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PAINTS AND THEIR COMPOSITIONS

By E. F. LADD and C. D. HOLLEY

Any farmer, teacher or student in the State may have this Bulletin
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PAINTS AND THEIR COMPOSITION.

By E. F. Ladd and C. D. Holley.

Inasmuch as only a few of the brands of paint offered for sale in the state were reported upon in Bulletin No. 67 and this fact led to some misunderstanding on the part of the consuming public it seemed desirable, after the Court decision, declaring the state paint law constitutional, to further investigate the subject of paints and to examine as far as possible all brands known to be on sale in the state or which, from time to time, are being shipped into the state thus bringing the entire information before the consumers who are constantly writing in order to know with regard to the composition of the various paints not previously reported upon.

Under the date of February 26, 1906, there was issued by this department the following circular notice:

The North Dakota paint law has been declared constitutional and valid. The decision was rendered February 24, by Judge Amidon of the United States district court. The paint law is, therefore, now in force and it is expected that the manufacturers and jobbers who ship paints into the state from this time on will comply with the requirements of the same and label the products where such labels are found necessary.

We ask the manufacturers and jobbers who now have paint in the state to take steps to have the same properly labelled and in order to tide over the present conditions we allow, for such paints, an exemption until April 1, 1906, so that suitable labels may be prepared and furnished to the dealers. This department stands ready and willing to give every assistance possible to those who are interested and desire our aid. A label in form like the following will, by this department, be deemed as complying with the spirit of the law:

Per cent.

White lead.....	18
Zinc oxide	35
Barytes	25
Calcium carbonate	22

Together with the necessary coloring matter to produce the desired tint.

It is assumed, of course, in the above that the coloring matter, when so labelled, is a product which is commercially pure. The liquid portion should also be labelled where necessary in order to show the proper ingredients. Water, when present in quantities not to exceed 15 per cent, may be considered as incidental. Where western zincs are used that do not carry more than 5 per cent of lead sulphate, the same may be properly considered as commercial zinc oxide or the term "western zinc" might be employed. The terms "leaded zinc" and "sublimed white lead" will be deemed as sufficient designation of these ingredients on the label.

Feb 26.

(Signed) E. F. Ladd, Commissioner

PAINT LAW TO BE ENFORCED.

I am glad to be able to say that the majority of paint manufacturers, especially those who do a large business in the state, have expressed their willingness to comply with the requirements of the law, as interpreted in the paint circular and have so prepared their labels. Naturally, there would be some confusion in the placing of labels on the stock in the state but in general this matter has been well handled by the manufacturers and there is little to be complained of in this direction.

It is believed that of each of the brands of paints generally sold in this state at least two shades have already been analyzed and the results are given in the following pages. In most instances there is reported upon an outside white and one of the grays although it is impossible to always secure the same shade from the different brands. As far as possible a pearl, or silver gray, or lead color has been selected for examination. This investigation has necessitated a large amount of analytical work but in every instance the work has been carefully checked up in order that no injustice should be done any manufacturer and a report of the results of our analyses as soon as completed have been forwarded to the producer where their address was given upon the can. In but two or three instances have there been complaints of the accuracy of our results and check analyses

have confirmed our findings, and at times led us to believe that the product as purchased on the market from the stock in hand did not represent the product as now being produced by the company. In other words the manufacturer has changed his formula since the law was enacted.

PAINT LAW.

It is held by this department that every mixed paint of whatever description, white leads, paste paints, floor paints, carriage paints, barn paints, etc., to be offered for sale in the state must conform to the requirements of the state law. It is true that the law as enacted by the last session of the legislature is somewhat ambiguous but the department has tried to interpret it liberally and in the spirit of fairness to the consuming public and producer. Of course, it is not always easy to determine just what the spirit of the law would be in a particular case without knowing more definitely the range of composition for the various products which enter into the manufacture of paints. It is believed that Section 1, of the paint law might properly be divided under four heads and that there should be introduced a section more fully defining paints.

WATER IN PAINTS.

We emphasized strongly in Bulletin No. 67 the evils of the presence of a large amount of water in paints and showed that some of the paints upon the market in the liquid portion contained as high as 24 per cent. It is not our purpose to repeat what was said at that time but refer the reader to the original. We may, however, in passing state that paint materials, linseed oil, various pigments and other products that enter into the composition of paint must naturally carry a small amount of hygroscopic moisture. We have, therefore, held that paints which contain not to exceed 15 per cent of water in the fluid portion are to be considered as pure, in this respect, and that such water is to be classed simply incidental to the process of manufacture. I do not mean by this that the paint might not have been produced without any water or that the presence of the water has added

anything of value to the paint. This feature we are not now considering. In our late bulletin some paints were reported to contain from 0.1 to 0.5 per cent of water in the liquid portion. Now, this water was not to be considered as having been employed by the manufacturer but water naturally present in the pigment and fluid menstrum from which the paint was produced. In making a complete analysis all these constituents must be taken into consideration in determining its composition. Paints, therefore which contain a small fraction of a per cent as indicated above are not to be considered as having had water added to them. I feel called upon to make this statement since certain representatives, of paint manufacturers, have misrepresented and distorted the facts, as given by this department, and in many instances this has been done willfully, and to the disgrace of the house lowering itself either directly or through the agency of its employees to such a policy.

Paints containing water may be divided into two groups: those which contain less than four per cent., and those which contain nine or more per cent. It is significant that the paints should divide so sharply in per cent. of moisture present, and it would indicate clearly that those containing a large per cent. have the added water for the purpose of cheapening the cost of production, whatever may be said with regard to the use of the small amount of water in some mixed paints.

In the following table I have compiled the data showing those paints which contain a high per cent of moisture, and it will be noted that the O. L. Chase paint number 170, is repeated twice, giving in the first place the per cent. of moisture in the paint when oil has been mixed with it ready for use, and again, giving the per cent of moisture as it occurred in the original package without the addition of the oil, and just as it was received from the manufacturer:

St. No. Brands Containing High Per Cent. of Water.

		Per cent. Water.
170	O. L. Chase, Mixed Paint.....	Tint 7.4
66	Tower Brand Mixed Paint.....	White 9.1
175	Ajax Brand Mixed Paint.....	White 9.3
123	Town and Country Mixed Paint.....	White 10.0
88	N. B. & C. St. Paul Paint.....	White 10.3
185	Tower Brand Mixed Paint.....	Tint 11.3
167	"Made for You" Paint.....	Tint 11.8
184	Star Brand Mixed Paint.....	Tint 13.7
150	Gold Medal Paint, Woolworth & Co.....	Tint 13.9
183	Seroco Brand Mixed Paint.....	Tint 14.5
169	Champion Mixed Paint.....	Tint 15.0
173	Pitkin's Premium Paint.....	Tint 15.7
154	Diamond Brand Mixed Paint.....	White 16.1
155	Diamond Brand Mixed Paint.....	Tint 16.7
55	Noxall Brand Mixed Paint.....	White 17.0
153	Detroit W. L. Co's. Liquid Paint.....	Tint 17.2
67	Star Brand Mixed Paint.....	White 18.0
159	Champion Mixed Paint.....	White 18.4
114	Town and Country Mixed Paint.....	Tint 18.6
158	Golden Rule Cottage Colors.....	Tint 20.5
170	O. L. Chase Mixed Paint.....	Tint 20.9
56	Perfecto Mixed Paint.....	White 22.0
174	Gold Medal Paints Morrison Pt. Co.....	Tint 22.5
48	Seroco Brand Mixed Paint.....	White 24.0

RELATION OF VEHICLE TO PIGMENT.

