

Handbook for

**The Homburg-Murmann Global
Database of Synthetic Dye Firms and
Plants**

1848-1914

March 2016

Guidelines for Citations

Database

Ernst Homburg and Johann Peter Murmann. 2016. Global Database of Synthetic Dye Firms and Plants, 1848-1914, <<http://jpm.li/113>>.

Handbook

Ernst Homburg and Johann Peter Murmann. 2016. Handbook for the Global Database of Synthetic Dye Firms and Plants, 1848-1914, <<http://jpm.li/113>>.

Preface

This synthetic dye industry database covers all firms and plants that produced synthetic dyestuffs and/or dyestuffs intermediates between about 1845 and 1914 anywhere in the world.

This global database was created as part of a research project by Johann Peter Murmann (Columbia University, 1991-1997, Ph.D. Student; Northwestern University, 1997-2005, Assistant Professor; Australian Graduate School of Management, 2006-present, Professor) on the industrial organization and evolution of the national synthetic dye industries of Great Britain, Germany, France, Switzerland, and the United States of America. Professor Ernst Homburg (Maastricht University) supplied the raw data.

In his previous research effort on the development of the synthetic dye industry, Professor Homburg had kept notes on firms any time he encountered a name of a company in a source. These card files formed the basis for creating life histories of firms and plants. To create the most comprehensive and accurate life histories possible of all firms that ever existed anywhere in the world before 1914, many additional sources were consulted. Professor Homburg's original sources and all other sources used for this database are all listed in this handbook. Every record in the database identifies its specific sources.

The data was initially entered into the database in 1996 by Esther van 't Klooster, Thessa van Hoorn and Marjan van de Goor (all masters students at Maastricht University). Ernst Homburg and Johann Peter Murmann subsequently went over the entire database to make corrections, add additional information, and to ensure that the coding rules were consistently applied.

The database was created in FileMaker Pro 8.5 (.fp7) format and later converted into Filemaker Pro 12 so it could be put onto the internet. The database is publicly available for qualified researchers to look up information on firms and plants. Contact Johann Peter Murmann or Ernst Homburg for access.

March 2016

Contents

Preface

I. A Remark on Sources and the Quality of the Data	page 1
II. The Firm and Plant records	page 3
III. The Principles of Coding and Entering Data	page 6
3.1 General	page 6
3.2 Firm records	page 9
3.3 Plant records	page 12
IV. Abbreviations Used in Database	page 14
4.1 General abbreviations	page 14
4.2 Abbreviations used to describe references	page 15
V. Classification of Products	page 20
VI. Bibliography	page 23
VII. Firm Indexes	page 32

A Remark on Sources and the Quality of the Data

Several primary sources have been consulted. The most important of those were: the reports of the International Industrial Exhibitions of 1850, 1855, 1862, 1867, 1873, 1876, 1878, 1889, 1893 and 1900; Trade directories of Paris (1850-1869), Lyon (1862-1870), Great Britain (1868-1871, 1882, 1917), London (1860-1900); Wenzel's directories of the German chemical industry of 1888, 1892, 1898, 1906, 1912 and 1914; Mückenberger's directory of chemical industries in other countries than Germany of 1905, 1909, 1913, and Chateau's important book (1868) on the early dye industry, Schultz (1882, 1901); Schultz & Julius (1891, 1902), Color Index (1924). Another important source used was the membership directory of the German Chemical Society, in which the business addresses of chemists are mentioned, allowing inferences about the existence of particular firms.

Information on dyestuffs and dyestuffs intermediaries firms and plants was also obtained by consulting virtually all major histories of the industry, and numerous company histories and other secondary sources. Major sources were the books by Haber (1958), Cayez (1979), Fox (1986), Beer (1959) and Travis (1993). A full list of sources will be found in Part VI, Bibliography.

This database contains no data on developments after 1914.

For the major producing dye countries information on firms came from different sources that varied in their level of details. The quality of the data, however, differs not only across countries but also for different periods in the same country. For this reason it is important to give user of the database an overview of the quality of the coverage in the database.

Britain: Fox (1987), Good data on 1862 (London Exhibition), two nationwide chemical directories (1868, 1870), Kelly's directories for London 1853, 1862, 1876, 1885, 1888, 1893, 1900, 1905, 1912, Kelly's national directories (outside of London) 1881, 1888, 1893, 1895, 1917, Mückenberger 1905, 1909, and 1913. British data on firms is a bit more dense until the early 1870s. Fox (1987) gives detailed coverage for the entire period but not for the small, short-lived firms.

Germany: Wenzel's directories of the German chemical industry of 1888, 1892, 1898, 1906, 1912 and 1914; Membership list of Verein zur Wahrung der Interessen der Chemischen Industrie 1877-1897 (yearly), Exhibition reports 1855, 1862, 1867, 1873, 1876, 1900), Survey of dye industry of Engler (1884), Pohl's book on the chemical industry in the Rhineland until about 1875, and several German firm histories. German data is very dense for the period 1882-1914. We may have missed some very small companies outside the Rhineland in the 1850s, 1860s, and 1870s.

France: Chateau's book (1868) on the early dye industry, Trade directories of Paris (1850-1869) and Lyon (1862-1870), Cayez (1979) on the Lyon industry, World Exhibition of 1855, 1867, 1878, 1889, 1900), Mückenberger 1905, 1909, and 1913. French data are excellent until 1870 (better than British and German data. After 1870, data on Lyon are better than on the Paris area, mainly because of Cayez.

United States: Haynes and all the sources mentioned by Haynes as well as Mückenberger 1905, 1909, and 1913. United States data is good when it is based on government inquiries as for example in the early 1880s and the years just before 1914.

Switzerland: Books by Burgin and Jaquet and World Exhibition reports, especially 1873, 1896, 1900 Mückenberger 1905, 1909, and 1913. Data on Switzerland is good throughout because of the concentration of the dye industry in the Basle and Geneva areas. Local histories and municipal reports cover the development of the industry in detail.

Russia: For the history until 1903 we relied on a paper in *Chemische Industrie* 1905, Vol. 28 and histories of German and Swiss companies operating in Russia. For period from 1903 until 1914 we relied on Mückenberger 1905, 1909, and 1913.

We relied on Mückenberger 1905, 1909, and 1913 also for the following countries: Austrian Empire, Belgium, Brasil, Canada, Denmark, Greece, Italy, Netherlands, Rumania, Spain.

Part II

The Firm and Plant records

FIRM LEVEL DATABASE

Firm ID # 193	Corporate ID # 193	Dubious Firm	
Firm Name Farbenfabrik vorm. Friedrich Bayer & Co.			
Year 1888			
Firm Year Code 1931888			
Country Germany			Investigate *need more information on years after about 1900. P.M. A. "1" was not put the Trading of Dyes Field although a specification was present. I added it.
Country Year ID# 21888			
Legal Status AG			
Ownership			
Town Elberfeld (Rheinprovinz)			
Location			
Predecessors Friedrich Bayer & Co.			
Successors			
Founding Date 1881			
End Date 1925			
Total Workforce 1100	Number of Workers 1025		
Number of Chemists 42	Total Staff		
No Direct Sales to Endusers	Predominantly Trader		Firm Entry Year
Sales Offices			Firm Exit Year
Company Capital 7500.000	Sales Minimum	Sales Maximum	
Sales			
Profits			
		Change Made 12/28/2006	
Firm Year Code Copy 1931888		Double Count Firms	
Dividends			
Director Henry T. Boettinger			
Previous Activities:		Specification	
Trading of Dyes 1		trading dyewood extracts	
Trading of Other Products			
Dyeing Works			
Print Works			
Natural Dye Works			
Fine Chemicals			
Tar Distillation			
Pharmacy			
Other Previous Activity			
References	Bayer Archive, 7/B.I.; Wenzel, 1892, p. 100 (address); Wenzel, 1888, p. 62		
Notes	In 1888 was a pharmaceutical production started. (I do not know in which plant) [Heine, 1990, p. 9]		
	* MG:		
	Number of Workers: ± 1000 (Sonnemann & Haber, 19th century) 1050 (Wenzel, 1888)		
	Total Workforce: 1100 (List from Bayer archives)		
	Chemists: 42 (List from Bayer archives)		

.....

done by Thessa van Hoorn 1931888.....
 corrected by Ernst Homburg.....

Plants Directly Owned / Firm's Domestic Product Portfolio

ID#	Town	ND	FC	IBC	OBC	Int	AnD	F	AzD	Ali	Ind	Res	Nap	PhD	Sul	M	Pha	Pho
175.	Elberfeld.....					1.	1.	1.		1.				1.				
179.	Schelploh near.....					1.												
465.	Haan, near.....					1.												
177.	Barmen.....						1.		1.									

Plants Indirectly Owned / Firm's Foreign Portfolio

ID#	Town	ND	FC	IBC	OBC	Int	AnD	F	AzD	Ali	Ind	Res	Nap	PhD	Sul	M	Pha	Pho
178.	Butirki (near.....									1.								
180.	Elers (Nord) near.....						1.		1.									
396.	Rensselaer, Albany.....						1.	1.										

PLANT LEVEL DATABASE

Plant ID#	175	Holding Firm ID#	1	Dubious Plant	.....
Firm ID#	193	Farbenfabrik vorm. Friedrich Bayer & Co.			.....
Country	Germany			Investigate	
Town	Elberfeld (Rheinprovinz)				
Location	Vogelsaue				
Name					
Year	1888				
Firm Year Code	1931888		..... Plant Entry Year		
Country Year ID#	21888		..... Plant Exit Year		
	Yes/No	Tons	Value		
Natural Dyes	.....	.....	.....
Fine Chemicals	.....	.....	.....
Inorganic Basic Chemicals	.....	.....	.....
Organic Basic Chemicals	.....	.....	.....
Intermediates	1.....	.....	.....
Aniline Dyes	1.....	.....	.....
Fuchsine	1.....	.....	.....
Azo Dyes	.....	.....	.....
Alizarine Dyes	1.....	.....	.....
Indigo	.....	.....	.....
Resorsine Dyes	.....	.....	.....
Naphtaline Dyes	.....	.....	.....
Phenol Dyes	1.....	.....	.....		Change Made
Sulphur Dyes	.....	.....	.....		.....12/28/2006
Murexide	.....	.....	.....
Pharmaceuticals	.....	.....	.....
Photochemicals	.....	.....	.....
Director					
Number of workers					
Double Count Plants					
done by	Thessa van Hoorn				
corrected by	Ernst Homburg				
Notes	EH: 1866-67 Fuchsin production was transferred from the plant in Barmen-Rittershoven, Heckinghauserstrasse (PID 100), to this plant. * In 1872 an other plant of "Fr. Bayer & Co" was built in Elberfeld, Alizarine plant (PID 176). The two plants are close to eachother, but separated form eachother by a plant of "Schönebergschen" [Bayer Archive, 7/B.I.].* This plant or the other plant in Elberfeld (PID 176) produced in 1880 48 000 Stammware [Bayer Archive, 7/B.I.]. EH: in 1876-77 this plant was united with PID 182, and somewhere in the 1880s also with PID 176. I				
References	Bayer Archive, 7/B.I.; Expo 1867,1876; Wenzel, 1888, p. 62			Firm Year Code Copy	1931888.....

Part III

The Principles of Coding and Entering data

3.1 General

What is in this database?

Only companies that produce Organic Intermediates or Aniline dyes or Fuchsine or Azo-, Alizarine-, Indigo-, Resorcine-, Naphtalene-, Phenol-, Suphur- and Murexide dyes are *included* in the database and only for those years in which they make these relevant products. This means that sulfuric acid plants of companies that make dyes and intermediates are in the database but not sulfuric acid plants owned by firms that don't make dyes and intermediates. The same holds for paint makers, fine chemical producers, and producers of pharmaceuticals, photo chemicals, etc.

Given that new data not available at the time the database was constructed might reveal that certain firms produced dyes or organic intermediates in the period covered by this database, we also included some firms that produced chemicals closely related to dyes and organic intermediates, and for whom we had some reason to believe that they might have made synthetic dyes or organic intermediates. Examples are dyestuff traders, producers of explosives (picric acid), producers of pharmaceuticals, etc. These entities are marked as *dubious* firms and plants. (Picric acid producers until 1880, when azo dyes replaced picric acid dyes, are not coded as dubious unless we had strong evidence that they are dedicated to producing explosives.) If there were strong reasons to believe that a firm did not make aniline dyes or organic intermediates, but only sold them along special purpose products such as pigments and nonpoisonous dyes, it was also marked as a dubious firm.

We have dubious firms into different categories. If we had been sure that a firm made no dyes or intermediates, the firm would have not appeared in the database. This means that dubious firms are firms for which we don't have enough information to say with certainty that dyes or intermediate were produced. Furthermore, we have assigned dubious firms into a particular category given all the information we had. For example, if dubious firm is called a merchant or trader this means that it was most likely a merchant or trader but we are not 100 percent certain that this was true. The data on dubious trading firms most likely came from trade directories when the existence of a factory or plant was not explicitly mentioned.

The sources used for this database were not always consistent. To prevent inconsistency and incoherency in the database we put together a *list of principles* that would force us to enter the data in such a way that every similar situation was treated in the same way. These principles were based on knowledge about the context of the synthetic dye industry as well as statistical consideration that require all coding decision to follow systematic rule to make comparisons across firms and countries reliable.

Despite all of our efforts to avoid unsystematic biases, there remain some shortcomings in the database due to the unequal coverage of different periods and countries.

