Henkel foresees rising soap consumption

World per capita consumption of soaps and detergents may reach 7.2 kg by 1990, compared to 6.2 kg per capita in 1976 and 3.8 kg per capita in 1960, according to a new report from the department of political economics at Henkel KGaA in Dusseldorf.

"This would be an average annual increase in per capita consumption of slightly more than 1%, which is very little compared to the increases of 3.2% from 1960-1976, and 5.1% from 1970-76," the report said. "It should, however, be taken into account that the high growth rates in Western Europe and the United States probably will not continue in the future."

Tables I, II, and III show production statistics compiled by Henkel for 1977, the last year for which full data are available. Preliminary 1978 figures indicate soap production in 1978 was 3.6% above 1977 and detergent production was up 5%. Total 1977 world production was 25,039,300 tons.

Per capita consumption through 1990 is expected to rise most rapidly in Asia, especially in China, partially attributable to a reduction in the birth rate. Continuing high birth rates in Africa, by contrast, are expected to offset production increases on that continent, the report said.

The report noted that statistics on production and con-

Table I

1977 European production (1,000 metric tons)

Country	Soaps			Soap powders [b]	Syndets [c]			Scouring Cleansers [e]	Other cleaning Compounds [f]	Grand Total
	Household	Toilet	Total [a]		Solid [d]	Liquid [d]	Total			
Western Europe										
Austria	1.6	1.8	4.3		58.1	15.0	73.1	13.3	11.6	102.3
Belgium-Luxembourg	6.8	3.3	26.8		145.5	64.9	210.4	15.8	20.2	273.2
Denmark	1.3	3.9	5.2		42.0	12.7	54.7	1.5	11.7	73.1
Finland	3.9	0.5	4.4		21.6	5.8	27.4	1.1	2.2	35.1
France	51.1	39.6	114.4		507.7	191.2	698.9	49.7	87.7	950.7
Germany	29.2	69.9	130.8		735.5	207.5	943.0	42.8	335.4	1,452.0
Greece	6.6	6.9	13.5				66.0			79.5
Iceland		0.1	1.5		1.0		1.0		0.6	3.1
Ireland	1.3	1.8	3.2		17.0	6.0	23.0	0.9	1.0	28.1
Italy	79.3	43.2	130.4		473.3	160.5	633.8	59.7	28.8	852.7
Malta			5.0		5.0		5.0			10.0
Netherlands	5.7	10.9	24.0		149.4	50.7	200.1	19.9	30.9	274.9
Norway	4.7	5.9	10.8		23.2	20.3	43.5	0.9	2.7	57.9
Portugal	65.9	4.5	71.3		56.8	23.5	80.3	7.5	0.5	159.6
Spain	65.1	21.4	88.0		290.0	85.7	375.7	40.0	18.0	521.7
Sweden	5.0	6.0	14.8		48.0	15.7	63.7	0.7	2.5	81.7
Switzerland	1.6	5.2	9.4		79.9	16.4	96.3	6.0	17.3	129.0
United Kingdom	25.4	126.7	184.9	50.0	377.5	317.1	694.6	54.4	52.9	1,036.8
Yugoslavia			20.6		162.1		162.1			182.7
Western Europe Total	354.5	351.6	863.3	50.0	3,193.6	1,193.0	4,452.6	314.2	624.0	6,304.1
Eastern Europe										
Albania	8.0	0.2	8.2							8.2
Bulgaria			25.0				39.3 [g]			64.3
Czechoslovakia			35.9				57.8 [g]			93.7
GDR			26.3		101.6 [h]		101.6 [g]			127.9
Hungary	1.7	12.8	20.1				81.3 [g]			101.4
Poland			74.5	201.5			161.0 [g]			437.0
Rumania			62.2				107.5 [g]			169.7
USSR			940.0				825.0			1,765.0
Eastern Europe Total	9.7	13.0	1,192.2	201.5	101.6		1,373.5			2,767.2

For most countries, 1977 data were available; in some cases, data of previous years had to be used.

Any differences in figures result from rounding.

[a] Soaps Total include soaps other than household and toilet soaps.

[b] The AIS statistics do not specify soap powders separately any more; they are included in syndets solid. Because of their importance, their amount was estimated for the United Kingdom.

[c] In the case of some countries, separate figures for liquid synthetic detergents and cleaners are not available. In such cases, the entire production of synthetic detergents has been included in syndets total.

[d] Solids include heavy-duty detergents, 60° C detergents, light-duty and special detergents, dishwashing agents and household cleaners. Liquids include dishwashing agents and household cleaners, in the United States moreover heavy-duty and light-duty detergents.

