

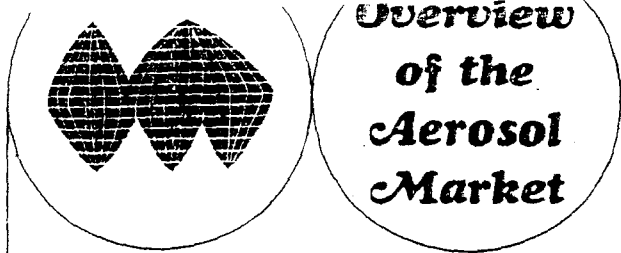
The Power of New Products

In the first years of aerosol production, household-oriented products were the mainstay of the industry. However, in 1955 the balance began to move in the direction of personal products, until now they account for almost half of total production. A major factor in the growth in importance of personal aerosols has been the popularity of hair sprays and, more recently, personal deodorants. In the search for more aerosol products with the marketing strength of these two titans, contract packagers, marketers, and the "Freon" Products Laboratory of Du Pont have been generating marketable ideas at a steady rate in recent months. Among the products that have come along are antiperspirants, breath fresheners, foam moisturizers and body lotions, hand creams, dry powder shampoos, chemical hot shave products, feminine hygiene products, and a depilatory.

The household and miscellaneous categories have not been neglected altogether. Among the recent entries are new special-purpose and all-purpose cleaners, a carpet cleaner, a Christmas decorator and do-it-yourself kit, each of which use a separate propellant cartridge as a power source, a fire chain in a can, pressure sensitive adhesives, a tear gas dispenser, and for clothing, a deodorant, wrinkle removers, and products which enable alteration of permanent press apparel.

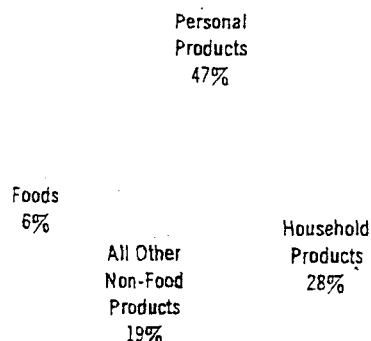
Evidence of the imagination and inventiveness for which the aerosol industry is noted can be clearly seen in the recent marketing of such unusual products as an aerosol vacuum generator, an aerosol valvemaker which works by freezing water in a pipe to block the pipe so that repair work can proceed, a pressurized liquid tooth and gum cleaner, a swimming pool alarm for the prevention of accidental drownings, and an aerosol diamond powder spray for precise polishing operations. The type of ingenuity which led to the creation of these products can result in concepts which will become bright new aerosol stars of the first magnitude. The development of dual dispensing systems may be one of the breakthroughs that will send aerosol production statistics to new records in the future.

A worthwhile industry goal on which to set our sights: to so conduct our businesses that in 1978 half of all the aerosols produced will be developments made since 1968.



Overview of the Aerosol Market

1967



MILLIONS OF AEROSOL UNITS PRODUCED

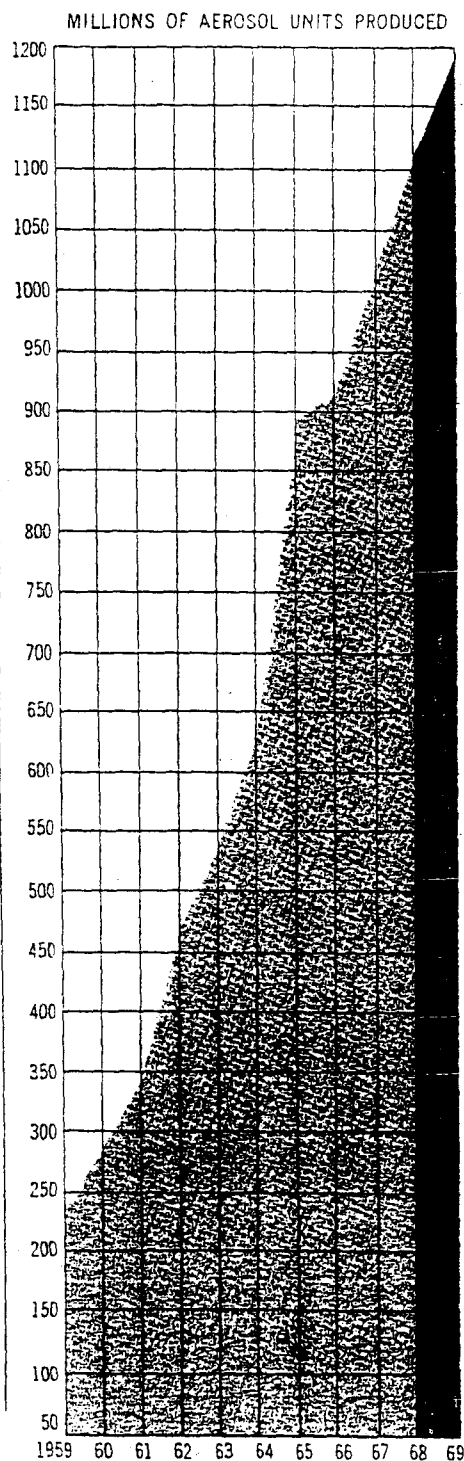
	'65	'66	'67	Est. '68
Personal Products	895	912	1020	1109
Household Products	519	560	617	666
All Other (Non-food)	346	368	409	438
Food Products	130	123	126	130
TOTAL	1890	1963	2172	2343