Chateau's book only discusses the years from 1850 to 1867.

The French directories consulted are not all “Guides” available. The information in the databases only comes from the Guides of Paris for the following years: 1850, 1851, 1852, 1854, 1855, 1857, 1858, 1859, 1860, 1861, 1862, 1865, 1866, 1867, 1868, 1869 and the Guides for Lyon for 1862-3, 1865, 1866, 1867, 1868, 1869 and 1870.¹

As a result of those two factors the French data is with respect to the earlier period, the years 1850-1870, more comprehensively covered than the period after about 1870.

With respect to the German data the reverse is the case. The excellent directories of Wenzel, available after 1888 make that the German data is rather complete after 1888; While lacunae might exist in the German data before that date²

Wenzel, 1888 was only checked for the categories:

General artificial colours; Alizarine-colours; Alizarinblue, -violet, -green and -black; Azoblack; Eosine; Fuchsin; Indulin (Nigrosin); Malachitgreen; Picric Acid; Safranine.

Wenzel, 1898 was only checked for the categories:

Natural Colouring Matters, General; Synthetic Colouring Matters, General; Alizarin (Bordeaux Pat, -granat, -marron, -red); Azo Colours; Benzopurpurin DRP 35615 u. 38802; Eosin; Fuchsin; Fuchsin S; Magenta; Ponceau; Rose Bengale; Alizarinblau, -cyanine, -dunkelblau, -indigoblau; Anilin (und Salze); Nitrate of Aniline; Muriate of Aniline; Sulphate of Aniline; Aniline Oil; Anilin-Toluidin; Anthracen; Anthrachinon; Arseniates; Azobenzol; Benzidin (und Homologe); Sulphate of Benzidin; Benzin; Benzol; Dimethylanilin; Dinitrobenzol; Dinitrochlorbenzol; Dinitrotoluol; Diphenylamin; Methylanilin (Mono-).

Wenzel, 1906 was checked for the categories:

Synthetic Colouring Matters, General; Alizarin (alle Farben); Anilinscharlach; Azofarbstoffe; Benzopurpurin; Chrysoidin; Congo; Corallin; Eosin; Eosinscharlach; Fuchsin; Magenta; Ponceau; Rosanilin; Rose Bengale; Rubin; Safranin; Indulin; Nigrosin.

Wenzel, 1912 was checked for the categories:

Synthetic Colouring Matters, General; Alizarin (alle Farben); Anilinscharlach; Azofarbstoffe; Benzopurpurin; Chrysoidin; Congo; Corallin; Eosin; Eosinscharlach; Fuchsin; Magenta; Ponceau; Rosanilin; Rose Bengale; Rubin; Safranin; Indulin; Nigrosin; Primulin; Methylviolet; Phosphin; Bismarckbraun; Malachitgrün; Goldgelb; Naphtolgelb; Resorcinbraun; Phloxin;

The “previous activity” field was coded systematically for years before 1865; in later years this variable was not coded in any systematic way.

Chemicals that a firm makes for its own use only will not be mentioned in Wenzel or in other directories. This means that often these data is not mentioned in the database.

In case of uncertainty, we have followed a *conservative principle*.

For example, if there is no exact founding date available, we coded the information as follows. If the first data point is in year x, then we coded the firm as having before x+1 and the end data after x-1. For instance, when only data is known from 1860 we entered founding date b. 1861, end date a. 1859.

When a firm only appeared for one year in a *Guide or Directory* we decided that we would also make records for *the year before*. This because of the fact that guides and directories are often based on data about a previous year or period. If the data comes from *other sources* than a Guide or Directory, we followed a different principle. When these other sources just mentioned a firm for one year, we only recorded the firm as existing in that one year.

¹In a few cases the cards mentioned later years

²For **Wenzel 1892** and **Wenzel 1914** the entire index was available and checked for all relevant chemical products.

When the products are known for only one year, we never assumed that products were produced in a period *before* the mentioned date. With respect to the period after the date for which product information is known, we generally assumed that the same products were made until the end date of the company, when we had some evidence that dye production continued. When we did not have any information that dye production continued, we never assumed that products were continued. When there is information for more than one year, we generally applied the “half-way rule”, unless information on the invention of products makes it very unlikely that a certain product was produced at a given (half-way) date. So, when products are known for more than one year we coded the records in the following manner: If we had data for the years 1860 and 1864, for example, and the data showed identical information, identical records are made for 1860, 1861, 1862, 1863, and 1864. However, when we had data about two years that was different, we changed *halfway* because on average this is the best estimate. For example, if a firm makes products A and B in 1860 and A and C in 1864, we recorded A for 1860 until 1864, B for 1860 until 1862 and C from 1862 until 1864. Ernst Homburg and Johann Peter Murmann followed this additional rule: When specific product information was known for an earlier year and a general category of products for a later year, we coded the specific products as made in all intermediate years. See, for example, Firm ID 697.

Concerning the case when the beginning and end dates of firms are not exactly known, we followed the following principles.

Case A: When no predecessor or successor is known, we used the earliest (respectively latest) date known with certainty to make the first or last record.

Case B: When a predecessor or successor firm is known, we assumed that the two firms changed status in the middle of the period. In regard to making individual records for the particular firms, we made the first record for the successor firm in the year after the middle of the period. The last record for the predecessor was made in the preceding year. Example: It is known that the predecessor firm existed in 1860 and that the successor firm existed in 1864. In this case the successor firm records start in 1863 and the predecessor firm records stop in 1862. Similarly, if it is known that the predecessor firm existed in 1860 and that the successor firm existed in 1865, the successor firm records start in 1863 and the predecessor firm records stop in 1862. The coding of company capital also follows this principle.

As is now clear some data is obtained by interpolating data from previous or following years. This is, however, never done for data in the following fields: sales, profits, dividends, number of workers, total staff, and number of chemists. Data was never extrapolated from the last year for which any data was available even when it was not clear whether the firm or plant ceased to exist in that particular year. If the last data for a firm was available for the year 1913, we did not code this as an exit year.

In all numerical fields the data entered is an average when varying information was found. Figures equal to .5 or higher were rounded off upwards and figures smaller than .5 were rounded off downwards.

Addresses: To identify where a firm or plant is located, the database uses two address fields, “town” and “location.” The location field contains street addresses and when available a part or quarter of a town such as Lyon - Rochechardon or London - Hackney Wick.

Date fields: The date is given as precise as possible, including months and days: We used this order: dd-mm-yyyy. (The exception is the “changed made” field Johann Peter Murmann added later to the database to track changes and corrections and that use the American date style mm--dd--yyyy).

The note fields contain various sorts of information: First these fields are used to explain or clarify the assumptions, insecurities or decisions that were made when recording the data for that firm or plant. Second, the fields are used to display any additional information about a firm or a plant e.g. which chemists worked there or that a plant burnt down and was rebuild etcetera. The notes may also identify connections between different firms or plants in the database. Finally these fields are used to explain what is displayed in the investigate- or dubious-fields.

We employed several checks to assure that data was entered accurately and consistently: Of course there no products are recorded before the years that they existed; Certain synthetic dye categories do not exist before particular dates: Aniline dyes not before 1857; Alizarin not before 1869; and synthetic Indigo not before 1897.]

3.2 Firm Records

The first firm record is made for the year in which production of synthetic dyes and/or organic intermediates starts. This means that if a firm was founded in 1888, but production did not start before 1889, the first record for both the plant and the firm is made for 1889.

To trace firms as they changed legal status but no necessarily their internal operations, we introduced an “Economic Unit ID” (EU ID). The EU ID is identical to the ID of the final legal incarnation of a particular firm. See Appendix below.

Corporate legal names differ across countries. To show what legal designations are similar or equivalent across the different countries we classified legal designations into five groups.

Group 1: *(All owners are fully liable for actions of the company)*

Partnership (GB)

Société en nom collectif (F)

V.o.f. (Vennootschap onder firma) (NL)

OHG (offene Handelsgesellschaft) (Ger)

Kollektivgesellschaft (CH)

Group 2: *(Only owners active in the firms are fully liability, not all owners)*

Limited partnership (GB)

Société en commandite (F)

Commanditaire Vennootschap (NL)

Kommanditgesellschaft (Ger & CH)

Group 3: *(Only owners active in the firms are fully liability, not all owners. The difference with group 2 is that the partnership can be transferred without going to the notary).*

Société en commandite par actions (F)
Commanditaire vennootschap met aandelen (NL)
Kommanditgesellschaft auf Aktien (Ger)
Kommanditaktiengesellschaft (CH)

Group 4: (*Owners are only liable in the amount of the company capital.*)
Ltd. (Company limited by shares/ limited comp.) (GB)
SARL (Société à responsabilité limitée) Only between 1863 and 1867, (France)
GmbH (not before 1892) (Germany)

Group 5” (*Owners are only liable in the amount of the company capital; can be publicly listed*)
SA (Société Anonyme, France)
NV (Naamloze Vennootschap, NL)
AG (Aktiengesellschaft, Germany)
Inc. (Incorporated, USA) [The USA does have not a distinction between joint companies and limited liability
Joint Stock Comp. (when not Inc. Or Ltd)

In some cases when there was an explicit mentioning of the legal status of a firm we entered this information into the field “Legal Status.” When there was no explicit information, we were always conservative and coded the field as “not known” instead of assuming a particular legal status.

Exceptions were made for firms where the legal status could be plausibly inferred by looking at the firm’s name.

- When the name is like “XXX & YYY” and both XXX and YYY are names of persons it was coded either:
Partnership (GB), *soc. en nom collectif* (France.), (V.o.f.) *firma* (NL), *OHG* (Germany) or *Kollektivgesellschaft* (since 1881) (Swiss).
- When the name of the firm is only the name of an individual, we coded the firm as a "Single Individual".
- When the firm name contains no names of persons (or just “previously”..... etcetera), but only the purpose of the firm (e.g. Chemische Fabriek Maastricht). It was coded as belong to Group 5 and depending on its country of incorporation was coded as one of the following: SA (Soci-été Anonyme, France), NV (Naamloze Vennootschap, NL), AG (Aktiengesellschaft, Germany), Inc. (Incorporated, USA) or Joint Stock comp. (when not Inc. Or Ltd)
- When a firm is known to be a limited partnership (commanditaire vennootschap) but one does not know to which group it belongs, 2 or 3, we coded of this as a group 2 firm because the popularity of group 2 firms exceeds by far the number of firms in group 3.
- When a firm is known to be a Limited Liability Company (NV), but when it is not known to which group it belongs, 4 or 5, we coded it as belonging to group 5 again because the popularity of the legal forms of group 5 is much higher than the popularity of the forms group 4.

Groups 3 and 4 legal designations were are only used when there was explicit identification of them in a source.

Note that these exception rules were **not** followed in one case: When name is like “XXX et Cie” (or co./comp.) we coded the legal status *Not Known* for this reason: et Companie means that there was a principal in the company and some other shareholders but from the this designation one cannot infer for certain whether the shareholders had either full or limited liability.

When only one address is known for a firm, this address is assumed to be both the address of the firm and of the plant address, unless this address is in the centre of a town. In this case the firm is identified with a specific street address but the plant is only identified as being in that town but without a specific street address since in all likelihood that plant is not in the center of the town.

The ownership field identifies information on who owns the firm. Both individuals and firms are listed in this field. The information was not entered fully systematically as is made clear in the next two remarks.

1. The director field identified individual who directed the firm. In some cases directors are also owners of the firm, even when they were not mentioned in the owner field.
2. When a firm is listed on a stock exchange, and this was know, then this mentioned in the Note field and not in the ownership field stating as “many stockowners”.

If the name of predecessor is given, it means that it is a producer of dye intermediates and/or dyes. If there is no name given in the field called “predecessor”, the background of the firm founders is indicated in separate fields (Trading, Printing, Dyeing, etc.) A name between brackets means that the plant was bought from or sold to that company without that company being a predecessor or successor in a formal sense. Predecessors and successors refer typically to firms included in the database. In some cases firms that were not dye firms themselves were included in the “predecessor/successor” field in order to be able to trace interesting connections to earlier firms. In these cases the note "not in database" is made behind the firm name.

“**Total Workforce**” is defined in the database as “**Total Staff**” plus “**Number of Workers.**” If it is uncertain whether a figure relates to total workforce or total number of workers, we take the conservative approach and code it as the total workforce. The following coding rule apply to “Number of Workers”, Total Staff”, “Total Workforce” and “Number of Chemists” fields. Figures from different sources are frequently conflicting because some include staff in the total numbers of workers while other do not, or because some source include and other sources exclude workers in foreign subsidiaries of the firm, or because different sources don’t refer to precisely the same day or month of the year that the figures refer to. When different figures were in the sources, we average the figures in the numerical fields and identify the lowest and the highest number recorded for a given year in the note field. For instance, when source A says 65 and source B says 75 we have indicated 70 in the numerical field and gave the exact numbers of 65 and 75 in the note field. The same procedure was followed with other numerical figures such but not for **sales** because for sales we have additional fields to include the minimum and maximum figures in the sources for a particular year.

Terms like “**Arbeiterzahl**” were always coded as **Number of Workers**.

Dividends numbers refer to percentages, that mean 20 refers to 20 percent.

Only when we are certain that a firm did not directly sell to end-users did we code the field “**no direct sales to end users**” as a 1.

The “**Previous Activities**” field is only relevant for new firms to the industry. In two cases nothing was entered into the field: a) The predecessor was a synthetic dye firm. b) The activity of the predecessor was not known.