One may fairly ask what should be the relation of the fluid portion to the pigment in paints. To answer such a question, which has frequently been put to us by the people of North Dakota, one should have a complete knowledge of the composition of the various paints and shades as found on the market. Then it is probably true that the relation would be found to vary somewhat according to the shades employed. The white shades contain a larger proportion of pigments to the menstrum than do the darker shades but from such data as we have gathered from the paints thus far examined it may be said that as a rule in the better paints,

the fluid portion of the paint, ranges from 35 to 40 per cent of the total weight thus leaving from 60 to 65 per cent for the pigment. Where paint is sold for \$1.60 per gallon when linseed oil can be had for \$40 per gallon there is more profit in introducing a larger proportion of oil than of white lead and one might in this way cheapen somewhat the cost of production by thinning the paint to an undesirable extent.

WHITE LEADS.

A number of commercial brands of white lead, found in the state, have been examined and outside of the recognized makers of white leads not one has been found which did not contain a large amount of inert matter and in some instances they have been found to contain no white lead whatever. In this connection I would especially call attention to Wier's (Improved) Bavarian White Lead, the American Pure white lead, Globe white lead, Michigan Seal white lead, Columbian white lead and United States white lead together with a number of others not labelled as to the name of the manufacturer but reported upon in this bulletin. We may take for example Bavarian white lead made by D. T. Wier White Lead Co., of St. Louis, the composition of which is indicated by the following:

	Per cent.
White Lead.....	00.00
Lead sulphate.....	5.07
Zinc oxide.....	25.00
Barytes.....	69.70
Undetermined Matter.....	0.23
	100.00

The D. T. Wier White Lead Co., in a letter under date of March 17th which bears the signature of the president of the company state as follows:

"We will say in answer to your favor of the 15th, that since the North Dakota paint law went into effect, we have withdrawn from the state and do not propose to sell any goods in North Dakota so long as that law is operative. Therefore, we have no labels and will not have any labels that are adapted to the wants of North Dakota."

They further say in the same letter, "While writing on the subject, we cannot see that the law in question has benefitted anyone except two trusts who control two pigments specified in the law. We have been about a quarter of a century perfecting our method of grinding and our formula and we do not propose to advertise that to the general public as required by the law of your state."

The analysis above would indicate the wisdom of the firms' decision.

The reader is referred to similar statements with regard to the composition of other white leads reported upon in this bulletin and it would seem that there can be no good reason for classing this product as white lead, in fact, their further sale in the state under the label of white lead will make it necessary for this department to begin prosecution against parties who may be handling this class of paints.

ABUSES BY MANUFACTURERS AND THEIR AGENTS.

Since the publication of Bulletin No. 67 and the enforcement of the paint law there has sprung up, on the part of certain manufacturers and their agents, abuses which can in the future reflect no credit upon those who have taken part in promoting these abuses. The analyses as set forth in Bulletin No. 67 have been used by representatives of certain houses in a way that is entirely unjustifiable. The course pursued in some instances has been such as to make it necessary for this department to take notice of the fact and to demand that a change in policy be made at once on the part of the houses or agents under consideration. While doing everything possible to cover up the short-comings of their own paints, they have distorted the facts with regard to that of their competitors when it would have been far better for them had they attended to their own business and emphasized the good qualities, if there were any, in their own paint and left that of their competitors alone.

A house which either through its own representatives or agents resorts to a course of this kind is not above suspicion. Again, when a house informs its agents that it is their business to sell paints and not to know the composition of the same, that the composition of the paint is the particu-

lar business of the factory to look after it cannot be expected that these representatives will do other than claim their paints as containing the constituents which the public have been led to believe, and, often by the representations of these same houses, to be the true basis for all the best grades of paint. This policy is and has been pursued by some houses and at the present it is tending to wreck the reputation of the paints which they have been handling. Worse than all this is when a house prints deliberately upon its labels that this product is composed of pure white lead and zinc oxide and the paint is found to contain not a trace of white lead. What is to be said of the business policy of such firms? Have the public not a right to be suspicious of anything which they may handle or of the business methods of such a concern?

SHORT MEASURE.

Not only is there a wide variation in the composition of paints but the paints of certain houses are frequently short in measure, sometimes to the extent of 10 to 13 per cent. Thus, a man paying for a two quart can of some of the mixed paints may receive but 1.75 quarts thus losing 12½ per cent which gives a very considerable profit to the benefit of the manufacturer of this paint as compared with the manufacturer who gives full measure. We have, therefore, in the following pages tried to give the true measure of each and every sample of paint which has been examined by this department. It is believed that this publicity will have a tendency to force all manufacturers to bring the standard of measure more nearly to what it should be.

SHORT WEIGHTS OF WHITE LEADS.

All the white leads and so-called white leads, examined by this department, have been found to be short weight. That is, the kegs supposed to contain 12½ pounds will actually contain in each eight kegs which should have shown 100 pounds only 83 to 89 pounds. As showing to what extent the different so-called white leads actually varied and fell short in weight I give the following list.

	Assumed weight lbs.	Net weight lbs.	oz.
Michigan Seal.....	50	46	0
Crown White Lead.....	12½	11	13
Railway White Lead.....	12½	10	6
Red Seal.....	12½	10	7
Red Seal.....	25	21	12
Michigan Seal.....	25	22	7
*Columbia White Lead.....	12½	10	0
United States.....	12½	11	0

From an inspection of the above table it will be observed that none of these products contain an amount which the purchaser assumes to be present. It is true that for a number of years this condition has prevailed but in making corrections of evils now existing it seems a good time to place this product on a basis of the true net weight. Why should a man pay for 12½ pounds when he receives but 10½? It is claimed that this additional price pays for the pail or keg but the man who is calculating on the amount of material is misled and has a right to expect that the product shall be labelled truthfully not only with regard to the actual composition, but to the weight as well. While the paint law does not apply to weights under the general law of the state it is believed there is sufficient ground for demanding that this change be made on the part of those who would send their products into North Dakota.

RELATION OF LEAD TO ZINC.

The question is generally being asked what should be the relation of the lead to the zinc in the pigment of our mixed paints. An inspection of the analyses of the various paints will show that the per cent of lead varies from nothing to about 60, while the proportion of zinc in the mixed paints ranges from 20 to 80 per cent. The practical paint

*There has been some considerable leakage of oil from the package.

men seem to differ with regard to the proportion of lead to zinc in mixed paints but some of the best of these from whom we have gathered information would indicate that for outside house paints, not less than two-thirds of the pigment should be in the form of lead. This would leave one-third zinc. It would seem where inert material is substituted as though the proportion should not exceed that which is employed in the form of zinc or one-third of the total. It is true, however, that there are but few paints on the market which contain more than 50 per cent of white lead. Just what the best proportion is can only be determined by actual experiments and investigation.

To what extent the leading manufacturers have been influenced by actual experiments in determining the proportions of lead to zinc or, to what extent the desire to cheapen the cost of the product has been a factor in determining the relation of lead to zinc in paints, is hard to determine. Again, the fact that the manufacturers have been forced to meet competition with cheap and spurious products may have made it necessary that they produce a product not as good as they knew how to, but as good as the public will pay for. Already there is a marked improvement and the proportion of white lead has been much increased in several well-known brands. This would certainly seem to indicate that paint manufacturers recognize the superior value of white lead as the basis of paints.