Some remarkable facts about a remarkable industry

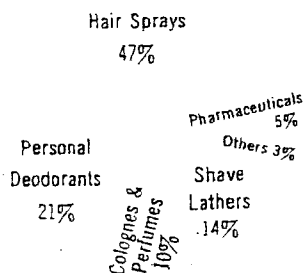
- Since 1942, when the first propellant for high-pressure aerosol insecticides was produced by Du Pont, over 19 billion aerosol units have been manufactured.
- Aerosol propellants have long since taken over as the single largest application for fluorocarbons. Their use in aerosols even exceeds the amount produced for refrigeration uses, which is why fluorocarbons were originally developed way back in the early 1930's.
- In 1967 aerosol production in the United States and Canada reached and exceeded the 2 billion unit mark!
- World production of aerosols is now estimated at about 3.3 billion units with the United States and Canada accounting for almost two-thirds of the total. In 1967, the 100 million production mark was exceeded by only five countries besides the U. S.—West Germany, Japan, France, The United Kingdom, and Italy. Together, these five produced over 900 million units in 1967.
- For the U. S. and Canada, the 200 million units by which the total volume of aerosol production in 1967 increased over 1966 was more than the entire production of aerosols in 1954!
- Aerosol packages now account for over \$2.0 billion in retail sales.
- The number of containers produced by the can manufacturers in the U. S. for aerosol use is exceeded now only by units produced for beverages, fruits and vegetables, and pet food. On the other hand, the growth in aerosol container production is second only to the growth in beverage container production!
- In North America, four product categories—hair sprays, starches, personal deodorants, and coatings—made up more than 50% of 1967 production.
- Over 200 different types of aerosol products can be purchased in the United States, ranging from "pure dry air" to aerosolized diamond dust!
- In the U. S., more pounds of the high strength engineering plastics, nylon and polyacetal are used for aerosol valves than for any other single application! In addition, tens of millions of pounds of polyethylene are consumed yearly in the manufacture of dip tubes, overcaps and actuator buttons to supply the needs of aerosol product manufacturers.



Personal Products Highlights



INDIVIDUAL SHARES OF PERSONAL PRODUCTS PRODUCTION—1967



MILLIONS OF AEROSOL UNITS PRODUCED

	1965	1966	1967	1968
Hair Sprays	441	477	474	495
Personal Deodorants	166	187	215	244
Shave Lathers	131	125	134	129
Colognes & Perfumes	77	90	98	108
Pharmaceuticals	50	52	54	58

Hair sprays resumed their upward climb in 1967 with a healthy 11% increase over 1966. Increased usage of men's hair spray, as measured in the "Freon" Products Division Hair Spray Trends Studies, is probably partly responsible for this rise along with a larger number of women who use hair spray more often than ever before. A new entry, and one which bears watching, is the convenient aerosol hair setting spray or foam.

The growth in personal deodorants production continued in 1967 and went well over the 200 million unit mark. Last year, after only 5 or 6 years of major marketing activity, the character of the market began to change from strictly personal deodorants to anti-perspirant/deodorants to take advantage of new technology and, presumably, consumer preference for a dual-action aerosol product. A new product variant in this category is the feminine hygiene deodorant now being sold by at least three marketers.