[e] Production figures for scouring agents are incomplete.

[f] In European countries, these mainly include fabric softeners; in Greece bleaching agents (sodium perborate); in Turkey detergent pastes; in Guyana bleaching agents, in Japan industrial detergents.

[g] Bulgaria 7,200 t, Czechoslovakia 20,600 t, Hungary 14,900 t, Poland 29,500 t, Rumania 19,700 t.

[h] Heavy duty detergents.

[i] 94,800 t of liquid bleaching agents, 53,900 t of fabric softeners.

[j] Organized sector 291,600 t only.

Sources: National production statistics, statistics of the "Association Internationale de la Savonnerie et de la Détergence" (AIS) and of the OECD, data from the technical and economic press.

Table II

1977 North and South American production (1,000 metric tons)

Country	Soaps			Soap powders [b]	Syndets [c]			Scouring Cleansers [e]	Other cleaning Compounds [f]	Grand Total
	Household	Toilet	Total [a]		Solid [d]	Liquid [d]	Total			
North America										
Canada	2.3	25.1	28.1	4.3	152.9	45.6	198.5	15.6	167.8 [i]	414.3
USA	17.0	332.0	490.0		2,100.0	2,760.0	4,860.0	230.0	920.0	6,500.0
North America Total	19.3	357.1	518.1	4.3	2,252.9	2,805.6	5,058.5	245.6	1,087.8	6,914.3
Latin America										
Argentina	38.0	20.0	58.0	30.0	57.4	10.0	67.4			155.4
Bolivia			3.8							3.8
Brazil	440.0	80.0	520.0		165.0	65.0	230.0			750.0
Chile		5.6	10.2				34.0			44.2
Columbia	87.1	10.0	100.6		59.0	4.7	63.7			164.3
Cuba			52.5		21.8		21.8			74.3
Dominican Republic	20.8	1.9	22.7		5.7		5.7			28.4
Ecuador			30.4				3.3			33.7
El Salvador			12.3				8.0			20.3
Guadeloupe and Martinique										
Guatemala	10.0	2.0	12.0		4.0		4.0			16.0
Guyana			2.2				1.0			3.2
Haiti	6.9	0.1	7.0				0.2			7.2
Jamaica			5.5				8.3		4.1	17.9
Mexico	137.0	58.0	195.0		420.0		434.0	12.3	3.0	644.3
Nicaragua			23.0							23.0
Panama			1.9		7.0		7.0			8.9
Paraguay			7.7							7.7
Peru	45.0	11.0	56.0		40.0		40.0			96.0
St. Lucia	0.5		0.5							0.5
St. Pierre et Miquelon										
Trinidad and Tobago	3.0	1.5	4.5							4.5
Uruguay	13.0	4.0	17.0		6.0		6.0			23.0
Venezuela	50.0	10.0	60.0		100.0	1.0	101.0		1.0	162.0
Latin America Total	851.3	203.5	1,202.8	30.0	885.9	97.7	1,035.4	12.3	8.1	2,288.6

For most countries, 1977 data were available; in some cases, data of previous years had to be used.

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[a] Soaps Total include soaps other than household and toilet soaps.

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[c] In the case of some countries, separate figures for liquid synthetic detergents and cleaners are not available. In such cases, the entire production of synthetic detergents has been included in syndets total.

[d] Solids include heavy-duty detergents, 60° C detergents, light-duty and special detergents, dishwashing agents and household cleaners. Liquids include dishwashing agents and household cleaners, in the United States moreover heavy-duty and light-duty detergents.

[e] Production figures for scouring agents are incomplete.

[f] In European countries, these mainly include fabric softeners; in Greece bleaching agents (sodium perborate); in Turkey detergent pastes; in Guyana bleaching agents, in Japan industrial detergents.

[g] Bulgaria 7,200 t, Czechoslovakia 20,600 t, Hungary 14,900 t, Poland 29,500 t, Rumania 19,700 t.

[h] Heavy duty detergents.

[i] 94,800 t of liquid bleaching agents, 53,900 t of fabric softeners.

[j] Organized sector 291,600 t only.

Sources: National production statistics, statistics of the "Association Internationale de la Savonnerie et de la Détergence" (AIS) and of the OECD, data from the technical and economic press.

sumption in mainland China are once again available with soap production estimated at 1.6 million tons in 1976 and 1.8 million tons in 1977, while detergent production was about 200,000 tons in 1976 and 257,000 tons in 1977.