If a firm changes its name *two records* for the firm were created in a given year. In such a case, we tracked the over-representation of a firm in the database in the field called “**double count**” and we marked the double count variable in both records, making necessary to divide the double count sum by 2 in the final calculation of the total number of firms or plants in a given country in a given year.

This was done as follows:

1. In the case that a firm is succeeded by a new firm in a given year, ‘double count = 1’ is noted down both for the old and the new firm.
2. In case two firms merge into one firm in a given year: old firm1, double count = 0.5; old firm2, double count = 0.5; new firm, double count = 1.
3. In case one firm splits into two firms in a given year: old firm, double count = 1; new firm1, double count = 0.5; new firm2, double count = 0.5.
4. In case a new firm is renamed again in the same year, the double count becomes 2. This happened only once, in the case of T., C. & E. Holliday.

3.3 Plant Records

The category “Fine Chemicals” does not include dye intermediates and dyes. Fine chemicals refer to inorganic and some organic chemicals, produced in small and medium sized quantities, especially for dyers and printers. Mordents and inorganic pigments (ultramarine, Prussian blue) are classified as fine chemicals in this

Intermediates refer to organic intermediates for the production of dyes, pharmaceuticals and photo chemicals.

If a plant is a fuchsine plant, then it is also counted as an aniline dye plant because fuchsine is a specific instance of an aniline dye. This double registration is also carried out with some Sulphur dyes, (see list), which are also marked as Azo dyes.

Between 1865 and 1875 the term aniline dyes normally would include azo dyes, after 1875 it could include azo dyes. Some sources would reserve the term aniline dyes for the aniline dyes proper, while other sources would mean with aniline dyes the sum of aniline dyes and azo dyes.

Murexide is a semi-synthetic standing between the synthetic dyes and the natural dyes.

Separate plants were created when the sources identify production at different locations or when plants have distinct names.

Because a plant is sometimes entered twice for a given year when the firm owning the plant changed midyear, it would be possible that when such a plant is connected to a foreign mother firm, it would appear twice in the plant portfolio of the mother firm. To avoid this possibility, we only linked one of the two identical plant records for a given year to the mother firm via an International ID link.

When a firm has multiple plants but no information is available on what products are made in what plant, we assume that all products are in made all plants.

In general, we followed in coding of plant records the rules for products described at the level of the firm. When a plant exists in one year (e.g. 1860) and not in a second year (e.g. 1864) but we know that the firm owning the plant existed at the later date, we applied the half-way rule and made plant records for the years 1860, 1861 and 1862.

Abbreviations used in database

4.1 General abbreviations

a	after
A	Aniline Dyes
Acc. To	According to
Al	Alizarine Dyes
Ali	Alizarine Dyes
Annuaire	Yearbook for French Information
AP	American Patent
Az	Azo Dyes
b	Before
BA	Bayer Archive
C.Ad.	Certificat d'Addition (Patent extension)
CN	Chemical News
CZ	Chemiker Zeitung
D'xx	German chemical society, Year of Directory
EH	Ernst Homburg
EK	Esther van 't Klooster
F	Fuchsine
FC	Fine Chemicals
FP	French Patents
F'xx	French chemical society, Year of Directory
Guide	Yearbook for French Information (Guide Lyon or Guide Paris)
I	Intermediates
IBC	Inorganic Basic Chemical
Idem	same as above
Ind	Indigo
Int	Intermediates
JSDC	Journal of the Society of Dyers and Colourists
M	Murexid
MG	Marjan van de Goor
Na	Naphtalene Dyes
ND	Natural Dyes
OBC	Organic Basic Chemical
P	Phenol Dyes
Pa	Pharmaceuticals
Po	Photochemicals
Re	Resorcine Dyes
S	Suphur Dyes
TH	Thessa van Hoorn
Thl	Thaler

4.2 Abbreviations used in database to describe references

A

Annuaire UIC 1928-9
AP
Arch. Lyon;
Archive De Heyder, 1872.

Union des Industries... (1928)
American Patent
Departemental Archives, Lyon
Archives of the De Heyder company, Leyden

B

BASF 11
Becker, 1908 H.
Beckers 1864
Beckers, 1865
Beckers, 1867
Beer, 1959
Belt v/d, 1992
Ber
Biography Calvert
Blaue Wunder
Bleekrode 1
Bouvier
BP
Bredt, 1900
Brightman 1957
Bürgin

Schuster, C. (1973)
Beckers, A (1864)
Beckers, A (1865)
Beckers, A (1867)
Beer, J.J. (1959)
Belt van den, H. (1992)
Berichte der deutschen Chemische Gesellschaft
Andersen, A. (1990)
Bouvier, J. (1961)
British Patent
Bredt, J. (1900)
Brightman, R. (1957)
Bürgin, A (1958)

C

C.I., 1924
Cayez
Cayez, II
CD
Chateau, vol. I
Chateau, Vol. 2
Chem. Ind. 1888
Chem. Direct.
CIBA, 1884-1934
CIBA 1959
CN
Cochin, 1884
CZ
__s11

Colour Index
Cayez, P (...) or Cayez, P. (1979)
Cayez, P. (1979)
Chemical Direcorey
Chateau, T. (1868a)
Chateau, T. (1868b)
Die Chemische Industrie
Chemical Direcorey
Ciba (1935)
Chemical News
Cochin, D. (1884)
Chemiker Zeitung

D

D
Database Morris, no. 331.

Membershiplist Deutsche Chemische Gesellschaft
Database Dr. P. Morris, based on London directories

Depierre, 1893
Der Mensch in der BASF
Deutschland Chemische Industrie, 1952
Dietz R.
Dingler 201 (1871)
Dr. Dyes
Dr. Lucius
Dr. Reitz
DRP
Drugler
Druout 1991

Dyes, W.A. (1921)

Reitz, Dr. (...)
Deutsche Reichs Patent

E

Everwijn, 1912
Exhibition 1862;
Exhibition Report 1867
Exhibition Report 1862
Expo 1862, 1867, 1873
Expo 1878

F

Farrar
Farrer, Kurrer
Fierz-David
Fischer 1897
Fox
FP
Frankland 1871

Farrar, W.V. (1973)
Farrar, W.V. (1973)
Fierz-David, H.E (1926)
Fischer, F. (1897)
Fox, M.R (1987)
French Patent
Frankland, E. (1871)

G

G/L.13.4 (F.Bayer Arch);
Gardner
Geigy, 1919
Geschichte des Werkes Offenbach
Geschichte des Werkes Uerdingen
der Farbenfabriken Bayer AG;
Geschichte Barmer Betriebe
Goldschmiedt
Guide Indicateur Lyon
Guides Paris
Guides Lyon

Gardner, W.M. (Eds.). (1915)
Geigy-Hagenbach, K (1919)

... (1956)

Goldschmiedt, G. (1877)

H

Haber, 19 th century
Haber
Haller A. , 1895
Harzheim 1952
Hauptbuch Bayer 1874-81.
Haynes I

Haber, L.F (1958)
Haber, L.F (1958)

Harzheim, R. (1953)
Hauptbuch Fr. Bayer & Co, Bayer Archiv
Haynes, W. (1954a)

Haynes VI	Haynes, W. (Eds.). (1949)
Haynes I and III	Haynes, W. (1954a) and Haynes, W. (1945a)
HB	Hauptbuch Fr. Bayer & Co, Bayer Archiv
Henneking	Henneking, R. (1994)
Hirt	
History of British Dysestuff Corporation, 1939 (1939)	
Hoechst Arch, 45	
Homburg & Schot, Kroniek 1988	
Homburg, 1986	
Hoth	Hoth, W. (1975)
Hundert Jahre Bayer	
100 Jahr Bayer	
Hurst, 1892	Hurst, G.H. (Eds.) (1982a) or Hurst, G.H. (1982b)

I

Industrial and Engineering
chemistry, april 1924

J

Jacobsen 1864 II	
Jaquet, Tab. 1	
JbGBT, 1984	Jaarboek Geschiedenis Bedrijf en Techniek
JgBMT, 1984	Jaarboek Geschiedenis Bedrijf en Techniek
Jordan A.	
Journal Soc. of Arts, July 1864	Journal of the Society of Arts
JSCI	Journal of the Society of Chemical Industry

K

Kielmeyer 1893	Kielmeyer, A (1893)
Kopierbuch BA	Kopierbuch, in Bayer Archives, Leverkusen
Kopp 1874	Kopp, E. (1874)
Kurrer	Kurrer, W.H. v. (1858) or Kurrer, W.H. v. (1874)

L

L'industrie de gaz, 1824-1924	
Laferrière	Laferrière, M. (1960)
Lefèvre 1896	Lefevre, L. (1896)
Letter from Caro to Griess, 26-4-1878	
Letter to/from Bayer	
Lightfoot 1971	Lightfoot, J.E. (1871)
Lucius Dr.	

M

M.R.Fox 1987	Fox, M.R. (1987)
Mackensie 1862	
Max Wirth, 1874	
member Verein zur Wahrung 1880-1893	

Miall
Mierzecki, 1996
MT5
Muster Ztz
Muster
Muster Zeitung
Musterdtz

Miall, S. (1931)

... (1847-1848), ... (1860-1873) ... (1874-1880)
... (1847-1848), ... (1860-1873) ... (1874-1880)
... (1847-1848), ... (1860-1873) ... (1874-1880)
... (1847-1848), ... (1860-1873) ... (1874-1880)

N

Neuhaus, 1883
notes De Vries
notes E. Homburg

O

P

Pfitzner
Piloty (Siegle)
Pohl ea.
Pohl
Produktivkraft in Deutschland, 1985
Prussian report Expo 1867

Pfitzner, J. (1916)
Piloty, R. (1910)
Pohl, H. (1983)
Pohl, H. (1983)
... (1985)

Q

R

R. Schaumann
Redlich
Reitz Dr.
RGMC

Schaumann, R. (1977)
Redlich, F. (1914)
Reitz, Dr. (...)
Revue Generale des Matieres Colorantes

S

Sack
Sandler & Berggold 1866
Sansone A.
Schaumann R.
Schultz, 1905
Schultz & Julius, 1902
Schuster
Schützenberger, 1867
Schweizerische Zeitschrift für Geschichte
Spoon

Sack, E.A. (1958a) or (1958b)
Sandler, Chr. & Berggold, F. (1866)
Sansone, A. (1910)
Schaumann, R. (1977)

Schultz, G. (1902)
Schuster, C. (1973)

T

Th. Weyl 1889
These Leprieur
Thissen
Travis, ms 1991

Weyl, T. (1892)
Leprieur
Thissen, F. (1922)
Travis, A.S. manuscript of Rainbow Makers

Travis 1991
Trillat

Travis, A.S. manuscript of Rainbow Makers
Trillat, J.A. (1888) or (1900)

U

V

v/d Belt, 1992
Verein zW

Belt van den, H. (1992)
Membershiplist Verein zur Wahrung der
Chemischen Industrie Deutschlands

Voelcker
Vogel, 1870

Voelcker, H. (1938)
Vogel, Dr. Max (1870)

W

Wagner JB 1871
Wenzel 3
Weyl 1889
Wirt, Max

Jahresberichte der chemischen Technologie
Wenzel, O (1892)
Weyl, T. (1892)

X

Y

Z

Part V

Classification of Products

During our work we came across products that were not yet classified, to prevent irregularities we created this list while entering product data.

We used the names employed in the different sources (i.e. in French, German, English, etc.) to facilitate the coding of the information. As a result, the list below contains different languages and may repeat the same product several times. In the case of photochemicals and pharmaceuticals, the sources typically did not list individual chemical. As a result, few individual products are listed under these two categories.