Colognes and perfumes continued their rise. The quantity of these products loaded in 1967 was 2½ times the production figures for 1960. Another interesting statistic is that the number of companies marketing men's toiletries has doubled to more than 150 in the past 5 years. The rise in popularity of men's after-shave lotions and colognes has no doubt contributed to these impressive gains in aerosol cologne and perfume production.

Fresh concepts in scented products have made news recently—among them the "fluff" form for an aerosol body lotion and the "partout", a quick-breaking foam perfume/bath oil. Bath oil sprays or foams and after-bath skin preparations appear to be becoming more popular as are most products aimed at use during or after bathing or showering.

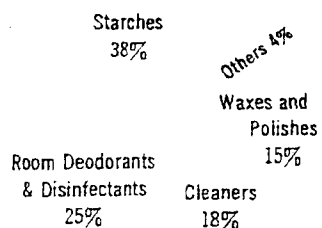
A hot shaving product in aerosol form made its debut late in 1967. It is possible that a number of other marketers will bring out hot shaving products in 1968.

Another new product type, the aerosol breath freshener, made a noticeable impression in the marketplace. It is too soon to estimate the eventual magnitude of the market, but a number of manufacturers have already entered the field and more are understood to be close to market introduction.

Household Products Highlights

MILLIONS OF AEROSOL UNITS PRODUCED				
	1965	1966	1967	Est. 1968
Starches	182	251	235	285
Room Deodorants and Disinfectants	154	255	155	160
Cleaners	93	105	130	126
Waxes and Polishes	71	73	92	100

INDIVIDUAL SHARES OF AEROSOL HOUSEHOLD PRODUCTS PRODUCTION—1967

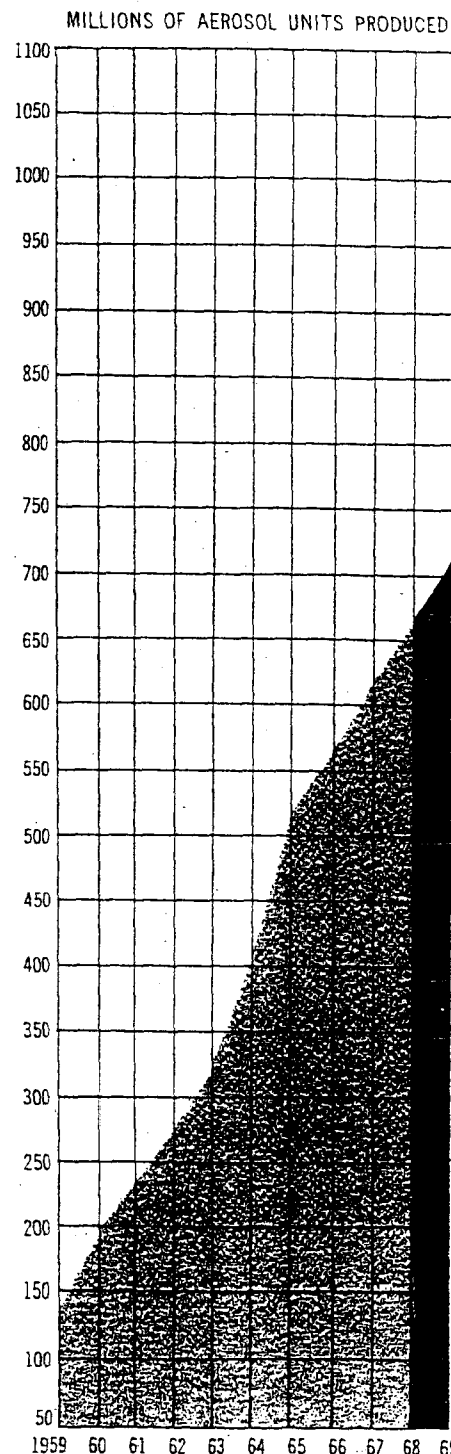


Starches continued to dominate the household products market. Three out of every eight aerosol units loaded in this category were ironing aids of one type or another. Together with room deodorants and disinfectants, they account for almost two out of every three household aerosols produced in 1967. Among the new products which debuted in recent months are a deodorant fabric finish and a starch with a soil retardant additive. New items especially designed for permanent press clothing may begin to be factors. One of these makes it possible to alter resin-impregnated apparel.