Henkel said soaps production showed a 4% increase in 1974-76 and rose another 2% during 1977. Soap powder production rose 5% from 1975-76, then jumped another 11.8% during 1977. Growth of powder detergents has been slowing, the Henkel report said, largely because of increased production of liquid detergents in the U.S. Worldwide, production of liquid detergents was almost 60% of powder detergent production. Excluding China's production, powder detergents shows an 11.7% drop in production from 1976 compared to 1974.

Per capita consumption by continents for 1976 (with 1960 figures in parentheses) were listed as: Western Europe 16.9 (9.7 kg); Eastern Europe, 8.1 (6.5); North America 26.8 (12.8); Central and South America 6.2 (4.1 and 4.6, respectively); Oceania 15.3 (13.1), Africa 2.5 (2.3); and Asia 2.3 (1.0). Excluding China from the Asia figures would raise the Asian 1976 per capita consumption to 2.5 kg. World per capita consumption in 1960 was 3.8 kg; in 1976 it was 6.2 kg, including China, and 7.3, excluding China.

Henkel's report notes that total consumption in Asia has "risen considerably, but has been absorbed by population growth."

The report says growth in Europe should be at a 1 to 2% annual rate, while in the United States, production increases will probably match population growth. Eastern Europe's per capita consumption will depend on economic developments in those nations, while in Latin America a "slow growth to more than average world consumption would seem possible." □

An SDA fish story

AOCS member Karl Zilch of Emery Industries returned home from the Soap and Detergent Association annual meeting with his own fish story.

After using one of the free afternoons for deep sea fishing, Karl described how he caught a sailfish—in the side, but he did catch it—and struggled with the beast for more than 30 minutes before bringing it alongside for a rather cumbersome recovery.

Dimensions? Sixty-three pounds in weight, approximately 83 inches long and the biggest catch by an SDA member during the meeting. Never mind that SDA Vice President Bob Singer had shrunk the dimensions by a few pounds and a few inches for the awards breakfast a few days later, there was a general consensus the fish would not fit on a bun.

No, Karl did not have the fish mounted, not wishing to displace three freshwater fish from the northern U.S. currently on a den wall. He also didn't want to pay an excess baggage charge, or the cost for taxidermy. □

Table III

1977 Oceania, Africa, Asia production (1,000 metric tons)

Country	Soaps			Soap powders [b]	Syndets [c]			Scouring Cleansers [e]	Other cleaning Compounds [f]	Grand Total
	Household	Toilet	Total [a]		Solid [d]	Liquid [d]	Total			
Oceania										
Australia	7.8	27.4	42.4	7.9	92.6	78.1	170.7	12.6		233.6
Fidji Islands			4.6							4.6
New Caledonia	0.3		0.3							0.3
New Zealand	2.0	6.5	8.5	8.9	6.3	10.1	16.4			33.8
Oceania Total	10.1	33.9	55.8	16.8	98.9	88.2	187.1	12.6		272.3
Africa										
Algeria			58.1				25.0			83.1
Angola			18.6							18.6
Benin										
Cameroon	12.1		12.1							12.1
Central Africa	0.2		0.2							0.2
Chad			0.2							0.2
Congo	4.7		4.7							4.7
Egypt	130.0	25.0	155.0		26.0		26.0			181.0
Ethiopia			11.8							11.8
Gabon			1.4							1.4
Ghana			29.9							29.9
Ivory Coast			25.0				8.0			33.0
Kenya	10.0	4.8	14.8		15.0		15.0			29.8
Liberia			2.9							2.9
Libya					15.0		15.0			15.0
Madagascar			15.0							15.0
Mali			14.6							14.6
Morocco					25.0		25.0			25.0
Mozambique	22.0	0.7	22.7		1.1	0.4	1.5			24.2
Niger			2.5							2.5
Nigeria	74.7	23.0	97.7		58.0		58.0			155.7
Ruanda			0.7							0.7
Senegal	19.5	0.8	27.9							27.9
Sierra Leone										
Somalia			1.3							1.3
South Africa	13.4	30.1	43.5	102.8		29.8	29.8	11.5		187.6
Sudan					4.0		4.0			4.0
Tanzania			18.3				0.2			18.5
Togo			0.2							0.2
Tunesia					18.0		18.0			18.0
Uganda			5.1							5.1
Upper Volta			3.6							3.6
Zaire			15.0				1.2			46.2
Zambia			5.1				7.0			12.1
Zimbabwe-Rhodesia		1.0	1.0		28.0		28.0			29.0
Africa Total	286.6	85.4	638.9	102.8	190.1	30.2	261.7	11.5		1,014.9
Asia										
Afghanistan			0.6							0.6
Burma			56.0							56.0
Cambodia			0.4							0.4
Ceylon-Sri Lanka										15.3
China			1,800.0				257.0			2,057.0
Corea, Dem.Rep. (North)			83.2							83.2
Corea, Rep. (South)	117.8	14.3	132.1		47.9		47.9			180.0
Cyprus	1.5	0.5	2.0 [j]		1.7	0.5	2.2			4.2
India			860.0							860.0
Indonesia	194.6		194.6				38.5			233.1
Iraq			26.3				25.0			51.3
Iran			30.0		89.0		89.0			119.0
Israel	5.1	3.3	8.9		36.5	7.0	43.5			52.4
Japan	36.5	97.9	150.2		474.4	244.8	719.2		99.8	969.2
Jordan			13.7				6.0			19.7
Kuwait					0.3		0.3			0.3
Laos			0.3							0.3
Lebanon					12.0		12.0			12.0
Malaysia	11.7		11.7	35.3						47.0
Mongolia			2.8							2.8
Nepal			1.0							1.0
Pakistan										147.3
Philippines	62.1	21.5	83.6				66.4			150.0
Saudi Arabia					35.0		35.0			35.0
Singapore	3.9	1.3	26.4				18.8			45.2
Syria			27.2	4.5	8.0		8.0			39.7
Taiwan	11.4	15.4	26.8				68.7			95.5
Thailand							59.0			59.0
Turkey			46.4		50.0	5.0	55.0	10.0	14.0	125.4
Vietnam			0.1				15.9			16.0
Asia Total	444.6	154.2	3,584.3	39.8	754.8	257.3	1,567.4	10.0	113.8	5,477.9
World Grand Total	1,976.1	1,198.7	8,055.4	445.2	7,477.8	4,472.0	13,936.2	606.2	1,833.7	25,039.3