In looking over the analyses as given in the following pages, one is surprised to note the number of paints that contain inert material in excess of 10 or 15 per cent. Certain manufacturers have maintained that the presence of a small amount of inert material, carbonate of lime, etc., was desirable for the purpose of neutralizing any acid in the oil or other paint ingredients thus insuring better protection to the paint and preventing the deterioration of the oil. None have, however, maintained that the quantity need exceed, for this purpose, 5 per cent and many have indicated that not more than one or two per cent need be employed. It has also been maintained that the presence of a small amount of inert material prevented the settling of the pigment in the can and the consequent solidifying which some-

times take place. None, however, have maintained that more than 10 per cent was necessary for this purpose. Certainly, it cannot be said that from 30 to 70 per cent are essential, therefore the substitution of a larger amount than 10 per cent must be either because it produces a paint equal to or superior to white lead and zinc as indicated above or else it is used as a cheapening agent. It is not our purpose to discuss the relative merits of these several paint constituents at this time but it is a matter of more than passing interest to know which of the paints contain more than 15 per cent of such inert material as chalk, barytes, silica, etc. I have, therefore, arranged in order of per cent in the following table all those where the amount is in excess of 15 per cent.

BRANDS OF PAINT HAVING 15 PER CENT. AND OVER

OF INERT MATERIAL.

Station Number		Per cent
151	N. B. & C, St. Paul Paint	16.4
66	Tower brand Montgomery Ward & Co.....	19.1
152	B. P. S. Patterson & Sargent	20.0
166	Armstrong's Mixed Paint.....	20.1
175	Ajax Mixed Paint.....	20.6
165	Armstrong's Mixed paint O. W.....	20.9
177	Parian Brand Farwell, Ozum, Kirk.....	21.1
153	Detroit W. L. W's Liquid paint.....	21.2
185	Tower Brand Mixed Paint.....	25.3
105	Lucas & Co.'s Gloss Paint.....	25.7
108	Best Prepared Pt. Heath & Milligan.....	26.0
173	G. W. Pitkin's Premium Brand.....	26.1
169	Champion, Detroit W. L. Works stone color....	27.3
160	Best Prepared Pt. Heath & Milligan French gray	29.6
60	Lion Brand St. Paul W. L. & Oil Co.....	29.9
59	Green Seal.....	31.1
142	Breinig's Lithogen Silicate Paint.....	33.2
57	Favorite House Pt. Masury & Son.....	34.5
56	Perfecto, Enterprise Pt. Co.....	37.6
67	Star brand U. S. Pt. Co.....	41.1
55	Noxall, Enterprise Pt. Co.....	42.9
159	Champion Detroit W. L. W's. O. W.....	44.7
150	F. W. Woolworth's Gold Medal.....	46.3
49	Ruchter's Durable paint.....	46.9
174	Gold Medal Morrison Pt. Co.....	47.3
183	Seroco Mixed Paint.....	47.6
184	Star Brand.....	48.6
48	Seroco Paint Co.....	49.9
158	Golden Rule Cottage Colors.....	49.1
9	Peoples' Paint.....	53.3
170	O. L. Chase.....	55.2
154	T. M. Roberts' Diamond brand O. W.....	68.2
155	T. M. Roberts' Diamond brand gray.....	69.4
167	Parker Perfect Pt. Co.....	70.6

COST OF PAINTS.

Some of the paints furnished by catalog houses, and others who do business of a similar nature, cost to produce less than one-half that for good paints even though the good paint contains a considerable percentage of inert material, that is, the pigment in one of these catalog house paints per gallon has been estimated to cost 12½ cents while in another paint the pigment in each gallon would cost not less than 57 cents on the same basis of estimation. There are other cheap paints costing less to produce even than the one indicated above and, too, in the liquid portion there is even a wider variation in the cost of the two classes of paints.

Water and benzene are not to be classed in cost with good turpentine and linseed oil. Neither are they to be considered as adding anything of virtue to the paint. Three pounds of sal soda, one and one-half pounds glue, one and one-half pounds of borax and two pounds of sugar of lead in 50 gallons of water when mechanically combined with the pigment to the extent of 12 to 24 per cent of the fluid of the paint might make a good profit for the manufacturer and furnish a "dope" deceptive to the consumer but nevertheless it is a shameful fraud. It would not be strange, however, if this did not fairly represent some of the "jelly-in-the-pail" like paints.

OCHRE AND PRIMING.

Many cheap ochres are employed as tinting agents in certain paints. It is a question whether the presence of such ochres, when found in paint, is not to be classed as a cheapening agent rather than a true coloring matter of commercial purity. The introduction of from 10 to 20 per cent of ochre into a paint which is one-half calcium carbonate or other foreign constituents can, in my judgement, only be looked upon as a cheapening agent, especially when, after the addition of this amount of tinting matter, it still becomes

necessary to re-enforce the color with a more concentrated tinting product, as is true in some paints which we have examined. What constitutes a commercially pure ochre is a difficult problem to determine, in the present state of our knowledge. It seems necessary that we make an examination of ochres in order to determine their composition and range of variability.

The fact that some one may choose to put upon the market a product, which is sold under the name of ochre, does not of necessity make the product what is claimed for it. Similar statements may be made with regard to the composition of various other products which are used in the preparation of paints. To call a product silica, is to assume that it is possessed of a definite composition but when this product is found to be made up of a larger proportion of foreign constituents than of true silicates it seems that the same end had been accomplished as had been sought by those who have introduced calcium carbonate or other cheapening agents or inert constituents in the place of white lead or zinc oxide.

Of one thing, however, we feel confident and that is that the average American ochre, as employed in paint manufacture at the present time and especially for the purpose of priming, cannot be too strongly condemned. It has not the virtue that has been claimed for it. In the judgment of the writer, ochre as now furnished should never be used on a good building as a priming coat. The purest white lead and the best linseed oil, or, in lieu of these, the highest grade of mixed paint well thinned down had far better be employed in priming a house than to use ochre.

In a recent issue of the Painters Magazine, in discussing ochre, the following statement is made which is of interest at this time.

"Yellow ochre which is, to use a common phrase, simply yellow clay colored by hydrated ferric oxide. French ochre to pass inspection by the various service department scientists of the U. S. Government must be of good bright color, contain at least 20 per cent. sesquioxide of iron and not over 5 per cent. of lime in any form"

SIZE OF CAN.

The size of the can does not vary greatly for the leading manufacturers of standard paints. There is, however, a noticeable difference in the size of the cans used by the leading catalogue houses doing business in the State. Not only are these paints as a rule notoriously cheap and inferior products, but one does not secure full measure as shown by the following:

	Size of Can.	Contents.	
		Quarts.	Quarts.
185 Montgomery Ward & Company,.....	1.91	1.91	1.82
184 Montgomery Ward & Co (U. S. Pt.CO.)	1.94	1.94	1.76
183 Sears, Roebuck Co. (Seroco).....	1.95	1.95	1.70
154 T. M. Roberts Company,.....	1.95	1.95	1.75
155 T. M. Roberts Company,.....	1.95	1.95	1.92
170-1 Chase,	3.90	3.90	3.41

It will be observed in the column headed "contents" above that there is a very material shortage and, in the case of Chase, the paint as purchased instead of getting the full gallon one actually receives 3.41 quarts. Here is certainly a good margin of profit for the paint producer, without taking into consideration the character of the product which enters into the can.

VOLATILE OILS.

One cannot study the analysis in the following pages without having his attention called to the wide variation of the amount of volatile oil and driers which are used in the several paints. It is noticeable that in many of the paints where the best driers are used, from 4 to 7 per cent. seems to meet the wants of the manufacturer in the paints they send out.

A prominent paint chemist commenting upon the composition of certain paints stated as follows: "Both paints con

tain an excess of weak drier, four per cent. of strong drier being sufficient for a heavy bodied paint."

Some of the paints reported upon in the following pages show from 15 to as high as 30 per cent. of the liquid portion in the form of drier or volatile oils, and usually it is found that this is a very cheap product made up largely of benzine and, probably in some instances, of rosin driers.