There have been some interesting developments in the cleaners segment of this market recently. There are signs that the aerosol form will become increasingly important as the package for all-purpose cleaners replacing the finger pump. A nationally advertised disinfectant aerosol cleaner has just been introduced and similar products with or without germicidal ingredients are just beginning to gain popularity. In another direction, segmentation of the cleaning market continues. Just entering the marketplace is a carpet cleaner intended for cleaning large carpeted areas. There now exist in the aerosol cleaner market specialized products to clean car bodies, car chrome, metal, ovens, bathrooms, pots and pans, windows, carpets, upholstery, vinyls, leather, walls, and spots in rugs and clothing.

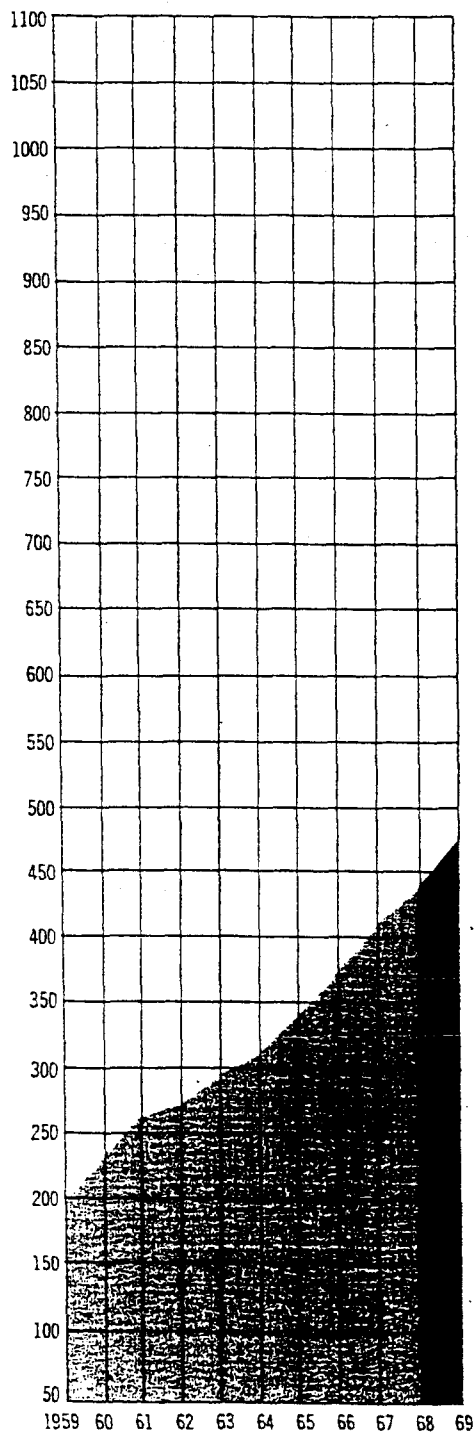
Aerosol waxes and polishes are still growing in volume, with a more than 25% increase over 1966. This is accounted for by the resounding success of the products containing lemon oil or similar ingredients as well as by the development of new and improved formulations.

The household products category continues to show strength and imagination in the technical and marketing areas. In this atmosphere new records cannot help being made in the years to come.

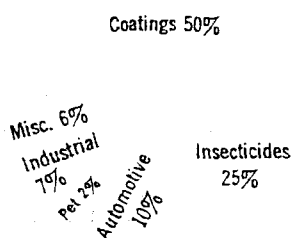


All other Products

MILLIONS OF AEROSOL UNITS PRODUCED



INDIVIDUAL SHARES OF ALL OTHER
PRODUCTS PRODUCTION—1967



MILLIONS OF AEROSOL UNITS PRODUCED				
	65	66	67	EST. 68
Coatings	178	188	205	215
Insecticides	75	95	101	106
Automotive	35	28	42	51
Industrial	24	28	28	30
Var. and Per.	10	10	16	12