For most countries, 1977 data were available; in some cases, data of previous years had to be used.

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[a] Soaps Total include soaps other than household and toilet soaps.

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Sources: National production statistics, statistics of the "Association Internationale de la Savonnerie et de la Détergence" (AIS) and of the OECD, data from the technical and economic press.

LAS biodegradability reviewed

Research work at Conoco clearly indicates all the carbon in linear alkylbenzene sulfates (LAS) biodegrades to CO_2 and does not pose any threat to the environment, contrary to some previous reports, Robert Huddleston of Conoco Chemicals Co. reported at the SDA meeting during January.

A year ago, Huddleston said work to that date had shown the aromatic ring in LAS underwent nearly complete cleavage. Since then, further work has shown that (1) the alkyl and ring portions of the LAS molecule are extensively biodegraded during secondary waste treatment, i.e., semi-continuous activated sludge system (SCAS) and (2) carbon residues surviving secondary waste treatment continue to be converted into CO_2 in receiving waters that contain even few nutrients and low microbial population.

Work published in 1976 and a paper presented in Spain in 1979 had questioned the biodegradability of the aromatic ring. Huddleston said the Conoco work consisted of using ^{14}C to label the akyl carbon in some samples and the ring carbon in other samples to determine what happens. Laboratory scale SCAS apparatus was constructed and samples from local sewage systems tested to make sure the test method produced the same results as regular sewerage treatment. Simulated waste treatment converted 62% of the total carbon to CO_2, 29% was in biomass and 9% was in soluble residue. Further post-treatment exposure showed a 95.9% of carbon found in CO_2, 3.8% in biomass and 0.3% in soluble residue. Huddleston says he believes extending the test would provide nearly 100% conversion to CO_2. Persons wishing copies of the paper may write to Huddleston at Conoco Chemicals Co., 1000 S. Pine St., Ponca City, OK 74601. Conoco has a limited number of copies of Huddleston's 1979 report and the 1980 report bound together in one volume. □

FMC researchers urge STPP use

Industrial and institutional detergent users could obtain better cleaning results in low temperature hard water if they used detergents with increased amounts of sodium tripolyphosphate, according to FMC Corporation's Industrial Chemical Group Research and Development Center at Princeton, NJ.

FMC held a trade press news conference late last year to disclose its reports. FMC researchers said the increased use of STPP for industrial and institutional cleaning would not add significantly to phosphate discharge to waterways or lakes.