Natural dyes

Archil
Carmin d'indigo
Carmin d'orseille
Carmine de Safranin
Carmine de Saffron
Cochenille ammoniacale
Cochenille carmin
Cud Bear
Extrait liq d'orseille
Extrait de bois de teinture
Indigo tine
Indigo (there is also not natural indigo)
Orseille
Quercitron
Safflor Carmine/ Carmine de Saffron
Safran

Fine chemicals

Acétates (pyrolignites)
Acide acetique
Acide Lactique
Acide gallique
Acide tartrique
Acide Benzoïque
Acide arsenic
Aether
Alaun
Albumine
Alcali volatil
Alum
Anorganische Sulfidfarbstoffe
Arsenic
Azijnzuur
Bariumchlorid
Bariumsuperoxid
Barytfarben
Berlinerblau
Bleiweiss

Bleizucker
Bleinitrat
Borax
Brechweinstein
Brompreparaten
Cadmiumpreparaten
Chemische Producte für Färberei & Zeug-druck
Chlor
Chlorures
Chroomgeel
Chroomkali
Essence de fruits
Eisenviriool, kristallisiertes
Essigdaure
Gallus
Gélatines
Gingnetgrün
Grun
Halogenkohlenoxideverbindungen
Houile vernis
Hyposulfite de soude impression
Joodpreparaten
Kaliumchloraat
Lactic acid
Lithopone
Loodacetaat
Loodwit = Bleiweiss
Mangan verbindungen
Melkzuur
Metalsulfate
Mineralfarben
Natriumnitrit
Nitrates
Oxalsaur
Oxalsalz

Produits pour teinture
Pruissischblauw
Superphosphat

Pyrogallinzuur
Salpêtres

Superoxide der schwermetalle
Tann
Ultramarijn
Vert de chrome
Vinaigre
Vitriool
Zinkgeld
Zinnchlorur
Zinnchlorid

Inorganic Basic Chemicals

Acide nitrique
Acide muriatique
Alkalilauge
Atznatron
Bleekmiddel (NaOCl)
Clorkalk
Explosives
Kali
Soude caustique
Soudes
Natron
Natronloog
Nitric acid
Oleum
Phosphate de chaux
Phosphorsaur
Pottasche
Potasse
Salpeterzuur
Salzsaure
Schwefelsaureanhydrid
Sel ammoniacque
Soda
Sulfate d'ammoniacque
Sulfite de soude
Sulphuric acid
TNT

Zoutzuur
Zwavelzuur (H₂SO₄)

Organic Basic

Chemicals

Acide phenique
Anthraceen
Asphalte
Benzeen, Benzine
Benzole
Brai
Carbolsäure
(graphite)
(cokes)
Carbonisatron de houille
Coal tar
Goudron de houille
Huiles minerales
l'ecloirage
Huiles de goudron
Huiles de houille
Kreosoot
Naftaleen, Naftaline
Noir de fumée
Phenol
Phenylsäure
Produkte aus Steinkohlen-
theer
Schwerbenzin
Sodique
Tardestillation
Toluëen
Toluol

Intermediates

Amidoverbindungen
Amidoazobenzol
Aniline (as oposed to
anilinedyes of
anilineverven)
Anilinöl für rot, blau, violet
Anilinsalze = anilinezouten
Antrachinon
Azobenzol
Benzidine
Benzolchlorid & Chloor-
benzyl
Binitrobenzol
Chinon sublimation
Chloorbenzeen
Chloride d'aniline
Chlorobenzine
Chlorure
Commercial toluidin (fluid)
Dimethylanilin

Diphenylamin
Ditolmylamin
Essence de Mirbane
Ethylanilin
Hydrobenzine
Kresylsäure
Merkaptan
Methylanilin(e)
Methylène
Naftol
Naphtylaminsulfsauren
Nitranyl
Nitroanthrachinon derivate
Nitramine
Nitroaldehyde
Nitrobenzine, Nitrobenzeen
Nitrobenzole
Nitronaftaleen
Nitrotoluol
Nitroxylol
Oxiverbindungen des
Benzols und
Naphtalins
Oxyanthrachinon derivate
Phtalsäure
Pseudotoluidin
Roh & Zwischenproducte
für Anilin und Alizarin
Salicylzuur
Sulfonzuren
Toluidine = Toluidin
Toluylenram
Xenylamin
Xylidin

Aniline dyes

Aniléine
Aniline geel/ blauw/ groen/ -
grau/zwart
Blauwe kleurstof uit
methyldiphenylamin
Blue du ciel
Blue de diphenylamine
Blue soluble
Blue de Lyon
Chrysanilin
Chrysotoluidin
Dahlia imperial,
Dahlia regina
Dahliablau
Dibenzylanilin
Diphenylamin blau
Farbstoffe aus dem
Steinkohle
Fuchsine

Geranosine
Granathroth
Gris d'aniline
Harmaline
Hofmann's Violet
Indisine
Induline
Jaune Couleurs d'aniline
Jaune de naphtylamine
Jodfarben
Joodgroen
Joodviolet
Lichtblau wateroplossing
Malachitgrün
Marron d'aniline
Mauveine Mauve
Mauvanilin
Methyl(licht)grün
Methylanilinviolet (ben-
zylirte)
Methylviolett
Mono- & Dimethylanilin
Mureine
Neugrün
Nigrosin
Noir d'aniline
Parijs violet
Perkins violet
Phosphin
Primula
Produits d'aniline pour tein-
ture
Pyrosine
Rosatuludin = Rouge
toluidine
Safranine
Sammtliche Anilinfarben
Sauregrün
Toluolblau lumière
Toluolgroen
Vert de code
Vert d'aldehyde
Victoria oranje Alkaliblau
Victoria geel
Violanilin

Violet Poirrier et Chappat
Violet de Paris
Violet solide
Violet d'aniline
Violet impérial
Wienerbraun

Fuchsine
Aniline rood, red, rouge
d'aniline
Azaleïne

Fuchsine
Magenta
Rubin

Azo

Benzopurpurin
Benzoacurin
Bismarckbraun
Chrysamin
Chrysoïdine (also Sulphur)
Columbiaschwarz (also Sulphur)
Congofarben
Croceinscharlach
Diazofarbstoffe
Direct blacks (also Sulphur)
Kaiserrot
Indulin
Nerol also Sulphur)
Orange
Ponceau
Scharlach
Schwefelschwarz (also Sulphur)
Wollschwarz (also Sulphur)

Alizarine

Alizarine
Alizarinfabrikate
Garancine
Isopurpurin
Künstliche Alizarin
Purpurine

Indigo

Indigo

Resorcine dyes

Chrysoline
Cyanosine
Eosine
Erythrine
Erythrosine
Fluoresceïn, Fluoresceine
Rose Bengale
Phloxine
Primrose
Uranine

Naphtalene dyes

African Red
Coruleïn, Coruleine
Magdala Red
Manchester Yellow
Martius Yellow
Naphtalene Red
Naphtalene Yellow

Naphtol Yellow

Phenol dyes

Acide picrique
Aurin(e) (Rosolzuur)
Azullin(e)
Binitrophenol
Coralline (jaune et rouge)
Goldgelb = Dinitrokresol
Grenat Soluble
Péonine
Phenylbraun
Pikrinaminsäure
Pikrinezuur
Pikrinsäure
Salicylzuurkleurstoffen
Viridine

Sulphur dyes

Cachou de Laval
Columbiaschwarz (also Azo)
Direct blacks (also Azo)
Nerol (also Azo)
Schwefelschwarz (also Azo)
Wollschwarz (also Azo)

Murexide

(half-synthetisch/semi-synthetic)

Acide urique
Alloxan
Alloxantine
Extrait de guano
Harnsäure
Murexide
Pourpre française
Quinoline blauw
Uric Acid
Urinezuur

Pharmaceuticals

Salicylic Acid

Photochemicals

Part V
Bibliography

- (1847-1848). Muster-Zeitung für den Färbersstand
- (1860-1873). Muster-Zeitung. Zeitschrift für Färberei, Druckerei, Bleicherei, Appretur von gespinnten & gewebe & papieren
- (1862a). Chemistry at the International Exhibition Chemical News **5** (May 3, 1862)
- (1862b). The International Exhibition. Jury Awards in Class II, Section A. Chemical Substances and Products, and Reasons for the Award Chemical News **6** (August 2, 1862), 62-67
- (1868a). Berichte über die Allgemeine Ausstellung zu Paris im Jahre 1867 Berlin: Königlichen Staatsdruckerei
- (1868b). Études sur les Expositions de Teintures Françaises et Étrangères. Classées à l'Exposition Universelle de Paris Paris
- (1868c). Internationale Ausstellung von 1867. Berichte über die Beteiligung der Schweiz an der Internationalen Ausstellung von 1867 Bern: Stämpfische Buchdruckerei
- (1874-1880). Muster-Zeitung für Färberei, Druckerei, Bleicherei, Appretur von gespinnten & gewebe & papieren
- (1901). Die Chemische Industrie des Deutschen Reichs im Besitze von Aktien-Gesellschaften Leipzig: Verlag für Börsen- und Finanzliteratur A.-G.
- (1913). Glorification de l'Oeuvre de Paul Schützenberger Paris
- (1939 (never published)). History of British Dyestuffs Corporation
- (1952). Deutschlands Chemische Industrie 4 Heft 10
- (1956). Geschichte des Werkes Uerdingen der Farbenfabriken Bayer AG Uerdingen
- (1985). Produktivkräfte in Deutschland, 1870 bis 1917/18 Berlin
- Andersen, A. (1996). Historische Technikfolgenabschätzung am Beispiel des Metallhüttenwesens in der Chemieindustrie 1850-1933 (Beiheft 90). Stuttgart: Franz Steiner Verlag
- Andersen, A., & Spelsberg, G. (1990). Das Blaue Wunder. Zur Geschichte des synthetischen Farben Köln

Ausstellungs-Commission, B. (1867). Die Betheiligung des Großherzogthums Baden an der Universalausstellung zu Paris im Jahre 1867 Karlsruhe: Chr. Fr. Müller Hofbuchdruckerei

Balard, M. (1857). Des Essences naturelles et artificielles. Employées en parfumerie Moniteur Scientifique du Chimiste et du Manufacturier , 1, 350-352

Beckers, A. (1864). Anilin-Färberei. Das Gesammte der Färberei und Druckerei mit Anilin-Farbstoffen auf Wolle, Baumwolle und Seide (1 ed.). Berlin: Theobald Grieben

Beckers, A. (1865). Anilin-Färberei. Das Gesammte der Färberei und Druckerei mit Anilin-Farbstoffen auf Wolle, Baumwolle und Seide (2 ed.). Berlin: Theobald Grieben.

Beckers, A. (1867). Anilin-Färberei. Das Gesammte der Färberei und Druckerei mit Anilin-Farbstoffen auf Wolle, Baumwolle und Seide (3 ed.). Berlin: Theobald Grieben

Beer, J. J. (1959). The Emergence of the German Dye Industry 44 Urbana: University of Illinois Press

Belt van den, H. (1992). Why monopoly failed: the rise and fall of Société La Fuchsine British Journal for the History of Science 25 45-63

Bouvier, J. (1961). Le Credit Lyonnais de 1863 à 1882. Les années de formation d'une banque de dépôts Paris: SEVPEN

Bredt, J. (1900). Die Doctor-Promotion an Technischen Hochschulen und die Bedeutung der wissenschaftlichen Arbeit für die organische-chemische Technik Zeitschrift für angewandte Chemie , 361-167

Brightman, R. (1957). Manchester and the Origins of the Dyestuffs Industry Chemistry in Industry 76 (January 26 1957) 86-91

Bürgin, A. (1958). Geschichte des Ciba-Unternehmens von 1758 bis 1939 Basel

Cayez, P. Crises et Croissance de l'industrie Lyonnaise 1850-1900

Cayez, P. (1979). L'industrialisation Lyonnaise au XIX^e siècle. Thèse présentée 29-01-1977 I & II Lille: Service de Reproduction des thèses Université de Lille

Chateau, T. (1868a). Nouveau manuel complet theorique et pratique de la fabrication des couleurs d'aniline, d'acide phénique, de naphtaline et des homologues de ces substances I Paris: Libraire Encyclopédique de Roret

Chateau, T. (1868b). Nouveau manuel complet theorique et pratique de la fabrication des couleurs d'aniline, d'acide phénique, de naphtaline et des homologues de ces substances II Paris: Libraire Encyclopédique de Roret

- Ciba. (1935). Ciba. Société pour l'industrie chimique à Bâle, 1884-1934 Basel
- Cliffe, W. H. (1957a). The Dyemaking Works of Perkin & Sons, Some Hitherto Unrecorded Details Journal of the Society of Dyers and Colorists **73** 312-318
- Cliffe, W. H. (1957b). Pacta Conventa-The Last Days of Perkin & Sons Journal of the Society of Dyers and Colorists **73** 318-322
- Cochin, D. (1884). La Houille et les Matières Colorantes Revue des Deux Mondes (février) 654-82
- Cordsen, R. (1977). 100 Jahre Werk Uerdingen der Bayer AG, 1877-1977 Uerdingen
- Decaux. (1862). Couleurs, Teintures et Vernis, Jury Report on the International Exhibition of 1862 Class II, Section IV
- Dépierre, J. Chimie Industrielle II & Impressions et teintures des tissus XXXIX Paris
- Dépierre, J. (1880). Rapport sur les Industries de l'Impression et de la Teinture à l'Exposition Universelle de 1878 Rouen
- Dépierre, J. (1892). L'Alizarine Artificielle et son dérivés (Vol. II). Paris
- Dyes, D. W. A. (1921). Internationales Handbuch der Weltwirtschaftschemie 1913/1914-1919/1920 I Berlin: Wiegandt & Grieben
- Farrar, W. V. (1973). Andrew Ure, F.R.S. and the Philosophy of Manufactures Notes and Records of the Royal Society of London **27** (February 1973) 299-324
- Fierz-David, H. E. (1926) Künstliche Organische Farbstoffe (Band III) Berlin: Springer
- Fischer, F. (1897). Das Studium der technischen Chemie an der Universitäten und technische Hochschulen Deutschlands und das Chemiker-Examen Braunschweig: F. Vieweg & Sohn
- Forstmann, W. (1981). Die Chemische Fabrik Griesheim in der "Grossen Depression" Zeitschrift für Unternehmensgeschichte **26** 42-61
- Fox, M. R. (1987). Dye-Makers of Great Britain 1856-1976. A History of Chemists, Companies, Products and Changes Manchester: Imperial Chemical Industries PLC
- Frankland, E. (1871). Reports Royal Commission on Scientific Instruction and the Advancement of Science
- Fürstedler, L. (1868). Beobachtungen über die Fortschritte auf dem Gebiete der Industrie und des gewerblichen Unterrichts Wien: Beck'sche Universitäts-Buchhandlung
- Gardner, W. M. (Eds.). (1915). The British Coal Tar Industry. Its Origin, Development and Decline London: Williams and Norgate

Geigy-Hagenbach, K. (1919). Kurzer Ueberblick über die Entwicklung der Firma Joh. Rud. Geigy Basel