STATUTORY PAINTS.

The question is frequently asked by our correspondents as to which paints comply with the North Dakota law so as not to require labelling. This is not always an easy matter to answer, or at least until all of the shades have been analyzed. In fact, there is probably no manufacturer who will not find it necessary to label with regard to composition some of the dark shades usually made upon other than a lead base.

Of the paints which we have found on sale in North Dakota during the past three months and not requiring to be labelled as to composition or, in other words, made from the statutory pigments, lead and zinc with pure tinting colors, the following brands may be mentioned with the per cent of white lead, the capacity of the can, and the weight per gallon:

Station No.	Brand.	Per cent of White Lead	Quarts in Can	Weight Per Gal. Lbs. Oz.
135	Minnesota O. P. Co.	.50	1.01	16. 3
86	Blood's Paint.	.30	0.98	15. 9
172	Monarch	.40	0.96	13-12
149	Horseshoe	.40	0.94	15. 8
112	Gilt Edge (New)	.50	1.03	16. 0
125	Atlas Paint (New)	.40	1.06	14-12
176	Lion (New)	.50	1.01	16. 8
147	Devoe's	.30	0.95	13-10

A few other paints may possibly be added to the above

list not, as yet, on sale in the State, since their formulas have been changed.

In the above list the Atlas, Gilt Edge, and Lion Brands are being made under a new formula to comply with the requirements of the North Dakota Law.

Under the new formula adopted for the Monarch paint it may be expected that this paint will then take the second place, following the Minnesota. It is undoubtedly true that several other paints, now that there is afforded them some protection and a demand has developed, for a lead and zinc paint with pure linseed oil and turpentine driers, will find their way into the State and displace some of the cheap and inferior products handled by catalogue houses, department stores, and advertising concerns.

COST OF PAINT PIGMENTS.

The cost of the various pigments used is a question of great importance with the paint manufacturer, and the following table of quotations prepared from recent paint journals will be of interest:

Name of Pigment.	Price per 100 lbs.	
White Lead.....	\$6.38	\$6.50
Sublimed White Lead.....		7.00
Zinc Oxide.....	4.50	5.00
Zinc Lead White.....		4.25
Lithopone	3.75	7.00
Barytes	.65	1.25
Whiting (Calcium Carbonate).....	.43	.50
Paris White, Eng. Cliftonstone (Calc. Carb.)...	.75	1.00
Magnesium Silicate.....	.75	1.50
Silex, Silica.....	.60	2.00

**TRADE NAMES FOR SOME OF THE PRINCIPAL PAINT
PIGMENTS WITH CHEMICAL NAMES.**

Trade Names	Chemical Names.
Barytes.....	Barium sulphate
Blanc Fixe.....	Precipitated barium sulphate
Corroded Lead.....	Basic lead carbonate
English white.....	Calcium carbonate
Gypsum.....	Calcium sulphate hydrated
Lithopone.....	A combination of barytes, zinc oxide and zinc sulphide in various proportions.
Marble dust.....	Calcium carbonate
Ochres.....	Silicate of Alumina colored with ferric oxide
Paris white.....	Calcium carbonate
Ponolith.....	Similar to Lithopone
Princess Mineral.....	Oxide of iron
Silex.....	Silica
Silicate of Magnesia.....	Magnesium silicate, a natural earth product.
Silver White.....	Silica
Spanish White.....	Calcium carbonate
Sublimed White Lead.....	Apparently a basic lead sulphate carrying a small portion of zinc oxide.
Terra Alba.....	Calcium sulphate
Tuscan Red.....	Oxide of iron
White Lead.....	Basic carbonate of lead
Whiting.....	Calcium carbonate
Zinc Lead White.....	Composed of about equal parts lead sulphate and zinc oxide
Zinc White.....	Zinc oxide
Zinc Oxide.....	Zinc oxide
Zinc Oxide (leaded).....	Zinc oxide containing a varying amount of lead sulphate.

ANALYSIS OF WHITE LEADS.

Station No. 143. Michigan Seal White Lead.

Acme White Lead & Color Works, Detroit, Mich.

"Acme Quality."

Guarantee. "We guarantee our Michigan Seal Brand of White Lead to be superior to any white lead in the market as regards opacity or body covering capacity. It is also extremely durable, possessing in this important particular great merit. For whiteness and fineness of texture it will be found unsurpassed."

Assumed size of steel keg.....	25 lb
Gross weight.....	25 lb 8 oz
Net weight.....	22 lb 7 oz
Shortage on basis of 100 lb is.....	10 lb 4 oz

Analysis of pigment.	Per cent.
White lead.....	37.51
Lead sulphate.....	7.84
Zinc oxide.....	25.87
Calcium carbonate.....	20.36
Barytes, Silica and undetermined.....	8.42

Total 100.00

Station No. 162. Michigan Seal White Lead.

Assumed size of steel keg.....	50 lb
Gross weight.....	51 lb
Net weight.....	46 lb
Shortage on basis of 100 lb is.....	8 lb

This product is, like all the white leads so called, short in weight. It is not a white lead but a mixture of various paint ingredients and therefore falsely labelled.

Station No. 163. Crown White Lead.

Bradley & Vrooman Co., Chicago

"We conform to the laws of the state of North Dakota by stating that Crown White Lead is made as follows:

Lead (sulphate)	60 per cent.
Zinc (oxide)	40 per cent.
Total	100 per cent.

Assumed size of keg	12½ lbs.
Gross weight	13 lbs. 12 oz.
Net weight	11 lbs. 13 oz.
Analysis of Pigment	Per cent.
Sublimed lead	61.19
Zinc oxide	38.81
	100.00

This product is not white lead but is made from sublimed lead and zinc oxide. The producers have informed us that the paint is to be sold under the label of "Crown White" to which there can be no objections when labelled to show its composition.

Station No. 37. White Lead, Diamond Brand.

Carter White Lead Co., Chicago.

"Guaranteed Strictly Pure White Lead. This package contains 92 per cent carbonate of lead, 8 per cent linseed oil. The Carter White Lead Co will pay \$100 and the cost of analysis for the detection of any adulteration in this or any other package bearing this brand."

Stated weight	2 lbs.
Net weight	1 lb. 15.5 oz.
Shortage 15 per cent	

Analysis of Pigment	Per cent.
White lead	90.28
Undetermined	0.72
	100.00

Station No. 126. White Lead, United States Brand.
Enterprise Paint Mfg. Co., Chicago.

"United States White Lead is good white lead."

Assumed size of keg	12½ lbs
Net weight	11 lbs
Shortage on the basis of 100 lbs. is	12 lbs.
Analysis of Pigment	Per cent.
White lead	60.00
Lead sulphate	13.30
Zinc oxide	20.03
Calcium carbonate	7.98
Barytes	52.46
Undetermined	0.21
	100.00

This product is 12 per cent short in weight, the label reads "United States White Lead is good white lead." But the United States White Lead contains no white lead whatever, to call it white lead is, to say the least, a misnomer. It can not legally be called white lead, and it must bear a label showing its composition.

Station No. 164. Railway White Lead.

Heath & Milligan Mfg. Co., Chicago.

"Whitest. Most Opaque, Most Durable."

Assumed size of keg	12½ lbs.
Gross weight	12 lbs. 10 oz.

Net weight.....	10 lbs. 6 oz.
Analysis of Pigment	Per cent.
White lead	38.95
Lead sulphate	4.81
Zinc oxide	33.53
Calcium carbonate	19.43
Barytes & Silica.....	3.18

Total 100.00

While this might be called "Railway White" it cannot be said to be white lead. It is short weight and 60 per cent other than white lead.