STPP would soften water as well as improve soil removal and dispersion, the FMC reports said. For industrial and institutional dishwashing, for example, FKC said washing now done at 140 F could be done at 120 F by raising STPP content in formulations to 40% or 50% from the present 20%. Another report on carwash detergents reached a similar conclusion, adding that increased STPP use permitted formulations with less corrosive effect on anodized aluminum brightwork.

A third report on heavy duty liquid formulations said that while STPP is not usually regarded as a good ingredient for liquid formulations, adding silicates to a liquid formulation increased STPP solubility and hydrolytic stability. Copies of all three reports are available from FMC

Corp., Industrial Chemical Group, Dept. M, 2000 Market St., Philadelphia, PA 19103 (tele: 800-523-4614). Phosphate is among the chemicals marketed by the firm.

FMC said increased use of STPP in detergents could mean significant savings in energy costs for industrial and institutional detergents users. □

Boehme to speak in Japan

AOCS member Werner Boehme, technical director of the Fat Protein Research Foundation, will speak at two seminars in Japan on use of lime soap dispersing agents in soap.

The seminars will be presented April 8 in Tokyo and April 10 in Osaka. The programs are being presented by the U.S. National Renderers Association and the Japan Soap & Detergent Industrial Cooperative Association, in cooperation with the Japan Oil Chemists' Society. The seminars also will discuss use of LSDA in low- or non-phosphorus synthetic detergents. □

Meetings

SDA concerns: energy, economy, regulation

The estimated 1,000 registrants for the Soap and Detergent's 53rd annual meeting in February spent a lot of time talking about concerns common to many Americans—energy costs, inflation, and government regulation—as well as technical industry matters.

On the technical subject, Robert Huddleston of Conoco said his studies on the biodegradability of linear alkylbenzene sulfates (LAS), concluding, "LAS carbon is completely biodegradable to CO_2 and therefore LAS does not present a threat to the environment." A report on Huddleston's paper follows this article.

On the energy side, Shell Oil Company vice president James H. DeNike said oil supplies for 1980 should be adequate to meet demand, barring unforseen disruptions. But for the full decade, the outlook is gloomy, DeNike said, with reduced production overseas and higher prices. DeNike said present, the U.S. produces 10 million barrels of oil per day and imports another eight million barrels a day. The oil exporting nations may reduce consumption and raise prices, DeNike said.

CBS News business correspondent Ray Brady, in a separate talk, said it appeared to him that oil supply and demand would be in balance for 1980, but there was only about a 2% margin.

DeNike also warned SDA registrants that federal regulations in the future may or may not assure supplies of naptha and gas-oils to the petrochemical industry. Six years ago, during the 1973-74 allocation programs, petrochemical feedstock materials were protected, DeNike said. New regulations do not contain the specific protection provided by the earlier regulations, DeNike said.

There were two talks on regulatory affairs at the meeting. Murray L. Weidenbaum of the American Enterprise Institute, spoke to a plenary session on "American Industry Faces 1984." Emile F. Harp, vice president and director of engineering for the Armak Company, spoke to a concurrent session on "An Overview of Environmental Regulations."

Weidenbaum said the Clean Air Act, Clean Water Act and other federal acts of the late 1970s have provided enough material to keep the governmental regulatory pipelines flowing throughout the 1980s, even if no further legislation is approved. He urged businessmen to make clear to consumers the ultimate cost of regulations.

Harp outlined the various acts administered by the federal Environmental Protection Agency and how they could affect soap and detergent firms, urging management to keep the regulations in mind when considering new plants or major capital improvement projects.

The Clean Water Act contains different provision for firms that discharge waste directly into streams or other public bodies of water and those firms that discharge waste into publicly owned treatment works. About 95% of soap and detergent plants use public sewage systems, he said.

Title II of the act contains provisions for charging special rates to firms discharging into sewage systems. One provision of the act, presently in abeyance, would require industrial firms to help pay capital costs for new publicly owned treatment plants in relation to the sewage load the firm puts into the system, Harp said. Industrial reaction to this proposal led to its withdrawal, but a final decision as to whether to use the provision is due by early summer, he said, adding that approval could be quite costly to all industry.

Title III, which defines pollutants, poses no particular problems for the soap and detergent industry at this time, Harp said, but there is a proposal to add ammonia to the list of regulated compounds. Regulations on toxic compounds would require existing plants to use the best available technology to eliminate or control such compounds, whereas new plants could be required to use the best demonstrated technology. Provisions of this title could permit regulators to dictate how a plant handles its waste, not just set standards for the effluent from the plant, Harp said, noting it would mean government would be telling a firm how to operate its plant.

The soap and detergent industry is not as significantly