Coatings continued to maintain their substantial lead over all the other products in this category in 1967. They registered an 11% increase compared to 1966, and coatings is now one of the select group of only four aerosol categories in the over 200 million units/year class. Some of the recent product variations include vinyl coatings which yield moisture, abrasion and sunlight resistant surfaces, epoxy-type paints, and a stainless steel spray to prevent corrosion of equipment and machinery. Insecticides production continued to rise for the third year in a row, and this oldest of aerosol categories celebrated a milestone crashing the 100 million unit mark for the first time. A substantial increase in the percentage of automotive products was accounted for in good measure by the introduction of a new aerosol product which, when sprayed on the tire thread, permits the motorist to regain road friction in icy or snowy conditions. Aerosols for the ubiquitous motorist should continue to be a strong development area in the future. Particularly needed: an effective car washing product, a coating to reduce the tenacity of grime on car surfaces, an interior treatment to reduce the dust settling problem, an effective defogger (or an antifogger) for car windows.

Industrial aerosols are still growing slowly. Perhaps the major item in this group is the mold release agent used in the plastics industry. Other products such as adhesives, lubricants, cleaners, and special types of coatings and inks are also in the industrial sector.

Du Pont Projections

DU PONT COMPANY ESTIMATES AND PROJECTIONS OF AEROSOL PRODUCTION

Millions of units—United States and Canada

YEAR		1959	1960	1961	1962	1963	1964	1955	1966	1967	Est. 1968	Est. 1969
PERSONAL PRODUCTS	SHAVE LATHERS	75	79	85	95	98	117	131	135	144	159	162
	HAIR SPRAYS	89	121	152	246	294	339	441	427	474	495	515
	MEDICINALS & PHARMACEUTICALS	10	12	20	37	40	36	50	52	54	59	63
	COLOGNES & PERFUMES	38	43	55	55	60	58	77	90	98	108	115
	PERSONAL DEODORANTS	—	—	—	—	—	—	166	187	214	244	270
	OTHERS	25	25	28	40	42	82	30	21	36	44	64
	TOTAL	237	280	340	473	534	632	895	912	1020	1109	1189
HOUSEHOLD PRODUCTS	ROOM DEODORANTS & DISINFECTANTS	63	78	86	99	119	109	154	156	155	160	165
	CLEANERS (ALL TYPES)	24	22	26	31	47	76	93	105	110	126	140
	WAXES & POLISHES	12	41	42	53	51	68	71	73	92	100	108
	STARCHES	—	21	51	65	87	120	182	211	235	245	253
	OTHERS	39	27	23	23	20	35	19	15	25	35	42
	TOTAL	138	189	228	271	324	408	519	560	617	666	708
ALL OTHER PRODUCTS	COATINGS	73	88	104	120	148	165	178	185	205	215	223
	VETERINARIAN & PET PRODUCTS	4	6	8	7	7	9	10	10	10	12	14
	INSECTICIDES	79	93	87	89	74	73	79	95	101	106	110
	AUTOMOTIVE	—	15	18	8	33	31	33	28	42	51	61
	INDUSTRIAL	—	—	—	—	—	19	24	28	28	30	33
	OTHER MISCELLANEOUS PRODUCTS	30	28	35	37	24	7	22	22	23	24	27
	TOTAL	186	230	252	261	286	304	346	368	409	438	468
SUB GRAND TOTAL		561	699	820	1005	1144	1344	1760	1840	2046	2213	2365
AEROSOL FOODS		85	70	55	63	67	75	130*	125*	126*	130*	140*
GRAND TOTAL—ALL AEROSOLS		646	769	875	1068	1211	1419	1890	1963	2172	2343	2505

*Includes refillable containers.

OTHER PERSONAL PRODUCTS include: shampoos, suntan preparations, hand lotions, powders, depilatories, dental creams, personal deodorants for 1960-1964. ■ OTHER HOUSEHOLD PRODUCTS include: spot removers, shoe polish, dust mop treatments, silicone sprays. ■ COATINGS include: snow. ■ INSECTICIDES include: high and low pressure products (including space, residual, and moth proofers). ■ OTHER MISCELLANEOUS PRODUCTS include: anti-static sprays, fire extinguishers, methyl bromide-type fumigants, industrial products for 1960-1963. ■ DEVELOPMENT PRODUCTS are included in the "Other" column of each major product group.

E. I. DU PONT DE NEMOURS & CO. (INC.)
FREON® PRODUCTS DIVISION
WILMINGTON, DELAWARE 19898
TELEPHONE 302-774-8971



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