Station No. 141 Columbia White Lead.

Iowa Paint Mfg. Co., Fort Dodge, Iowa.

"In Pure Linseed Oil."

Assumed size of keg.....12½ lbs.

*Net weight 10 lbs.

Analysis of Pigment Per cent.

White lead	55.03
Lead sulphate	00.00
Zinc oxide	15.21
Barytes and silica.....	29.33
Undetermined	0.43

Total 100.00

This paint like the other whites is short weight and contains 45 per cent of adulterants.

Station No. 182. Longwear Tinted Lead. White

Longwear Tinted Lead Co., St. Louis Mo.

Analysis of Pigment.

Pigment. Per cent.

White Lead 00 00

*Considerable oil had escaped from package

Lead Sulphate	8.32
Zinc Oxide	42.05
*Barytes	41.43
Calcium carbonate	8.04
Undetermined	0.16
	100.00

The above product can in no way lay claim to being a white lead. It is falsely labelled and wholly adulterants.

Station No. 110. White Lead, Red Star Brand.

Senour Mfg. Co., Chicago.

Analysis of Pigment. Per cent.

White lead	97.72
Lead sulphate	2.00
Undetermined	.29

Total 100.00

Station No. 156. Red Seal Brand White Lead

St. Louis Lead & Oil Co., St. Louis, Mo.

"Strictly Pure White Lead"

"The contents of this package is composed of 8 per cent of linseed oil, 92 per cent carbonate of lead. The St. Louis Lead and Oil Company will pay \$100 and the cost of analysis for the detection of any adulteration in this or any package bearing their brand of strictly Pure Lead."

Assumed size of keg.....12½ lbs.

Gross weight.....12 lbs. 8½ oz.

Net weight.....10 lbs. 7 oz.

Shortage on basis of 100 lbs. is.....16½ lbs.

Station No. 157. Red Seal Brand White Lead.

Assumed size of keg.....25 lbs.

Gross weight25 lbs. 1 oz.

*Includes a very small percentage of natural silica.

Net weight.....	21 lbs. 12 oz.
Shortage on basis of 100 lbs is	13 lbs. 12 oz.
Composition	Per cent.
Linseed oil	8.05
Water	0.47
White lead	91.43
Total	100.00

Station No. 178. Red Seal White Lead

From National Lead Co

"Packages all marked"

Stated Gross weight	317 lbs.
Stated weight of keg.....	12 lbs.
Weight of keg as actually determined	19 lbs.
Shortage	5 lbs.

There is a shortage in weight for all these white leads. They should either be made full weight or the net weight added. The customs of giving gross weight for net in these pails may be old but it is not just to the purchaser.

Station No. 129. Bavarian White Lead (Improved.)

D T Weir White Lead Co., St. Louis, Mo.

Guarantee. "Weir's Bavarian White Lead (improved) is guaranteed to be as white and finely ground as any lead made. It is also guaranteed to wear 50 per cent longer than any "strictly pure white lead" or other make of lead. The greater bulk of Weir's Bavarian White Lead (Improved) gives 22 per cent increased spreading capacity, which added to the wonderful durability which it produces, makes it by far the most economical paint on the market. We will forfeit one hundred dollars (\$100.00) to any charitable institution in St. Louis, if after comparative time test, Weir's Bavarian White Lead (Improved) does not outwear any white lead made."

Analysis of Pigment.	Per cent.
White lead	00.00
Lead sulphate	5.07
Zinc oxide	25.00
Barytes	69.70
Undetermined	0.23
Total	100.00

In a little booklet entitled "Points on Paint and Painting" by D. T. Weir White Lead Company, we find they do not claim Wier's Bavarian White Lead to be made from strictly pure White Lead. Here is what they say on page 21: "White Bavarian Lead is not strictly pure, perfectly pure or any other pure, but it is a combination of pigments ground in linseed oil to the usual white paste form. The words white lead are used as a descriptive term because they are designations used by the public for a white paste paint material." They do, however, endeavor to lead the public to believe that it is, in part, white lead, as is shown on page five of the same booklet which says: "The White Lead used in Wier's Bavarian White Lead is corroded by the old Dutch process, and is then pan-dried."

"This lead is then ground in the best linseed oil with other perfectly dry inert pigments which do not have the least effect on linseed oil. By this process all danger of damage to the linseed oil is removed, and we have left in Wier's Bavarian White Lead the most durable White Lead made."

There is, therefore, no mistake as to what the Company would have the consumer believe with regard to the composition of the paint, and they have the right, therefore, to assume that this product is in part, at least, white lead. Reference to the analysis given above shows that this product contains no white lead whatever. The Company are therefore, guilty of intentionally misleading and deceiving the public in their statements as well as in the name which they have selected. A product of this type cannot be sold under the name of "White Lead" without subjecting the dealer to liability of prosecution for deception and fraud.

Station No. 179. Sublimed White Lead

Fischer Lead Co., Joplin, Mo

Approximate composition as stated by the manufacturers is as follows...

Lead sulphate	75 per cent.
Lead oxide	20 per cent.
Zinc oxide	5 per cent.

The lead sulphate and lead oxide being apparently combined as a white oxysulphate. The zinc oxide is incidental to the manufacture.

Analysis of sample	Per cent.
Lead sulphate	75.02
Lead oxide	18.48
Zinc oxide	6.22
Silica & Alumina	0.28
	100.00

ANALYSIS OF MISCELLANEOUS WHITE LEADS.

Station No.	BRAND	Net Weight	White Lead	Lead Sulphate	Zinc Oxide	Barium	Calcium Carbonate	Silica	Clay	Undersized
10	Globe White Lead	13.5	9.98		12.00	76.28	1.10			0.64
11	Gold Seal White Lead, Minn. Lumber Oil Paint Co	15.4	64.73		3.60	30.43	0.76			0.48
12	Park White Lead	14.8	4.69		12.50	75.72	5.89	0.67		0.53
24	American White Lead, Premium brand	15.0	3.34		8.96	72.35	4.52		10.83	
52	White Lead		54.69		17.38	25.57				0.36
134	American Pure White Lead Chicago, 1 lb	14.2	0.00	3.29	6.90	89.81				
136	Mississippi White Lead 1 lb 14 oz		10.68		20.03	69.28				
161	American White Lead 15 oz		5.31	6.37	13.68	74.25				0.39

None of the above products are entitled to be called White Lead. Only one bears the name of the company putting out the product. All must needs be labelled to show their composition before they can be sold, legally, in this state

Station No. 131. "Selected" Zinc Oxide.

New Jersey Zinc Co., New York.

Composition	Per cent.
Lead sulphate.....	0.31
Zinc Oxide.....	99.69
Total	100.00

Station No. 133. XX Zinc Oxide.

New Jersey Zinc Co., New York.

Composition	Per cent.
Lead sulphate.....	0.03
Zinc sulphate.....	0.11
Zinc Oxide.....	99.86
Total	100.00

Station No. 130. Mineral Point Zinc Oxide.

Composition	Per cent.
Lead sulphate.....	4.22
Zinc sulphate.....	1.41
Zinc Oxide.....	94.37
Total	100.00

Station No. 132. Mineral Point Standard Zinc Oxide.

Composition	Per cent.
Lead sulphate.....	5.98
Zinc sulphate.....	0.61
Zinc Oxide.....	93.41
Total	100.00

ANALYSES OF MIXED PAINTS.

Station No. 62. Acme Household Paint—White.

Acme White Lead & Color Works, Detroit, Mich.

Station No. 116. New Era Paint—Outside White.

Acme White Lead & Color Works, Detroit, Mich.