Goldschmiedt, G. (1877). Die Chemischen Industrie Wien

Haber, L. F. (1958; reprinted with corrections 1969). The Chemical Industry during the Nineteenth Century: A Study of the Economical Aspect of Applied Chemistry in Europe and North America Oxford: Clarendon

Harzheim, R. (1953). Die Entwicklungsgeschichte der Teerfarbenindustrie in Deutschland Köln

Haynes, W. (1945a). The World War I Period: 1912-1922 II Toronto, New York, London: D. van Nostrand Company

Haynes, W. (1945b). The World War I Period: 1912-1922 III Toronto, New York, London: D. van Nostrand

Haynes, W. (1948). The Merger Era IV Toronto, New York, London: D. van Nostrand

Haynes, W. (Eds.). (1949). The Chemical Companies VI Toronto, New York, London: D. van Nostrand

Haynes, W. (1954a). Backgrounds and Beginnings I Toronto, New York, London: D. van Nostrand Company

Haynes, W. (1954b). Decade of New Products V Toronto, New York, London: D. van Nostrand

Heine, J. U. (1990). Verstand & Schicksal. Die Männer der I.G. Farbenindustrie AG in 161 Kurzbiographien Weinheim: VCH Verlagsgesellschaft mbH

Henneking, R. (1994). Chemische Industrie und Umwelt. Konflikte um Umweltbelastungen durch die chemische Industrie am Beispiel der Schwerchemischen, Farben- und Düngemittelindustrie der Rheinprovinz (ca. 1800-1914) (Beiheft 86). Stuttgart: Franz Steiner Verlag

Hintz, E. (1904). 15-21

Hofmann, A. W. (1863a). Notices of books. A review of International Exhibition: Jurors' Report. Class II, Section A. Chemical Products and Processes Chemical News 7 227-228

Hofmann, D. A. W. (1863b). Jury Report on the International Exhibition of 1862. Class 2, Section A. Chemical Manufacturers Chemical News (May 30, 1863), 258-261

- Homburg, E. (1983). The Influence of Demand on the Emergence of the Dye Industry. The Roles of Chemists and Colourists Journal of the Society of Dyers and Colourists **99** 325-333
- Homburg, E. (1992). The emergence of research laboratories in the dyestuffs industry, 1870-1900 British Journal for the History of Science **25** 91-111
- Hoth, W. (1975). Die Industrialisierung einer Rheinischen Gewerbestadt-Dargestellt am Beispiel Wuppertal Köln
- Huber, G. L., & Menzi, K. (1959). Herkunft und Gestalt der Industriellen Chemie in Basel. Heraus gegeben von der Ciba aus Anlaß ihres 75 jährigen Bestehens als Aktiengesellschaft: Urs Graf- Verlag Olten und Lausanne 1959
- Hurst, G. H. (Eds.). (1892). A Dictionary of Coal Tar Colours London: Heywood & Co. Ltd
- Jonák, D. E. A. (1857/58). Bericht Über die Allgemeine Agricultur- und Industrie-Ausstellung zu Paris im Jahre 1855 I Wien: Der Kaiserlich-Königlichen Hof- und Staatsdruckerei 3, 32-35, 64-65, 70-75, 110-115, 158-162
- Kelly's Directory of the Chemical Industries including Chemists and Drug Stores, Chemical Manufacturer, Manufacturing Chemists, Wholesale Druggists, and all other Trades Concerned Therewith, in England, Scotland and Wales, and the principal towns in Ireland, the Channel Islands and the Isle of Man. (1853-1917). Kelly's Directories, LTD, London.
- Kielmeyer, A. (1893). Die Entwicklung des Anilinschwarz in der Druckerei und Färberei Leipzig
- Knab, C. Étude sur les goudrons et leurs nombreux dérivés exposés en 1867
- Kopp, E. (1874). Wiener Weltausstellung 1873: Bericht über Gruppe III, Chemische Industrie **8** Schaffhausen
- Kurrer, W. H. v. (1858). Das Neueste oder die neuesten Entdeckungen und Erfindungen in dem Gebiete der Druck- und Färbekunst von dem Standpunkt der Wissenschaft und der praktischen Erfahrung Berlin
- Kurrer, W. H. v., & Engels, R. (1874). Färberei und Druckerei. Neueste Entdeckungen und Erfindungen (4 ed) Leipzig
- Laferrère, M. (1960). Lyon ville Industrielle (Essai d'une géographie urbaine des techniques et des entreprises) Paris: Presses Universitaires de France
- Leaback, D. H. (1988). Perkin's pioneering enterprise Chemistry in Britain(August 1988), 787-790
- Lefèvre, L. (1896). Traité des matieres colorantes organiques artificielles, de leur preparation industrielle et de leur application Paris

- Lightfoot, J. E. (1871). The chemical history and progress of aniline black Burbley
- Merz, A. (1944). Early American Coal Tar Dye Industry Chemical and Engineering News **22** 1275-1280
- Meyer-Thurow, G. (1982). The Industrialization of Invention: A Case Study from the German Chemical Industry Isis **73** 363-81
- Miall, S. (1931). A History of the British Chemical Industry London
- Morgan, G. T. (1936). Hofmann Memorial Lecture 1936 London
- Morris, P. J. T., Russell, C. A., & Smith, J. G. (1988). Archives of the British Chemical Industry 1750-1914. A handlist Millbrook, Southampton: the British Society For the History of Science
- Mückenberger R (1905). Handbuch der Chemischen Industrie der Ausserdeutschen Länder III Berlin: Verlag von Rudolf Mückenberger
- Mückenberger R (1909). Handbuch der Chemischen Industrie der Ausserdeutschen Länder IV Berlin: Verlag von Rudolf Mückenberger
- Mückenberger R (1913). Handbuch der Chemischen Industrie der Ausserdeutschen Länder V Berlin: Verlag von Rudolf Mückenberger
- Müller, D. H. De strijd om de kleurstoffen., Chemie verovert de wereld Zeist: Uitgeversmaatschappij W. de Haan N.V. (Phoenix Pocket no 20) 10-30
- Osteroth, D. Teerchemie. Soda, Teer und Schwefelsäure. Der Weg zu Grosschemie Rowohlt . 71-106
- Pfützner, J. (1916). Beiträge zur Lage der chemischen insbesondere der Farbstoffindustrie in den Vereinigten Staaten von Amerika
- Piloty, R. (1910). Gustav Siegle - Ein Lebensbild Stuttgart: Union Deutsche Verlagsgesellschaft
- Pohl, H., Schaumann, R., & Schönert-Röhlk, F. (1983). Die chemische Industrie in den Rheinlanden während der Industriellen Revolution. Bd. 1: Die Farbenindustrie Wiesbaden: Franz Steiner Verlag GmbH
- Redlich, F. (1914). Die Volkswirtschaftliche Bedeutung der deutsche Theerfarbenindustrie München & Leipzig
- Reitz, D. Entwicklung des Uerdinger Bayerwerks
- Sack, E. (1958a). Le Centenaire de la Découverte de la Fuchsine Chemie et Industrie **80**

- Sack, E. A. (1958b). La Fuchsine est centenaire. François-Emmanuel Verguin, les premiers colorants de synthèse Zeitschrift für angewandte Chemie **23** 849-864
- Sandler, C., & Berggold, F. (1866). Deutschlands Handel und Industrie Berlin
- Sansone, A. (1910). Bericht über die Fortschritte des Zeugdrucks verwandter Industrien Leipzig
- Schaumann, R. (1977). Technik und technischer Fortschritt im Industrialisierungsprozeß, dargesellt am Beispiel der Papier-, Zucker-, und cheischen Industrie der nördlichen Rheinlande, 1800-1875 Bonn
- Schrötter, D. v. (1867). Producte der Theerfarben-Industrie
- Schultz, D. G. (1901). Die Chemie des Steinkohlentheers mit besonderer berücksichtigung der künstlichen Organischen Farbstoffe II Braunschweig: Friedrich Vieweg und Sohn
- Schultz, G. (1882). Chemie des Steinkohlentheers mit besonderer berücksichtigung der künstlichen Organischen Farbstoffe Braunschweig
- Schultz, G., & Julius, P. (1891). Tabellarische Übersicht der Künstlichen Organischen Farbstoffe Berlin: R. Gaertner's Verlagsbuchhandlung
- Schultz, G., & Julius, P. (1902). Tabellarische Übersicht der Künstlichen Organischen Farbstoffe (4 ed)
- Schuster, C. (1973). Vom Farbenhandel zur Farbenindustrie **11**
- Sonnemann, R. (1963). Zur Geschichte der Theerfarben- Industrie in Deutschland von ihren Anfängen bis zur Bildung der beiden Dreibünde (1905/1907) **14**
- Thissen, F. (1922). Die Stellung der deutschen Theerfarbenindustrie in de Weltwirtschaft (vor, in, und nach dem Kriege) Giessen
- Travis, A. S. (1993). The Rainbow Makers. The Origins of the Synthetic Dyestuffs Industry in Western Europe London: Associated University Presses
- Trillat, J. A. (1888). L'enseignement et l'industrie chimique en Allemagne Paris
- Trillat, J. A. (1900). L'Industrie chimique en Allemagne, organisation économique, scientifique et commerciale
- Turgan, J. (1865). Les Grandes Usines. Études industrielles en France et à l'étranger **4** Paris
- Union des Industries Chimiques. (1928). Annuaire (Quatrième Année) Paris

Verdeil, D. (1859/60). Compte rendu de l'exposition universelle de 1855 Le Moniteur Scientifique du Chimiste et du Manufacturier **2** 98-103

Voelcker, H. (1938). 75 Jahre Kalle Wiesbaden-Biebrich

Vogel, D. M. (1870). Die Entwickuling der Anilin-Industrie. Die Fortschritte in Theorie und Praxis der Anilinfarben seit dem Jahre 1865. Zugleich nachtrag zu 1e Auflage des werkes "Die Anilinfarben" II Leipzig

Wagner, J. R. (1868). Technologische Studien auf der Allgemeinen Kunft- und Industrieausstellung zu Paris im Jahre 1867 Leipzig: Otto Wigand

Wagner, J. R. (1870). Handbuch der Chemischen Technologie (8 ed)

Wagner, J. R. (1874). Handbuch der Chemischen Technologie (9 ed)

Wedding, D. H. (1863). Chemische Produkte; Pharmaceutische Stoffe und Präparate. Section A. Chemische Produkte, Ambtlicher Bericht über die Industrie und Kunst-Aufstellung zu London im Jahre 1862 Berlin: Verlag der Röniglichen Geheimen Ober-Hofbuchdruckerei

Welsch, F. (1981). Geschichte der Chemischen Industrie: Abriss der Entwicklung ausgewählter Zweiger der chemischen Industrie von 1800 bis zur Gegenwart **13** Berlin (Ost): VEB Deutsche Verlag der Wissenschaften

Weng, E. (1939). Die Werksgegeschichte durch Direktor E. Weng im Auftrage der Direktion

Wenzel, O. (1888). Adressbuch und Waarenverzeichniss der Chemischen Industrie des Deutschen Reichs I Berlin: Verlag von Rudolf Mückenberger

Wenzel, O. (1892). Adressbuch und Waarenverzeichniss der Chemischen Industrie des Deutschen Reichs III Berlin: Verlag von Rudolf Mückenberger

Wenzel, O. (1898). Adressbuch und Waarenverzeichnis der Chemischen Industrie des Deutschen Reichs VI Berlin: Rudolf Mückenberger

Wenzel, O. (1906). Adressbuch und Waarenverzeichnis der Chemischen Industrie des Deutschen Reichs IX Berlin: Rudolf Mückenberger

Wenzel, O. (1912). Adressbuch und Waarenverzeichnis der Chemischen Industrie des Deutschen Reichs XII Berlin: Rudolf Mückenberger

Wenzel, O. (1914). Adressbuch und Waarenverzeichnis der Chemischen Industrie des Deutschen Reichs XIII Berlin: Rudolf Mückenberger

Weyl, T. (1892 (German 1889)). The coal-tar colors, with especial reference to their injurious qualities and the restrictions in their use (Leffmann, Henry, Trans.) Philadelphia

Wharton, B. F., & Soxhlet, V. H. (1892). Die Kattun-Druckerei Wien

Wurtz, M. A. (1862). Matières Colorantes dérivées du goudron de houille. In M. Chevalier (Eds), Exposition Universelle de Londres de 1862 I (Section IV)

Part VII Firm indexes

Here is a list of the firms in our database. They are presented in the order in which they were created. Every firm has a firm id. If the firm belonged to another firm in the database the firm is also assigned the corporate ID (CORID) of the parent. When a firm changed ownership but remained the same economic entity we indicated that relationship through assigning an economic unit ID (EUID). (The EUID is only presented in the Table below and not in the database itself).

In general the EUID is identical to the FID. But there are cases in which different legal entitled (FID's) belong to the same Economic Unit. The list of firms presented below presents for each firm the Firm ID, CORID EUID.

A few examples can elucidate how this should be interpreted:

Obs1: EUID 33 with FID 1 means FID 1 and FID 33 are part of the same economic unit, with EUID 33.

Obs 4 and 5: EUID 10 includes FID 8 and FID 9, means FID 8, FID 9 and FID 10 are part of the same economic unit, with EUID 10.

There are a few parts, which are still under construction. When a firm has a corporate ID of 999, it should be interpreted as having the same corporate ID as the firm ID.

