	10,666	10,433	10,750	9,717	10,761	9,418	8,235	8,056
operating income (loss)										
man-made fibers	(170)	74	10	(88)	(142)	(326)	223	390	231	371
chemical products	183	253	122	110	134	54	304	145	140	103
coatings	110	98	64	45						
pharmaceuticals	145	134	140	133						
consumer products	40	31	31	16						
miscellaneous products	116	132	107	80						
	411	395	342	274	313	255	245	229	214	167
total	424	722	474	296						
non-allocated costs	(8)	(33)	(53)	(56)						
operating income (loss)	416	689	421	240	305	(17)	772	764	585	641
operating income (loss), as percentage of sales										
man-made fibers	(4.5)	1.9	0.3	(2.4)	(3.7)	(8.8)	4.9	8.9	6.1	9.7
chemical products	5.2	7.3	4.2	3.7	4.8	2.4	11.5	7.4	7.8	6.2
coatings	7.7	8.0	6.1	4.6						
pharmaceuticals	11.0	10.5	11.6	12.1						
consumer products	4.6	4.3	4.5	2.6						
miscellaneous products	6.9	8.3	7.9	6.3						
	7.8	8.2	7.9	6.9	7.5	6.8	6.8	7.5	8.1	6.5
total	3.3	5.7	3.9	2.3	2.8	(0.2)	7.2	8.1	7.1	8.0

For the years 1971 through 1976, intra-Group deliveries and non-allocated costs are deducted from sales and operating income, respectively, of the several product groups. This does not materially affect the comparability with subsequent years.

geographical statistics	1980	1979	1978	1977	1976	1975	1974	1973
in Hfl million								
the Netherlands								
sales by area of destination	1,454	1,419	1,289	1,284	1,295	1,218	1,302	1,126
sales by area of origin	4,255	4,212	3,623	3,585	3,706	3,237	3,554	2,903
expenditures for property, plant and equipment	246	170	180					
invested capital	2,519	2,414	2,053	2,156	2,497	2,417	2,268	2,235
number of employees	23,600	23,700	24,300	25,400	27,600	29,700	30,600	29,700
Federal Republic of Germany								
sales by area of destination	2,198	2,243	1,966	1,932	2,056	1,939	2,115	1,925
sales by area of origin	3,106	3,087	2,825	2,658	2,727	2,547	2,819	2,520
expenditures for property, plant and equipment	130	100	96					
invested capital	1,489	1,574	1,546	1,653	1,588	1,761	1,856	1,811
number of employees	21,000	21,200	21,300	21,800	23,800	26,000	28,800	28,500
other EEC countries								
sales by area of destination	2,966	2,791	2,348	2,143	2,198	2,020	2,229	1,904
sales by area of origin	1,498	1,287	1,161	1,055	1,003	994	1,124	1,093
expenditures for property, plant and equipment	63	44	36					
invested capital	429	503	420	393	262	503	595	593
number of employees	9,600	9,600	10,200	10,000	11,000	13,400	14,700	14,400
total EEC countries								
sales by area of destination	6,618	6,453	5,603	5,359	5,549	5,177	5,646	4,955
sales by area of origin	8,859	8,586	7,609	7,298	7,436	6,778	7,497	6,516
operating income	229	441	196	83	146	(187)	474	
expenditures for property, plant and equipment	439	314	312	291	259	481		
invested capital	4,437	4,491	4,019	4,202	4,347	4,681	4,719	4,639
number of employees	54,200	54,500	55,800	57,200	62,400	69,100	74,100	72,600
rest of Europe								
sales by area of destination	1,750	1,732	1,384	1,473	1,646	1,432	1,531	1,302
sales by area of origin	718	711	573	561	712	685	691	617
operating income	37	56	40	(2)	16	10	68	
expenditures for property, plant and equipment	36	16	11	11	36	76		
invested capital	332	324	246	263	403	500	475	438
number of employees	6,400	6,300	6,000	6,300	7,600	7,800	8,100	8,200
North America								
sales by area of destination	2,362	2,413	2,315	2,334	2,292	2,018	2,318	2,182
sales by area of origin	2,253	2,224	2,027	2,133	2,147	1,909	2,163	2,008
operating income	45	113	99	87	53	103	166	
expenditures for property, plant and equipment	150	117	93	87	103	134		
invested capital	1,379	1,186	1,129	1,289	1,423	1,543	1,392	1,326
number of employees	16,000	16,200	15,600	15,300	15,500	16,100	17,100	20,100
rest of the world								
sales by area of destination	1,723	1,417	1,364	1,267	1,263	1,090	1,266	979
sales by area of origin	623	494	457	441	455	345	410	277
operating income	105	79	86	72	90	57	64	
expenditures for property, plant and equipment	20	14	18	20	15	54		
invested capital	225	182	226	199	221	239	250	213
number of employees	6,500	6,000	5,800	5,600	5,600	5,200	6,100	4,900

Principal companies of the Akzo Group

December 31, 1980

Percentages of participation are only stated for companies in which Akzo N.V. holds a direct and/or indirect interest of less than 95% in voting stock.