"New Era Outside White is composed of pure, lead, zinc and refined linseed oil, is very heavy bodied and must be reduced to meet the requirements of the work upon which it is to be used."

Station No. 117. New Era Paint, Tint No. 44 (Gray.)

"A chemical analysis of this paint will prove our claim that it is the Best Paint That Can Be Made. The White and lighter tints will weigh heavier than darker shades and colors, as the latter contain a much larger percentage of coloring material, which necessarily weighs considerable less than the pure white. We invite comparison between this paint and any brand of strictly pure lead or Prepared Paint, as to durability, covering and working properties."

	No. 62	No. 116	No. 117
Net weight.....	9lb 14.9 oz.	8lb 2 oz.	7lb 7 oz.
Capacity of can.....	0.30 qts.	2.04 qts.	2.06 qts.
Contents.....	0.26 qts.	2.00 qts.	1.97 qts.
	Per cent.	Per cent.	Per cent.
Pigment by weight....	28.3	67.4	58.3
Fluid portion by weight	71.7	32.6	41.7
	100.00	100.00	100.00

Analysis of fluid portion.

	Per cent	Per cent	Per cent.
Linseed oil.....	68.6	90.6	87.6
Turpentine dryer.....	30.0	7.3	12.2
Water ..	1.4	2.1	0.2
	100.00	100.00	100.00

Analysis of Pigment.

	Per cent	Per cent	Per cent.
White Lead.....	00.00	58.76	9.11
Lead sulphate.....	00.00	2.22	45.06
Zinc oxide.....	99.80	33.92	43.77
Calcium carbonate.....		1.24	
Alumina		1.54	0.99
Silica		1.76	0.85
Magnesia		0.18	
Undetermined, color.			
etc.	0.20	0.38	0.22
	100.00	100.00	100.00

The tag attached to every can of this paint is somewhat misleading since the statements made thereon, would seem to be applicable, to the outside white and not to the shades.

Station No. 165. Armstrong's Mixed Paint—Outside White.

Armstrong's Paint & Varnish Works, Chicago.

"Guarantee. We guarantee our paint to be satisfactory in every way when applied according to directions on this label."

The basis of the paint in this can is composed of selected oxide of zinc, 65 per cent, pure carbonate of lead, 15 per cent, silic (or indestructible flint,) 20 per cent, together with the necessary coloring matter to produce the desired tint.

The liquid in this paint is composed of pure linseed oil, 92 per cent, oil dryer, 8 per cent.

Station No. 166. Armstrong's Mixed Paint, Tint No. 366.

Same statement on can as under No. 165.

	No. 165	No. 166
Net weight.....	7lb 11 oz.	6lb 0 oz.
Capacity of can.....	1.94 quarts	1.94 quarts
Contents	1.89 quarts	1.74 quarts
	Per cent	Per cent.
Pigment by weight....	65.6	57.2
Fluid portion by weight	34.4	42.8
	100.00	100.00

Analysis of fluid portion.

	Per cent.	Per cent.
Linseed oil.....	88.9	89.5
Dryer	9.3	8.6
Water	1.8	1.3
	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.
White lead.....	14.65	14.18
Lead sulphate.....	0.34	.27
Zinc oxide.....	63.42	63.27
Silica	20.91	20.14
Undetermined color, etc.....	0.68	2.14
	100.00	100.00

Station No. 106. Atlas Paint—House Colors.

Atlas Paint Manfg Co, Minneapolis Minn.

Strictly Pure Tint No. 10 (Light Green.)

"Unequalled for Fineness and Durability."

Station No. 125 Atlas Paint—House Colors.

Tint No. 10 (Light Green.)

"Our Strictly Pure Guarantee. We guarantee that this paint contains only those ingredients declared by law to constitute Pure Paint, viz., Pure White Lead (carbonate of lead,) Pure Oxide of Zinc, Pure Coloring matter ground in Pure Linseed Oil and thinned with Pure Turpentine and Pure Japan Dryer "

	No. 106	No. 125
Net weight.....	3lb 8 oz.	3lb 11 oz.
Capacity of can.....	1.05 quarts	1.06 quarts
Contents	99. quarts	1.06 quarts

	Per cent.	Per cent.
Pigment by weight.....	54.1	54.8
Fluid portion by weight.....	45.9	45.2
	100.00	100.00

Analysis of fluid portion.

	Per cent.	Per cent.
Linseed Oil.....	97.1	95.3
Turpentine Japan.....	1.0	2.7
Water	1.6	1.4
	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.
White lead.....	38.01	39.72
Lead sulphate.....	8.13	3.84
Zinc oxide.....	52.61	54.98
Color	1.25	1.46
	100.00	100.00

Station No. 41. "N. W." Mixed Paint—Outside White.

T. L. Blood & Co., St. Paul, Minn.

"Unexcelled for durability, fine finish and covering capacity."

"The pigment of the 'N. W.' paint is composed of carbonate of lead, oxide of zinc and colors, thinned with pure linseed oil and sufficient turpentine Japan and spirits of turpentine to insure general working qualities. No other materials enter into its composition."

"When properly applied we guarantee our 'N. W.' paint to give entire satisfaction as to durability, covering capacity and fine finish."

Station No. 86. "N. W." Mixed Paint, Tint No. 66.

Station No. 148. "N W" Mixed Paint, Tint No. 21.

	No. 41	No. 86	No. 148
Net weight	3lb 5 oz.	3lb 14 oz.	6lb 12 oz.
Capacity of can.....	1.03 qts.	1.03 qts.	2.03 qts.
Contents	.89 qts.	.98 qts.	1.92 qts.
	Per cent.	Per cent.	Per cent.
Pigment by weight.....	62.1	62.0	56.9
Fluid portion by weight..	37.9	38.0	43.1
	100.00	100.00	100.00

Analysis of fluid portion.

	Per cent.	Per cent.	Per cent.
Linseed oil.....	86.7	93.2	92.0
Turpentine dryer.....	10.5	5.2	6.2
Water	2.8	1.6	1.8
	100.00	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.	Per cent.
White lead.....	*31.32	30.62	27.73
Lead sulphate.....		3.14	2.39
Zinc oxide.....	68.14	65.96	57.12
Clay and Silica.....			7.74
Iron oxide and lamp black..			5.02
Undetermined, color, etc..	0.54	0.28	
	100.00	100.00	100.00

*Lead present calculated to white lead

Sample No. 148 has a rather large per cent of ochre as color.

Station No. 122. Crown Cottage Colors—Outside White.

Bradley Vrooman & Co., Chicago.

"Unequalled for Fineness and Durability."

"We conform to the laws of the state of North Dakota by stating that Crown Cottage Colors Outside White is made as follows:

Pigment. Lead (sulphate) 60 per cent, zinc (oxide) 40 per cent.

Thinners. Linseed oil 90 per cent, Japan dryer and turpentine 10 per cent.

Station No. 121. Crown Cottage Colors, No. 300 Silver Gray.
Guarantee for the base white.

Pigment. Lead (sulphate) 50 per cent, zinc (oxide) 50 per cent.

Thinners. Linseed oil 90 per cent., Japan dryer and turpentine 10 per cent.

	No. 122	No. 121
Net weight.....	15lb	14lb 5 oz.
Capacity of can.....	3.96 qts.	3.96 qts.
Contents	3.95 qts.	3.94 qts.

	Per cent.	Per cent.
Pigment by weight.....	57.0	55.9
Fluid portion by weight.....	43.0	44.1
	100.00	100.00

Analysis of fluid portion.

	Per cent.	Per cent.
Linseed oil.....	90.5	88.6
*Dryer	9.3	*10.8
Water	0.2	0.6
	100.00	100.00

*Largely benzene.