EUID	Corporate ID	Firm ID	Year	Firm Name	Country
2	999	1	1848	C. Collas	France
33	33	33	1848	Collas & Larocque	France
125	124	124	1849	N. Ph. Guinon	France
116	186	186	1849	A. Péter (et Cie)	France
33	3	3	1851	A. Larocque	France
230	999	509	1851	K. Oehler (I)	Germany
116	109	109	1852	A. Peter , Guinon et Cie	France
230	999	510	1852	K. und R. Oehler	Germany
5	4	4	1855	Depouilly frères	France
107	7	7	1855	Ferd. Petersen (I)	France
98	98	98	1855	Milliant et Ducluzel / Milliard et Duclusel	France
112	112	112	1855	Louis Raffard et Cie.	France
146	146	146	1855	Kessler	France
147	147	147	1855	Reber	France
168	999	168	1855	Otto Bredt & Co.	Germany
264	999	264	1855	Krimmelbein & Bredt	Germany
317	317	317	1855	Dorvault	France
439	439	439	1855	Roberts, Dale & Co.	Britain
496	496	496	1855	R. Rumney	Britain
116	110	110	1856	Guinon jeune et Cie	France

125	125	125	1856	Guinon, Marnas et Bonnet	France
149	149	149	1856	J. Zuber & Co.	France
399	399	399	1856	Simpson, Maule & Nicholson	Britain
94	94	94	1857	Monnet et Dury	France
140	140	140	1857	E. Mulaton et Cie.	France
319	319	319	1857	Jacob Braun	Austria
402	402	402	1857	Perkin & Sons	Britain
440	440	440	1857	F.C. Calvert & Co.	Britain
5	5	5	1858	Depouilly frères et Cie.	France
81	80	80	1858	Renard frères	France
104	102	102	1858	Ch. Kestner	France
105	105	105	1858	Alex. Franc et Cie.	France
252	999	252	1858	Duvernay, Peters & Co.	Germany
346	999	346	1858	Carl Jäger	Germany
15	15	15	1859	J. R. Geigy & U. Heusler	Switzer
107	21	21	1859	F. Petersen & Sichler	France
23	23	23	1859	Rajecki	France
25	25	25	1859	Rollard	France
28	27	27	1859	F. Laurent & Casthelaz	France
45	44	44	1859	Sidney Langlois	France
76	76	76	1859	(M.) Fayot	France
81	81	81	1859	Renard frères et Franc	France
84	84	84	1859	Luxer (& Co.)	France
106	106	106	1859	Girard, De Laire et Pelouze	France
159	999	159	1859	Rudolph Knosp	Germany
202	999	202	1859	A. Clavel	Switzer
221	999	220	1859	Dahms & Barkowski	Germany
230	999	230	1859	K. Oehler (II)	Germany
318	318	318	1859	Theodor Goldschmidt	Germany
330	330	330	1859	J.A. Gerber-Keller	France
426	426	426	1859	Hands, Son & Co.	Britain
686	106	686	1859	“Girard, De Laire et Pelouze-Britain”	Britain
16	16	16	1860	J. J. Muller & Cie.	Switzer
22	22	22	1860	C.T. Petersen	Germany
26	26	26	1860	Boutin et Peyroux	France
29	29	29	1860	Collin et Coblenz (frères)	France
35	34	34	1860	Veuve Brigonnet et fils	France
36	36	36	1860	Montier	France
37	37	37	1860	Langevin	France
39	41	41	1860	Poirrier et Chappat fils	France
47	47	47	1860	Morel et Bizot	France
48	48	48	1860	Fayolle et Cie	France
49	49	49	1860	C. Deroche & L. Parisel	France
83	83	83	1860	Tabourin et Sanlaville	France
286	286	286	1860	Theodor Peters	Germany
301	301	301	1860	Pommier et Cie.	France
311	999	311	1860	H. Schwartz	Germany
314	314	314	1860	Chemische Fabrik für Gastheer- industrie, Graf & Co.	Germany

315	315	315	1860	Delesalle	France
359	359	359	1860	Read Holliday	Britain
411	406	406	1860	Dan Dawson	Britain
445	445	445	1860	Manchester Aniline Company (Charles Truby & Co.)	Britain
616	301	616	1860	E. & A. Pommier, Germany	Germany
45	45	45	1861	Aubert et S. Langlois	France
46	46	46	1861	Arthur Langlois	France
54	54	54	1861	Beltzung	France
57	57	57	1861	Plisson et Poncet	France
119	999	119	1861	Alemonières et Jaeger (or Alesmonière et Jaeger)	France
72	999	156	1861	Chemische Fabrik Dyckerhoff, Clemm & Comp.	Germany
250	251	251	1861	C. Richter	Germany
261	999	261	1861	Edmund Köllitz	Germany
272	999	272	1861	Heinrich Tillmanns	Germany
277	999	277	1861	J.W. Weiler & Co.	Germany
486	486	486	1861	R(ichard) Smith	Britain
495	494	494	1861	Wilson & Fletcher	Britain
504	504	504	1861	George Miller & Co.	Britain
538	538	538	1861	J. Javal	France
599	81	599	1861	“Renard frères et Franc- Great Britain”	Britain
623	623	623	1861	Hugo Levinstein (I)	Italy
704	194	704	1861	Friedrich Bayer	Germany
1	2	2	1862	C. Collas et Cie.	France
10	21	8	1862	Ferd. Petersen	Switzer
40	40	40	1862	Dalsace frères	France
259	41	42	1862	L. Vée	Switzer
53	53	53	1862	Félix Dehaynin	France
55	55	55	1862	C.J. Usèbe (et Cherpin)	France
58	58	58	1862	Monaque, Chesneau et Cie.	France
59	59	59	1862	B. Perra	France
61	61	61	1862	Compagnie Parisienne d'éclairage et de chauffage par le gaz.	France
87	87	87	1862	A. Girard et Badin	France
91	91	91	1862	Malivernet et Cie	France
117	999	117	1862	Prunier, L. or P.	France
120	120	120	1862	Coignet père, fils et Cie.	France
126	999	126	1862	J.G. Dollfus	Switzer
141	999	141	1862	J. Feer	Switzer
167	999	167	1862	Guigon et Boulon	Switzer
189	999	189	1862	J. Brönner / J. Brönner's Fabrik	Germany
284	284	284	1862	Langerfeld	Germany
299	298	298	1862	Th. Würtz	Germany
305	999	305	1862	Waltjen's Chemische Fabrik	Germany
323	323	323	1862	E. Lehner	Austria
328	328	328	1862	Wagemann, Seybel & Comp.	Austria
338	338	338	1862	Gebr. Appolt	Germany

342	999	342	1862	Dr. August Eisenlohr	Germany
358	358	358	1862	F. Murin	Switzer
419	999	419	1862	Frederick Allen	Britain
464	464	464	1862	Spurr (Dr. Wolf)	U.S.
465	465	465	1862	Union Coal and Oil Company	U.S.
499	499	499	1862	Daniel Judson & Son	Britain
30	30	30	1863	Coblenz frères	France
60	60	60	1863	Boboeuf	France
101	101	101	1863	Cl. Courtois et Cie	France
150	999	150	1863	Jules Roth	France
72	999	157	1863	Sonntag, Engelhorn & Clemm	Germany
193	194	194	1863	Friedrich Bayer & Co.	Germany
196	999	196	1863	W.L. Bechstein	Germany
233	233	233	1863	Schönlack Söhne (Schönlank?)	Germany
247	245	245	1863	Meister, Lucius & Co. (=Hoechst)	Germany
259	41	259	1863	“Poirrier et Chappat fils-Switzerland”	Switzer
263	999	263	1863	Ferdinand Krimmelbein	Germany
266	999	266	1863	Langerfeld & Fröhling	Germany
267	267	267	1863	Kalle & Co	Germany
285	285	285	1863	Larivière & Stoess	Germany
393	349	349	1863	Hugo Levinstein (GB)	Britain
360	360	360	1863	Thomas Holliday & Co	Britain
390	390	390	1863	Michel & Burdet	Italy
480	480	480	1863	Charles Lowe & Co.	Britain
503	503	503	1863	Antoine Labore	Britain
595	28	595	1863	“John Casthelaz-Great Britain”	Britain
348	999	708	1863	L.J. Levinstein	Germany
742	742	742	1863	F. Fol & Gardy	Switzer
56	596	56	1864	J.A. Schlumberger	France
82	82	82	1864	Société La Fuchsine	France
93	93	93	1864	Ribollet et Cie	France
170	999	170	1864	Dr. M. Jordan	Germany
208	999	208	1864	Gerber & Uhlmann	Switzer
393	386	348	1864	G. & A. Levinstein	Germany
364	364	364	1864	Thomas & Charles Holliday	U.S.
374	374	374	1864	“Dye Company Albany”	U.S.
393	386	386	1864	Levinstein & Co.	Britain
523	999	523	1864	Lomer, Schomburg & Co.	Germany
623	386	617	1864	“Levinstein & Co.- Italy”	Italy
636	56	636	1864	J. J. Muller & Cie-France	France
735		735	1864	Dr. Emil Jacobsen, Farbenfabrik	Germany
6	6	6	1865	Henri Vedles et Cie.	France
14	11	11	1865	Joh. Rud. Geigy	Switzer
31	31	31	1865	J. Th. Coupier	France
72	72	72	1865	BASF (Badische Anilin- und Soda Fabrik)	Germany
107	107	107	1865	Ferd. Petersen (II)	France
116	185	113	1865	Guinon jeune et Picard	France
181	181	181	1865	Dahl & Co.	Germany

513	999	197	1865	Gebrüder Gessert	Germany
282	282	282	1865	Lachmann & Breuninger	Germany
400	400	400	1865	Nicholson, Maule & Co	Britain
600	82	600	1865	“Société La Fuchsine- Great Britain”	Britain
28	28	28	1866	John Casthelaz	France
90	90	90	1866	Laroche, Ruegg et Cie.	France
118	118	118	1866	Société de carbonisation de la Loire, Carvès et Cie.	France
283	283	283	1866	Sächsische-Thüringsche Actiengesellschaft für Braunkohlenverwertung	Germany
304	304	304	1866	Minhorst & Schultes	Germany
411	407	407	1866	Dawson Brothers	Britain
495	495	495	1866	W.V. Wilson & Co.	Britain
79	79	79	1867	Tellier et Fievet	France
85	85	85	1867	Luthringer	France
135	999	135	1867	Louis Ferber et fils	France
158	999	158	1867	Heinrich Siegle	Germany
163	999	163	1867	C. Weyl	Germany
171	999	169	1867	Gesellschaft für Anilinfabrikation	Germany
247	245	246	1867	Meister, Lucius & Brüning (=Hoechst)	Germany
327	327	327	1867	Charles Polley	Austria
331	331	331	1867	F. Frische	Germany
371	371	371	1867	Mme E. Donny-Baertsoen	Belgium
427	427	427	1867	Grau & Co. (or Gray?)	Britain
39	38	38	1868	A. Poirrier	France
75	75	75	1868	Viallon fils	France
97	95	95	1868	P. Monnet et Cie	Switzer
127	999	127	1868	Ch. Couleru	Switzer
240	999	240	1868	W. Hilgers	Germany
361	361	361	1868	T, C. & E. Holliday	Britain
363	362	362	1868	Read Holliday & Sons	Britain
377	375	375	1868	Albany Aniline & Chemical Company	U.S.
378	378	378	1868	Williams, Thomas & Dower	Britain
401	401	401	1868	Brooke, Simpson & Spiller	Britain
134	134	134	1869	Guinon fils et Cie.	France
176	999	176	1869	Kunheim & Co.	Germany
89	88	88	1870	Marnas frères, jeune	France
174	174	174	1870	Frankfurter Anilinfarbenfabrik von Gans & Leonhardt	Germany
341	999	341	1870	Schomburg & Stegemann	Germany
423	423	423	1870	E. Reynolds & Sons	Britain
484	484	484	1870	D. Smith/ George Smith (?)	Britain
596	596	596	1870	J.A. Schlumberger	Belgium
73	73	73	1871	Thomàs frères	France
133	999	128	1871	Louis Durand, Fabrique de Matieres Colorantes Artificielles	Switzer
221	999	221	1871	Ludwig Barkowski, vorm. Dahms & Barkowski	Germany

280	280	280	1871	Lembach & Schleicher	Germany
373	373	373	1871	J.B. Ibels, Fabrique de couleurs d'aniline	Belgium
393	387	387	1871	L.I. Levinstein & Sons (also L.J. Levinstein & Sons)	Britain
420	999	420	1871	John Allen	Britain
521	521	521	1871	J. Higgin & Co.	Britain
537	537	537	1871	Richard Meixner	Germany
592	592	592	1871	Chemische Fabrik bei Station Haan	Germany
104	103	103	1872	Fabrique des Produits Chimiques de Thann	Germany
133	999	129	1872	L. Durand et Huguenin	Switzer
161	161	161	1872	Actien-Gesellschaft für Stückfärberei	Germany
192	192	192	1872	Dr. C. Leverkus & Söhne	Germany
227	999	227	1872	Verein Chemischer Fabriken	Germany
320	320	320	1872	Alizarine factory in Austria	Austria
372	372	372	1872	Max Singer	Belgium
449	449	449	1872	W.C. Barnes & Co.	Britain
68	68	68	1873	La Phényline	France
89	89	89	1873	Marnas frères	France
171	171	171	1873	Actien Gesellschaft für Anilinfabrikation (AGFA)	Germany
513	999	198	1873	Chemische Industrie A.G.	Germany
199	199	199	1873	C. vom Bauer	Germany
205	999	203	1873	Bindschedler & Busch	Switzer
242	999	242	1873	Gauhe & Co.	Germany
250	999	250	1873	Elberfelder Alizarin- und Anilin-Farben AG	Germany
313	313	313	1873	Schöneberg & Hufschmidt	Germany
324	324	324	1873	Nejedly	Austria
334	334	334	1873	Chemische fabrik von Dr. P. Greiff	Germany
357	357	357	1873	Fr. Lotz	Switzer
394	394	394	1873	"Aniline dye works"	Britain
687	687	687	1873	Bosch & Denner	Germany
688	688	688	1873	Frank & Böhringer	Germany
86	86	86	1874	Renard, Villet et Bunand	France
143	999	143	1874	Ullrich & Grothe	Germany
183	999	162	1874	Dr. W. Weyl, Anilinfabrik	Germany
262	999	262	1874	Fabrik von Dr. J.B. König	Germany
271	999	271	1874	Chemische Fabrik von Heijden	Germany
308	999	308	1874	Patentfarbenfabrik E. Freise	Germany
396	396	396	1874	Aniline oil plant	Britain
108	108	108	1875	Mondange	France
256	999	256	1875	G. Feyerabendt	Germany
281	281	281	1875	C. Neuhaus	Germany
337	337	337	1875	Przibram, Ullrich & Co	Austria
398	398	398	1875	James Thomas Brown (?)	Britain
415	415	415	1875	American Aniline Works	U.S.