Enka, Wuppertal — **Federal Republic of Germany (F.R.G.)**

man-made fibers, machinery, dialysis membranes, plastics, non-wovens, films, various industrial products

Enka B.V., Arnhem	Netherlands	
Enka International B.V., Arnhem	Netherlands	
Akzo Plastics B.V., Arnhem	Netherlands	
Enka AG, Wuppertal	F.R.G.	
Barmag Barmer Maschinenfabrik AG, Remscheid-Lennep with establishments in Switzerland[a], U.S.A., Brazil[a], and Hong Kong	F.R.G.	
Membrana GmbH, Wuppertal[c]	F.R.G.	
Italenka S.p.A., Milan	Italy	
British Enkalon Ltd, Leicester	U.K.	(82)
Brand-Rex Ltd, Glenrothes	U.K.	(49[b])
Erste Österr. Glanzstoff-Fabrik AG, Vienna	Austria	(93)
La Seda de Barcelona S.A., Barcelona	Spain	(57)
Cyanenka S.A., Prat de Llobregat	Spain	(44)
Fibras Químicas S.A., Monterrey	Mexico	(40)
Petroquímica Sudamericana S.A., Buenos Aires	Argentina	(40)
Polyenka S.A., Indústria Química e Têxtil, São Paulo	Brazil	(51)
COBAFI Companhia Bahiana de Fibras S.A., Camaçari	Brazil	(45)
Enka de Colombia S.A., Medellín	Colombia	(48)
Enkador S.A., Quito	Ecuador	(48)
Century Enka Ltd, Calcutta	India	(39)

Akzo Zout Chemie, Hengelo (O) — **Netherlands**

salt, chlorine, alkali products, petrochemicals

Akzo Zout Chemie Nederland B.V., Hengelo	Netherlands	
Methanol Chemie Nederland v.o.f., Delfzijl	Netherlands	(50)
Methanor v.o.f., Delfzijl	Netherlands	(28)
Delamine B.V., Delfzijl	Netherlands	(35)
Norddeutsche Salinen GmbH, Stade	F.R.G.	
Elektro-Chemie Ibbenb. GmbH, Ibbenbüren	F.R.G.	(50)
Konezo, division of Akzo België N.V., Brussels	Belgium	
Dansk Salt I/S, PR Mariager	Denmark	(50)
CIRNE – Companhia Industrial do Rio Grande do Norte, Macau	Brazil	
Denak K.K., Tokyo	Japan	(50)

Akzo Chemie, Amersfoort — **Netherlands**

specialty chemicals, organic chemicals, industrial chemicals, catalysts, glass fibers

Akzo Chemie Nederland B.V., Amersfoort	Netherlands	
Ketjen Carbon B.V., Rotterdam	Netherlands	(60)
Cyanamid-Ketjen Katalysator B.V., Amsterdam	Netherlands	(50)
Silenka B.V., Hoogezand	Netherlands	(33)
Akzo Chemie GmbH, Düren	F.R.G.	
Carbosulf Chemische Werke GmbH, Cologne	F.R.G.	(67)
Rhodanid Chemie GmbH, Cologne	F.R.G.	(67)
Akzo Chemie, division of Akzo België N.V., Mons	Belgium	
Amdic S.A., Mons	Belgium	(50)
Stikstofderivaten N.V., Mons	Belgium	(50)
Akzo Chemie France S.à.r.l., Compiègne	France	
Akzo Chemie Italia S.p.A., Arese	Italy	
Akzo Chemie U.K. Ltd, London	U.K.	
Interstab Chemicals Inc., N. Brunswick, New Jersey	U.S.A.	
Poliquíma Indústria e Comércio S.A., São Paulo	Brazil	
Nippon Ketjen K.K., Tokyo	Japan	(50)
Kayaku Noury K.K., Tokyo	Japan	(50)
Lion Akzo Co. K.K., Tokyo	Japan	(50)