Analysis of Pigment.

	Per cent.	Per cent.
White lead.....	0.0	0.0
*Lead sulphate.....	58.37	48.76
*Lead oxide.....	5.99	
Zinc oxide.....	35.24	48.31
Undetermined color, etc.....	0.40	2.93
	100.00	100.00

*Probably sublimed lead.

Station No. 142. Breinig's Lithogen Silicate Paint—Outside White.

Bridgeport Wood Finishing Co., New Milford, Conn.

Silex Lead and Zinc Paint.

"Recommended for durability, body and fastness of color. Superior to white lead. Non-Poisonous, will not crack, peel or chalk off. Resists atmospheric action in any climate. Especially adapted for painting along the coast. Hardens into an elastic stone-like covering on stone, plaster and iron One gallon producing two gallons or more of paint ready for use, which will spread over more surface than the same quantity of white lead and linseed oil."

Net weight.....	5 lb 1 oz.
Capacity of can.....	1.05 qts.
Contents.....	.94 qts.

Per cent.

Pigment by weight.....	82.5
Fluid portion by weight.....	17.5
	100.00

Analysis of Pigment.

White lead.....	33.88
Lead sulphate.....	0.17
Zinc oxide.....	32.09
Silica.....	33.18
Undetermined.....	0.68
	100.00

I Am the Paint Man

2 Full Gallons Free to Try—6 Months Time to Pay

O. L. Chase
AM the paint man.
I have a new way
of manufacturing and
selling paints. It's
unique—it's better
Before my plan
was invented paint

was sold in two ways—either ready-mixed or the ingredients were bought and mixed by the painter.

Ready-mixed paint settles on the shelves, forming a sediment at the bottom of the can.

The mineral in ready-mixed paint, when standing in oil, eats the life out of the oil. The oil is the very life of all paints.

Paint made by the painter cannot be properly made on account of lack of the heavy mixing machine.

My paint is unlike any other paint in the world.

It is ready to use, but not ready-mixed.

My paint is made to order after each order is received, packed in hermetically sealed cans with the very day it is made stamped on each can by my factory inspector.

I ship my pigment—which is white lead, zinc, drier and coloring matter freshly ground, after order is received—in separate cans, and in another can I ship my Oil, which is pure old process linseed oil, the kind that you used to buy years ago before the paint manufacturers, to cheapen the cost of paint, worked in adulterations.

I sell my paint direct from my factory to user at my very low factory price; you pay no dealer or middleman profits.

I pay the freight on six gallons or over.

NOTE—My 8 Year Guarantee backed by \$20,000 Bond.

My paint is so good that I make this wonderfully fair test offer:

When you receive your shipment of paint, you can use two full gallons that will cover 600 square feet of wall—two coats.

If, after you have used that much of my paint, you are not perfectly satisfied with it in every detail, you can return the remainder of your order and the two gallons will not cost you one penny.

No other paint manufacturer ever made such a liberal offer.

It is because I manufacture the finest paint, put up in the best way, that I can make this offer.

I go even further.
I sell all of my paint on six months' time, if desired.

This gives you an opportunity to paint your buildings when they need it, and pay for the paint at your convenience.

Back of my paint stands my Eight Year, officially signed, Iron-clad Guarantee.

8 YEARS' GUARANTEE

This is the longest and most liberal guarantee ever made in the paint business. For further particulars regarding my plan of selling and company rules, call on all factory paint a postal to O. L. Chase, St. Louis, Mo.

I will send my color book—the most complete book of the kind ever published—completely free. Also, my descriptive New Year's card—sent every day of the year.

O. L. Chase
The Paint Man
2721 Olive St., St. Louis, Mo.

The producers of Chase's paint specifically state that their mixed paint is white lead, zinc, drier and coloring mat-

ter freshly ground as is shown by a reference to the preceding advertisement, when in reality there is no white lead in the paint whatever.

In their directions for using the O. L. Chase "Made to Order" paint on page 10 they state: "It contains exactly the right proportions of everything needed—the exact amount of white lead to give opacity and body; the right proportion of zinc white to afford proper oil affinity, and greatest durability; the precise quantity of drier to produce the best results, and the exact amount of the purest linseed oil obtainable, to say nothing of the right quantity of the finest tinting colors." Surely then they would have their customers believe that the product they are selling them would have as its basis white lead.

There was purchased from this company one gallon of paint, put up in two separate receptacles; one for the pigment, the other containing the oil. In the can containing the pigment there was found 1.71 quarts and of oil, 1.70 quarts, or a total of 3.41 quarts. In other words then the gallon was .59 of a quart short, and when the two products were combined there was actually by weight 10 pounds and 13 ounces. Whereas a good paint should weigh approximately 16 pounds per gallon. Inasmuch as they charge \$1.60 per gallon, is seems an exorbitant price for the oil when the selling price of linseed oil is but forty cents a gallon. Thus in the oil itself there is furnished a nice profit of \$1.20 to each forty cents expended for oil.

The pigment, as received, was found to be made up, by weight, of 75.6 per cent. solids, and 24.4 fluid. Or when you add the oil as received the relation of the pigment to the vehicle is as 52.4 to 47.6 per cent. This paint would therefore, be unusually thin, in fact as in the pigment, when received, there was already present as much fluid as is found in some paints and, of this fluid portion 24 per cent. is in the form of benzine, and nearly 21 per cent. occurs as water.

The analysis shows that the paint does not contain a trace of white lead; it does however contain of chalk and barytes 55.26 per cent., and the balance is mainly zinc oxide.

In the judgment of the writer this is one of the most misleading and deceptive paint propositions before the public.

In the following we give complete results of our examination of the sample of paint as purchased directly from the company.

Station No. 170. The O. L. Chase Strictly Pure House Paint, Tint No. 946.

O. L. Chase, The Paint Man, St. Louis, Mo.

"Guarantee. I guarantee the O. L. Chase Paint to be the best that money and brains can make. I guarantee the O. L. Chase Oil to be absolutely pure old fashioned linseed oil. I guarantee both to give perfect satisfaction and to outlast any other paint. If not all I claim I will refund your money."

Station No. 171. The O. L. Chase Oil.

	No. 170	No. 171
Capacity of can.....	1.95 qts.	1.95 qts.
Contents	1.71 qts.	1.70 qts.
Net weight.....	7lb 8 oz.	3lb 5 oz.

Sample received represents a low grade linseed oil.

	Per cent
Pigment by weight.....	75.6
Fluid portion by weight.....	24.4
	100.00

Analysis of fluid portion.

	Per cent.
Linseed oil	54.94
Benzine dryer	24.17
Water	20.89
	100.00

Analysis of Pigment.

	Per cent.
White lead.....	0.00
Lead sulphate.....	3.66
Zinc oxide.....	39.87
Calcium carbonate.....	33.78
Barytes	21.48
Color and undetermined.....	1.21
	100.00

The weight of the paint plus the oils is 10lb 13 oz. The volume of the paint plus the oils is 3.41 qts., or a shortage of about 15 per cent per gallon.

The per cent of pigment in the mixture is.....	52.4
The per cent of vehicle in the mixture is.....	47.6
	100.00

The fluid portion of the mixture is composed of

	Per cent.
Linseed oil.....	84.0
Benzine dryer.....	8.6
Water	7.4
	100.0

Station No. 146. Devos Lead & Zinc Paint—Outside White.

F. W. Devos & Co., Chicago, Ill.

"Notice. These paints are strictly pure and are sold subject to chemical analysis."

Notice. These Paints are made only of Pure White Lead, Pure White Zinc, Pure Linseed Oil, Pure Turpentine Dryer, Pure Tinting Colors and Nothing Else.