490	490	490	1875	Wm.G. Thompson & Co./ Wm. Goulden Thompson	Britain
100	100	100	1876	d'Andiran et Wegelin	Germany
302	302	302	1876	Dr. E. Ostermeyer (or Ostermayer)	Germany
336	336	336	1876	Oestereichische Alizarin-Fabriks Gesellschaft Przibram & Co.	Austria
385	385	385	1876	L. Destrée, A. Wiescher & Co.	Belgium
392	392	392	1876	Alizarine and Anthracene Company	Britain
403	403	403	1876	Burt, Boulton & Haywood	Britain
411	408	408	1876	Dan Dawson Brothers	Britain
446	446	446	1876	Clayton Aniline Company Ltd.	Britain
469	469	469	1876	Peter Solowjew	Russia
77	999	164	1877	Henriet, Roman et Vignon	France
182	999	182	1877	Arzberger, Schöpff & Co.	Germany
508	380	380	1877	Williams Brothers & Co. (I)	Britain
497	497	497	1877	Joseph Storey & Co.	Britain
566	566	566	1877	Crowther & Co.	Britain
66	66	66	1878	Patry et Cie	France
145	999	145	1878	Louis Freund	Germany
249	249	249	1878	C. Dörr	Germany
274	999	274	1878	Dr. E. ter Meer & Co.	Germany
379	379	379	1878	Thomas & Dower (Ltd.)	Britain
511	449	511	1878	"Rainham Aniline Company" (W.C. Barnes & Co.?)	Britain
597	72	597	1878	Succursale dela Badische Anilin- & Soda-Fabrik (BASF)	France
598	72	598	1878	Badische Anilin- und Soda Fabrik (BASF) Russian subsidiary	Russia
177	999	177	1879	Dr. M. Salzmann, Anilinfabrik Fürstenberg	Germany
190	190	190	1879	A. Leonhardt & Co.	Germany
257	999	257	1879	Frankfurter Anilin-Farben-Fabrik von Gans & Co.	Germany
306	999	306	1879	M.B. Vogel	Germany
322	322	322	1879	Aniline Dye Factory near Brünn	Austria
384	382	382	1879	Schoellkopf Aniline & Chemical Company (I)	U.S.
393	388	388	1879	I. Levinstein & Co.	Britain
519	518	518	1879	L.L. Hoesch & Söhne, Fabrik Chemische Produkte	Germany
247	247	247	1880	Farbwerke vorm. Meister, Lucius & Brüning (=Hoechst)	Germany
418	418	418	1880	Heller & Merz Co.	U.S.
500	500	500	1880	Dr. Sieber	Germany
732	999	732	1880	H. Tillmanns & Co.	Germany
32	32	32	1881	Compagnie Parisienne de Couleurs d'Aniline	France
39	39	39	1881	S.A. des Matières Colorantes et Produits Chimiques de Saint-Denis	France

77	77	77	1881	Léo Vignon et Cie	France
193	193	193	1881	Farbenfabrik vorm. Friedrich Bayer & Co.	Germany
211	999	211	1881	Dittler & Co.	Germany
223	999	223	1881	Chemische Fabrik, vorm. Hofmann & Schoetensack	Germany
228	999	228	1881	Chemische Fabrik Griesheim A.G.	Germany
231	999	231	1881	Chemikalienwerk Mainthal	Germany
235	999	235	1881	Friedrich Haarmann	Germany
255	999	255	1881	Ewer & Pick	Germany
291	291	291	1881	Chemische Fabrik von Dr. Martin Thümmel	Germany
332	332	332	1881	Gesellschaft der Manufakturen von Ludwig Rabeneck	Russia
416	416	416	1881	Empire Aniline Dye Works	U.S.
493	493	493	1881	J.F. Espenschied	Germany
501	501	501	1881	Société anonyme Belge de Produits Chimiques	Belgium
602	129	602	1881	"L. Durand et Huguenin-France"	France
603	129	603	1881	"L. Durand et Huguenin-Germany"	Germany
70	69	69	1882	J. Ruch et fils	France
111	111	111	1882	E. Merlanchon, France	France
142	999	142	1882	Grothe	Germany
148	999	148	1882	Müller, Schulz & Fischesser	Germany
172	999	172	1882	Georg Karl Zimmer	Germany
178	999	178	1882	Leipziger Anilinfabrik Beyer & Kegel	Germany
273	999	273	1882	Küchler & Buff	Germany
275	999	275	1882	Tillmanns, E. ter Meer & Co.	Germany
288	288	288	1882	Joh. Conr. Reihlen	Germany
299	299	299	1882	Th. Würtz Nachfolger	Germany
353	353	353	1882	Chemischen Fabrik J. Finster	Switzer
508	380	381	1882	Williams Brothers & Ekin (or Eakin?)	U.S.
405	405	405	1882	British Alizarine Company Ltd	Britain
421	421	421	1882	Leeds Manufacturing Company	U.S.
435	435	435	1882	Charlton Brothers	Britain
438	436	436	1882	Hudson River Aniline & Color Works	U.S.
515	515	515	1882	Dr. H. Müller	Germany
565	565	565	1882	Frederick Benjamin Crossley & Son	Britain
612	612	612	1882	"Farbenfabrik vorm. Friedrich Bayer & Co.-France"	France
618	4088	618	1882	"Dan Dawson Brothers- United States"	U.S.
706	706	706	1882	Williams Brothers & Ekin	Britain
739	999	739	1882	Farbenfabrik vorm. J. Brönner	Germany
184	999	184	1883	Theerproduktenfabrik von Adolph Artmann	Germany
205	999	204	1883	Bindschedler, Busch & Cie.	Switzer
225	999	225	1883	Farbwerk Friedrichsfeld Dr. Salzmann	Germany
460	459	459	1883	(Josiah) Hardman & Co.	Britain

505	505	505	1883	Sadler & Co. Ltd.	Britain
516	516	516	1883	A. Weyerman & Söhne	Germany
736	999	736	1883	Farbwerke Griesheim, Dittler & Co.	Germany
613	193	745	1883	Haus Siegle	Russia
104	104	104	1884	Fabriques de Produits Chimiques de Thann et de Mulhouse	Germany
205	205	205	1884	Gesellschaft für Chemische Industrie in Basel (CIBA)	Switzer
243	999	243	1884	Chemische Fabrik Grünau, Landshoff & Meyer	Germany
200	290	290	1884	Remy, Erhart & Co.	Germany
377	376	376	1884	Albany Coal Tar Dye & Chemical Company	U.S.
483	483	483	1884	“Ruda Pabianicer Anilinöl u. Farbenfabrik AG/ Russische Anilinfabrik AG”	Russia
508	508	508	1884	Williams Brothers & Co (II)	Britain
514	514	514	1884	Chemische Fabrik Uerdingen, Lienau & Co.	Germany
614	267	614	1884	Kalle & Co. (New York)	U.S.
615	267	615	1884	“Kalle & Co- Russia”	Russia
741	741	741	1884	E. Merlanchon, Switzerland	Switzer
743	743	743	1884	P. Monnet et Cie (France)	France
78	78	78	1885	Manufacture Lyonnaise de matières colorantes	France
121	121	121	1885	A. Sevoz et Boasson	France
154	999	154	1885	A. Böninger	Germany
195	999	195	1885	Bergische Anilin- und Sodafabrik L. Letterman	Germany
28	395	395	1885	John Casthelaz, Bruère & Co.	France
414	414	414	1885	John Dawson (& Sons)	Britain
482	481	481	1885	Schweikert & Froehlich	Russia
591	181	591	1885	A. Dahl	Germany
627	627	627	1885	“Farbwerke vorm. Meister, Lucius & Brüning (=Hoechst)- Russia”	Russia
97	96	96	1886	Gilliard, P. Monnet et Cartier (F)	France
513	180	180	1886	Anilinöl-Fabrik A. Wülfing	Germany
209	999	209	1886	A. Gerber et Cie.	Switzer
228	236	236	1886	J. Hauff	Germany
321	321	321	1886	Kinzlberger & Co	Austria
352	350	350	1886	Kern & Sandoz	Switzer
460	460	460	1886	Hardman & Holden	Britain
626	626	626	1886	Gilliard, P. Monnet et Cartier (Sw)	Switzer
151	999	151	1887	Alfred Fischesser & Co	Germany
187	187	187	1887	Bode & Strasburger	Russia
212	999	212	1887	Marx & Müller	Germany
276	999	276	1887	Farbwerke E. ter Meer & Co.	Germany
310	310	310	1887	Gronewald & Stommel, Chemische Fabrik Mariënhöhe	Germany

450	450	450	1887	H.W. Jayne Chemical Company	U.S.
475	475	475	1887	Wood & Bedford	Britain
541	541	541	1887	Breuninger, Eduard	Germany
542	542	542	1887	Gutbier & Co	Germany
730	730	730	1887	James Whitlock	Britain
738		738	1887	Chemische Fabrik Bettenhausen, Marquart & Schulz	Germany
14	12	12	1888	Joh. Rud. Geigy & Co.	Switzer
116	114	114	1888	Guinon, Picard et Jay	France
133	130	130	1888	L. Durand, Huguenin et Cie.	Switzer
215	999	213	1888	Farbwerke Griesheim am Main, W. Nötzel & Co.	Germany
226	999	226	1888	Chemische Fabrik Lindenhof, C. Weyl & Co,	Germany
270	270	270	1888	Königswarter & Ebell	Germany
606	130	606	1888	"L. Durand, Huguenin et Cie- France"	France
607	130	607	1888	"L. Durand, Huguenin et Cie- Germany"	Germany
35	35	35	1889	Brigonet et Naville	France
278	999	278	1889	Chemische Fabrik vorm. J.W. Weiler & Co.	Germany
345	343	343	1889	Pick, Lange & Co.	Holland
696	696	696	1889	Jan Smiechocki	Russia
393	999	188	1890	I. Levinstein & Co. Ltd.	Britain
363	363	363	1890	Read Holliday & Sons Ltd	Britain
365	365	365	1890	Read Holliday & Sons Inc	U.S.
411	409	409	1890	Dan Dawson Brothers, Ltd	Britain
412	412	412	1890	John W. Leitch & Co.	Britain
543	999	543	1890	Farbwerk Friedrichsfeld C. Riegler	Germany
67	67	67	1891	A. George	France
517	999	152	1891	Avelis & Huster	Germany
153	999	153	1891	Dr. Boessneck & Co.	Germany
155	999	155	1891	Dr. Cahn & Franck	Germany
238	999	238	1891	Buch & Landauer	Germany
268	268	268	1891	Eduard Gossel	Germany
269	269	269	1891	Clemens Gross	Germany
294	294	294	1891	R. Wedekind & Co.	Germany
312	999	312	1891	Sternberg & Deutsch	Germany
434	404	404	1891	Claus & Réé	Britain
441	441	441	1891	Bulls Ferry Chemical Company	U.S.
590	590	590	1891	Dr. F. Raschig	Germany
609	609	609	1891	"AGFA- Italy"/ Folcioni & Steffenini	Italy
116	116	116	1892	Lucien Picard et Cie (II)	France
228	237	237	1892	J. Hauff & Co., GmbH	Germany
248	248	248	1892	Gustav Dörr & Co.	Germany
296	296	296	1892	Dr. Walther Wolff	Germany
519	519	519	1892	Actien Gesellschaft für Chemische Industrie, Filiale Barmen	Germany
691	615	691	1892	Chemische Fabrik Kalle & Co.	Russia