Akzo Coatings, Amstelveen — **Netherlands**

paints, stains, synthetic resins, adhesives

Sikkens B.V., Sassenheim	Netherlands	
Koninklijke Talens B.V., Apeldoorn	Netherlands	
Kunstharsfabriek Synthese B.V., Bergen op Zoom	Netherlands	
Deutsche Akzo Coatings GmbH, Stuttgart	F.R.G.	
Austro-Lesonal GmbH, Salzburg	Austria	
Akzo Coatings Belgium, division of Akzo België N.V., Ternat	Belgium	
Astral S.A., Paris with establishments in Morocco[a], Tunisia[a], Senegal[a], Ivory Coast[a], and Cameroun[a]	France	
Dacral S.A., Paris	France	(48)
Sikkens U.K. Ltd, London	U.K.	
Akzo Coatings Italia S.p.A., Mornago	Italy	
Ivanow S.A., Barcelona	Spain	
Svenska Sikkens AB, Tyresö	Sweden	(50)
Miluz S.A.I.C.I.F., Buenos Aires	Argentina	
R. Montesano S.A. – Tintas Wanda, São Paulo	Brazil	
Metropolitan Paint Factory Ltd, Bangkok	Thailand	(55)
Toa Akzo Coatings K.K., Tokyo	Japan	(50)

a participation less than 95%

b affiliate of British Enkalon Ltd (60%) and Akzona Inc. (40%); total participation of Akzo N.V.: 76%

c affiliate of Enka AG (52%) and Akzona Inc. (48%)

d affiliate of Akzona Inc. (52%) and Enka AG (48%)

Akzo Pharma, Oss **Netherlands**

ethical drugs
(Organon International B.V., Oss, the Netherlands)
hospital supplies and equipment
(Organon Teknika N.V., Turnhout, Belgium)
non-prescription drugs
(Chefaro International B.V., Rotterdam, the Netherlands)
raw materials for the pharmaceutical industry
(Diosynth B.V., Oss, the Netherlands)
veterinary products
(Intervet International B.V., Boxmeer, the Netherlands)

Sales offices or production plants of one or more of the above companies are established in:

- the Netherlands, Federal Republic of Germany, Belgium, France, Italy, United Kingdom, Republic of Ireland, Denmark, Norway, Sweden, Finland, Switzerland, Spain, Portugal, Greece, Turkey
- United States
- Mexico, Argentina, Brazil, Chile, Colombia, Ecuador, Venezuela
- Lebanon, Iran[a], Bangladesh[a], India[a], Pakistan[a], Thailand, Indonesia[a], Philippines, Hong Kong, Japan[a]
- Australia, New Zealand
- Morocco, Zaire, South Africa[a]

Akzo Consumenten Produkten, The Hague **Netherlands**

detergents and cleaning products, health and bodycare products, foodstuffs

Kortman & Schulte B.V., Dordrecht	Netherlands	
Otarès B.V., Enschede	Netherlands	
Grada Producten B.V., Amsterdam	Netherlands	(50)
Recter B.V., Veenendaal	Netherlands	
Aerofako B.V., Apeldoorn	Netherlands	
Kon. Eau de Colognefabriek J.C. Boldoot B.V., Apeldoorn	Netherlands	
Kon. Fabr. T. Duyvis Jz. B.V., Zaanstad	Netherlands	
Rotterdamsche Margarine Industrie ROMI B.V., Vlaardingen	Netherlands	
Kortman, division of Akzo België N.V., Brussels	Belgium	
Ashe Laboratories Ltd, Leatherhead	U.K.	
Mayolande S.A., Seclin	France	(90)
A/S Blumøller, Odense	Denmark	
Tomten A/S, Sandvika	Norway	

Akzona Inc., Asheville, North Carolina **U.S.A.** (66)

man-made fibers, specialty chemicals, leather, wire, cable and electronic/electrical devices, salt, pharmaceuticals, various industrial products

American Enka Co., Enka, North Carolina	U.S.A.
Armak Co., Chicago, Illinois with establishment in Canada	U.S.A.
Armira Corp., Sheboygan, Wisconsin	U.S.A.
Brand-Rex Co., Willimantic, Connecticut with establishments in Canada, United Kingdom[b] and Switzerland	U.S.A.
International Salt Co., Clarks Summit, Pennsylvania with establishments in Canada and the Netherlands Antilles	U.S.A
Organon Inc., West Orange, New Jersey with establishment in Canada	U.S.A.
Membrana Inc., Chicago, Illinois[d]	U.S.A.

Other companies

N.V. Verenigde Instrumentenfabrieken Enraf-Nonius, Delft (medical equipment, etc.)	Netherlands	(17)
Akzo Engineering B.V., Arnhem	Netherlands	

Akzo N.V. common stock is listed on the following stock exchanges:

the Netherlands:	Amsterdam
Federal Republic of Germany:	Frankfurt/Main, Düsseldorf and Berlin (West)
Switzerland:	Zurich, Basel and Geneva
France:	Paris
Belgium:	Brussels and Antwerp
United Kingdom:	London
Austria:	Vienna
Norway:	Oslo

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