10	9	9	1893	Ferd. Petersen & Cie.	Switzer
71	71	71	1893	Victor Steiner, Fabrique de Produits chimiques	France
166	166	166	1893	Wilhelm Brauns	Germany
206	999	206	1893	Basler Chemische Fabrik Bindschedler	Switzer
352	351	351	1893	Chemische Fabrik Sandoz & Cie.	Switzer
414	413	413	1893	John Dawson & Co. Ltd	Britain
544	999	544	1893	Farbwerk Friedrichsfeld Propfe & Remy	Germany
173	173	173	1894	Leopold Cassella & Co.	Germany
377	377	377	1894	William J. Matheson & Co Ltd	U.S.
492	492	492	1894	Smiechocki & Hordliczka (later S & H & Co.)	Russia
715	715	715	1894	Arthur Ashworth	Britain
97	97	97	1895	Soc. Chimique des Usines du Rhône	France
191	191	191	1895	Farbwerk Mühlheim vorm. A. Leonhardt en Co.	Germany
352	352	352	1895	Chemische Fabrik vormals Sandoz	Switzer
393	393	393	1895	Levinstein Ltd.	Britain
674	674	674	1895	“Soc. Chimique des Usines du Rhône-Swiss”	Switzer
133	131	131	1896	Gesellschaft für Anilinprodukte	Switzer
210	999	210	1896	Anilinfabrik vorm. A. Gerber & Cie. A.G.	Switzer
279	279	279	1896	Chemische Fabriken vorm. Weiler-ter Meer	Germany
451	451	451	1896	Barrett Manufacturing Co.	U.S.
545	999	545	1896	Farbwerk Friedrichsfeld Dr. Paul Remy	Germany
604	604	604	1896	“Gesellschaft für Anilinprodukte-France”	France
605	605	605	1896	“Gesellschaft für Anilinprodukte-Germany”	Germany
70	70	70	1897	Société française des couleurs d’aniline (Ruch)	France
215	999	214	1897	Farbwerk Griesheim am Main, Nötzel, Istel & Co.	Germany
366	366	366	1897	Nederlandsche Verf- en Chemicaliënfabriek	Holland
428	428	428	1897	Ernest Hickson	Britain
526	526	526	1897	Chemische Fabrik Edenkoben, L. Meyer & Co	Germany
527	527	527	1897	Chemische Fabrik Wülfel, Juch & Dittmar	Germany
528	528	528	1897	Friedrich Feustell Nachfolger	Germany
529	529	529	1897	Hartmann & Lucke	Germany
531	531	531	1897	J.D. Riedel	Germany
532	532	532	1897	Farbwerk Fr. Rosé & Co	Germany
533	533	533	1897	Georg Singer	Germany
535	535	535	1897	Theodor Wirtz	Germany
536	536	536	1897	Friedr. Witte	Germany

613	193	613	1897	Aktiengesellschaft der chemischen Fabrik Friedrich Bayer & Co. (Russia)	Russia
663	663	663	1897	Wilhelm Brauns (Austria)	Austria
18	18	18	1898	“Geigy-Germany”/ J.R. Geigy, Akt.-Ges.	Germany
207	999	207	1898	Basler Chemische Fabrik A.G.	Switzer
522	999	224	1898	Chemische Fabrik Gernsheim	Germany
229	999	229	1898	Chemische Fabrik Griesheim- Elektron	Germany
442	442	442	1898	Central Dyestuff & Chemical Co.	U.S.
458	458	458	1898	American Color & Chemical Co. / American Aniline Co.?	U.S.
517	999	517	1898	Avelis & Huster Nachfolger	Germany
524	524	524	1898	Bertsch & Harmsen	Germany
530	530	530	1898	P. Ovenbeck & Co.	Germany
534	534	534	1898	Wegelin Sohn, G	Germany
579	579	579	1898	Chemische Fabriken und Asphaltwerke A.G.	Germany
611	611	611	1898	Actien Gesellschaft für Anilin-Fabrikation (AGFA Russia)	Russia
619	619	619	1898	“Dr. Bender & Dr. Hobein-Switzerland”	Switzer
622	622	622	1898	Russische Anilinfarben-Fabrik Leopold Cassella & Co.	Russia
677	677	677	1898	Société anonyme des Produits Friedrich Bayer & Cie.	France
731	999	731	1898	Chemische Fabrik Grünau	Germany
733		733	1898	A. Beringer	Germany
216	999	216	1899	Deutsche Vidal Farbstoffe Actien Gesellschaft	Germany
384	383	383	1899	Schoellkopf, Hartford & Hanna Co.	U.S.
411	411	411	1899	Colne Vale Dye & Chemical Co.	Britain
482	482	482	1899	Pabianicer Actiengesellschaft für Chemische Industrie	Russia
489	489	489	1899	Sachs & Co.	Russia
133	132	132	1900	Farbwerke vorm. L. Durand, Huguenin et Cie.	Switzer
200	200	200	1900	Dr. Remy & Co.	Germany
325	325	325	1900	Oesterreichischer Verrein für Chemische und Metallurgische Produktion (Aussiger Verein)	Austria
333	333	333	1900	Chemische Werke vorm. P. Römer	Germany
422	422	422	1900	Yorkshire Dyeware & Chemical Company Ltd.	Britain
430	430	430	1900	Rob. Graesser, Chemical Works	Britain
453	453	453	1900	Semet -Solvay	U.S.
471	471	471	1900	Actiengesellschaft der Moskauer Chemische Fabrik, Farbwerke vorm. Meister, Lucius und Brüning (=Hoechst)	Russia

485	485	485	1900	Société Chimiques des Usines de Proushkow, SA (Pruszkow)	Russia
624	624	624	1900	“Farbwerke vorm. L. Durand, Huguenin et Cie. - Germany”	Germany
625	625	625	1900	“CIBA-Durand- France”	France
14	13	13	1901	Anilinfarben- und Extract- Fabriken vorm. Joh. Rud. Geigy	Switzer
329	329	329	1901	Miller & Hochstetter	Austria
468	468	468	1901	Jacques Wolf & Company	U.S.
522	999	522	1901	Chemische Fabriken Gernsheim-Heubrich AG	Germany
695	695	695	1901	Gesellschaft für Benzol- & Anilinproduction	Russia
215	999	215	1902	Chemicalienwerk Griesheim GmbH	Germany
345	344	344	1902	Chemische Fabrik Amersfoort	Holland
470	470	470	1902	Gesellschaft der Russischen Benzol-Anilinfabrik	Russia
478	478	478	1902	Mitjuchin	Russia
601	601	601	1902	“Fabriques de Produits Chimiques de Thann et de Mulhouse- Italy”	Italy
610	610	610	1902	Succursale française de l’Actien Gesellschaft für Anilinfabrikation (AGFA)	France
474	474	474	1903	Gebrüder Broemme	Russia
488	488	488	1903	W. Stoljarow/ W. Stoljaroff	Russia
583	583	583	1903	Wegelin, Tétaz & Co	Germany
681	681	681	1903	Brigonet père & fils & Gaubert	France
10	10	10	1904	G. Petersen	Switzer
20	19	19	1904	Geigy Aniline & Extract Co.	U.S.
472	472	472	1904	Aktiengesellschaft der Revaler chemischen Fabrik Richard Mayer	Russia
473	473	473	1904	Chemische Fabrik Trampedach & Cie. AG	Russia
628	628	628	1904	Maurice De Clerck	Belgium
629	629	629	1904	De Poorter, Lemaire & Co.	Belgium
633	633	633	1904	Nahrath frères	Belgium
635	635	635	1904	Geo. Reiffenstein	Belgium
675	675	675	1904	Société nouvelle de couleurs d’aniline de Pantin	France
680	680	680	1904	Société anonyme des établissements Eyken & Leroy	France
683	683	683	1904	Société Anonyme des Huiles minérales de Colombes	France
689	689	689	1904	Dr. Theodor Heidelberg/ Dr. Theodor Helvey	Austria
690	690	690	1904	Kayser & Bauer	Italy
693	693	693	1904	S. Meisel & Söhne	Russia
697	697	697	1904	Russische Gesellschaft für Fabrikation chemischer Producte	Russia
698	698	698	1904	Josef Rosenblatt	Russia

699	699	699	1904	Chemische Fabrik Brugg Actiengesellschaft, vorm. Dr. Zimmermann & Co.	Switzer
700	700	700	1904	F. Hodel	Switzer
345	345	345	1905	Farbwerk Amersfoort	Holland
512	512	512	1905	W.S. Simpson & Co. / British Aniline Dye & Chemical Works Ltd.	Britain
429	429	429	1906	Rexoll Ltd.	Britain
475	433	433	1906	Claus & Rée Ltd.	Britain
443	443	443	1906	Consolidated Color & Chemical Co.	U.S.
513	513	513	1906	Wülfing, Dahl & Co. A.G.	Germany
580	580	580	1906	Dr. Carl Feurstein	Germany
581	581	581	1906	Ph. Sittel	Germany
584	584	584	1906	Guido Roth	Germany
244	999	244	1907	Chemische Fabrik Buckau	Germany
434	434	434	1907	Claus & Co. Ltd.	Britain
137	137	137	1908	Joseph Verny	France
258	999	258	1908	Mersey Chemical Company	Britain
476	476	476	1908	Th. Handschin & Co.	Russia
630	630	630	1908	A. Wiescher & Co.	Belgium
634	634	634	1908	Lazard-Godchaux	Belgium
640	640	640	1908	J. Loukaitis	Greece
643	643	643	1908	Atteaux Dyestuffs & Chemical Co., Ltd	Canada
646	646	646	1908	American Aniline and Extract Co.	U.S.
647	647	647	1908	H. Behlen & Brother Inc.	U.S.
648	648	648	1908	Berlin Aniline Works	U.S.
653	653	653	1908	Monroe Aniline Works	U.S.
657	657	657	1908	Oakes Manufacturing Co.	U.S.
662	662	662	1908	George W. Gilbert	U.S.
665	665	665	1908	Anilinfarben- und chemische Fabrik Dr. Frei	Austria
676	676	676	1908	Laroche & Juillard	France
701	701	701	1908	J.H. Wolfensberger & Co.	Switzer
713	713	713	1908	Arthur & Hinshaw	Britain
718	718	718	1908	Cheetham Chemical & Colour Co.	Britain
721	721	721	1908	Low Moor Chemical Co.	Britain
726	726	726	1908	Thompson & Co.	Britain
232	232	232	1909	Meister, Lucius & Brüning (Ltd.)	Britain
354	354	354	1909	Chemische Fabrik E. Stickelberger & Cie.	Switzer
593	593	593	1909	Dr. Walther Wolff & Co. G.m.b.H	Germany
631	631	631	1909	Destrée & Co.	Belgium
661	661	661	1909	Swiss Colors (Colours) Co.	U.S.
20	20	20	1910	Geigy-ter Meer Co.	U.S.
179	179	179	1910	Société Anonyme des Etablissements Weiler-ter Meer	France
438	437	437	1910	Farbenfabriken of Elberfeld Co.	U.S.
452	452	452	1910	Benzol Products Co.	U.S.
477	477	477	1910	H. & M. Oesinger	Russia

578	578	578	1910	Kristiansands Elektrokemische Aktieselskab	Norway
673	673	673	1910	Fabrique de Produits Chimiques et Matières Colorantes Mabboux et Cammel	France
447	447	447	1912	W. Beckers Aniline & Chemical Co.	U.S.
585	585	585	1912	Düsseldorfer Farbenfabrik Anton Driesch G.m.b.H.	Germany
586	586	586	1912	"Farbenfabrik Oker", Saltzer & Voigt	Germany
587	587	587	1912	C. Haecker's Nachfolger	Germany
632	632	632	1912	Fabrique de Couleurs d'Aniline Lazard-Godchaux	Belgium
641	641	641	1912	J. H. Loukaitis & Co.	Greece
642	642	642	1912	Gloria	Rumania
645	645	645	1912	Canadian Anilines and Chemicals, Ltd.	Canada
649	649	649	1912	Actiengesellschaft der Anilinfarben- und Chemikalienfabrik Zgierz	Russia
650	650	650	1912	Aktiengesellschaft für Anilin- und Oelindustrie "Anilin"	Russia
651	651	651	1912	B. Heller & Co.	U.S.
652	652	652	1912	Howe & French	U.S.
656	656	656	1912	Aktien-Gesellschaft der Libauer Anilin-Fabrik	Russia
678	678	678	1912	Verny (Ch. Soulier succ)	France
679	679	679	1912	Noël Monthézin	France
682	682	682	1912	Jean Gaubert & Co.	France
684	684	684	1912	Usine du Nord	France
692	692	692	1912	Libauer Farb- und Gerbstoffwerke vorm. H. Oesinger	Russia
702	702	702	1912	Bubeck & Dolder	Switzer
703	703	703	1912	Emil Berger	Switzer
384	384	384	1913	Schoellkopf Aniline & Chemical Company (II)	U.S.
438	438	438	1913	Bayer Co.	U.S.
462	462	462	1913	Frank Hemingway Co	U.S.
498	498	498	1913	James Robinson & Co., Ltd.	Britain
520	520	520	1913	Ernst Zobel & Co	U.S.
589	589	589	1913	Chemische Werke Guido Roth G.m.b.H.	Germany
608	608	608	1913	"Wilhelm Brauns-Russia"	Russia
719	719	719	1913	Graham & Cope Ltd.	Britain
14	14	14	1914	J. R. Geigy A.G.	Switzer
133	133	133	1914	(L.) Durand, Huguenin (et Cie) A.G.	Switzer
444	444	444	1914	Hub Dyestuff & Chemical Company	U.S.
448	448	448	1914	Ault & Wiborg Company	U.S.
461	461	461	1914	Goodyear Tyre & Rubber company	U.S.
685	685	685	1914	Succursale Farbwerke Mühlheim vorm. A Leonhardt & Co.	France