Notice. These Paints are strictly full measure."

Station No. 147. Devco Lead and Zinc Paint No. 694 Light Lead.

Same statement as under No. 146.

	No. 146	No. 147
Net weight.....	6lb 11 oz.	6lb 13 oz.
Capacity of can.....	2.00 qts.	2.00 qts.
Contents	1.86 qts.	1.90 qts.
	Per cent.	Per cent.
Pigment by weight.....	56.6	56.7
Fluid portion by weight.....	43.4	43.3
	100.00	100.00

Analysis of fluid portion.

	Per cent.	Per cent.
Linseed oil.....	93.0	93.2
Turpentine dryer.....	6.4	6.2
Water	0.6	0.6
	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.
White lead.....	28.56	28.34
Lead sulphate	0.62	0.87
Zinc oxide.....	70.43	69.91
Undetermined, color, etc.....	0.39	0.88
	100.00	100.00

Station No. 159. Champion Ready Mixed Paints—Outside White.

Detroit White Lead Works, Detroit, Mich.

"This Paint is a mixture of white lead and zinc and we guarantee it to outwear Pure White Lead."

Station No. 169. Champion Ready Mixed Paints—Stone Color, No. 73.

Same statement as under No. 159.

Station No. 153. Detroit White Lead Works Liquid Paint, Gray B—15.

"We guarantee the paint in this can when used according to directions to be fully equal to any house paint on earth for spreading, covering and wearing qualities and we further guarantee it to outwear Strictly Pure White Lead used in the ordinary way twice over."

	No. 159	No. 169	No. 153
Net weight.....	3lb 0 oz.	2lb 14 oz.	3lb 8 oz.
Capacity of can.....	1.03 qts.	1.00 qts.	1.03 qts.
Contents	.99 qts.	.90 qts.	.95 qts.
Fluid portion by weight.....	44.9	50.1	43.2
Pigment by weight.....	55.1	49.9	56.8
	100.00	100.00	100.00

Analysis of fluid portion.

	Per cent	Per cent	Per cent
Linseed oil.....	72.5	68.9	75.5
Benzine dryer	9.1	16.1	7.3
Water	18.4	15.0	17.2
	100.00	100.00	100.00

Analysis of Pigment.

	Per cent	Per cent	Per cent
White lead	0.00	21.73	26.80
Lead sulphate	.89	.85	4.70
Zinc oxide	53.86	47.89	46.67
Calcium carbonate.....	43.39	21.98	1.26
Magnesium carbonate.....	0.73		
Barytes			19.90
Clay & Silica.....	0.60	5.41	
Undetermined, color etc.....	.53	2.14	0.67
	100.00	100.00	100.00

No. 159 and 169 bear statements guaranteeing the paints to be white lead and zinc when in reality there is no white lead in No. 159 at all, and in place of being white lead and zinc only there is present a large amount of calcium carbonate or chalk and other cheapening agents.

Station No. 49. Ruchter's Durable Paint for Building—White.

A. A. Ebersson & Co., St. Louis, Baltimore.

No guarantee stated on label.

Net weight	4 lbs. 14 oz.
Capacity of can.....	1.06 quarts
Contents	.97 quarts
Pigment per cent.....	83.9
Fluid portion per cent.....	16.1

100.00

Analysis of Pigment.

White lead	00.00
Zinc oxide	53.00
Calcium carbonate	45.90
Magnesium carbonate	1.01
Undetermined	0.09
	100.00

Station No. 55. Noxall Fast Color Paint—Outside White.
Enterprise Paint Mfg. Co., Chicago, Ill.

"Unequalled for fineness and durability."

Station No. 56. Perfecto Mixed Paint—Outside White.

Enterprise Paint Mfg. Co.,

No statement or guarantee given on label.

	No. 55	No. 56.
Net weight.....	3 lbs. 1 oz.	0 lbs. 11.3 oz.
Capacity of can.....	1.06 quarts	0.34 quarts
Contents weight per cent....	.94 quarts	0.25 quarts
Pigment weight per cent.....	58.9	59.8
Fluid portion weight per cent..	41.1	40.2
	100.00	100.00

Analysis of fluid portion.

	Per cent	Per cent
Linseed oil	55.0	52.0
Volatile oil	28.0	26.0
Water	17.0	22.0
	100.00	100.00

Analysis of Pigment.

	Per cent	Per cent
White lead.....	20.46	23.25
Lead sulphate	6.50	7.12
Zinc oxide	27.06	31.80
Calcium carbonate.....	29.23	28.44
Barium sulphate.....	13.64	9.18
Undetermined	3.11	0.23
	100.00	100.00

The above paints were the ones found on the market when the paint law went into force but have been largely replaced by the following—Republic brand.

Station No. 118. Republic Brand Prepared Paint—Outside White

Enterprise Paint Mfg. Co., Chicago, Ill.

"This paint conforms to the North Dakota Paint Law by being labelled to contain the following ingredients:
Pigment.—Zinc Oxide 55 per cent, Sublimed Lead 45 per cent
Liquids.—Linseed Oil 90 per cent, Japan Dryer 10 per cent

Station No. 119. Republic Brand Prepared Paint—Tint No. 411.

"Guarantee. Pigment. Zinc Oxide 53 ½ per cent., Sublimed Lead 46 ½ per cent., together with the necessary coloring matter to produce the desired tint.
Liquids.—Linseed Oil 90 per cent, Japan Dryer 10 per cent.

	No. 118	No. 119
Net weight.....	15 lbs. 1 oz.	14 lbs. 8 oz.
Capacity of Can.....	4.00 qts.	4.00 qts.
Contents	3.94 qts.	3.86 qts.

	Per cent	Per cent
Pigment by weight.....	59.2	58.6
Fluid portion by weight.....	40.8	41.4
	100.00	100.00

Analysis of fluid portion.

	Per cent	Per cent
Linseed oil	90.4	90.4
Japan dryer	9.5	9.6
Water	0.1	0.0
	100.00	100.00

Analysis of Pigment.

	Per cent	Per cent
Sublimed lead	45.36	46.87
Lead sulphate.....	33.46	35.56
Lead oxide.....	9.63	8.93
Zinc oxide.....	2.27	2.34
Zinc Oxide	54.11	52.77
Undetermined, color, etc.....	0.53	0.40
	100.00	100.00

Station No. 40. Gilt Edge House Paint—Inside White.
Farwell, Ozman Kirk & Co., St. Paul, Minn.

"Strictly Pure."

"Gilt Edge House Paints are composed of pure carbonate of lead, oxide of zinc, pure linseed oil and enough turpentine and Japan to insure correct drying and working qualities. Our outside white contains only lead and zinc for pigment, and is strictly pure. The light tints and other shades contain as coloring matter, the best oxides, ochres and chemically prepared colors to be obtained."

The inside white bears a special label, "Don't use for outside work."

Station No. 112. Gilt Edge House Paint—Outside White
Same statement as under No. 40.

	No. 40.	No. 112.
Net weight.....	3 lbs. 0 oz.	8 lbs. 0 oz.
Capacity of Can.....	1.04 qts.	2.06 qts.
Contents	.99 qts.	2.05 qts.
	Per cent	Per cent
Pigment by weight.....	62.9	63.2
Fluid portion by weight.....	37.1	36.8
	100.00	100.00

Analysis of fluid portion.

	Per cent	Per cent.
Linseed oil.....	60.1	94.4
Turpentine dryer	39.9	4.5
Water	0.0	1.1
	100.00	100.00

Analysis of Pigment.

	Per cent	Per cent.
White lead	60.00	47.98
Lead sulphate	2.57	2.50
Zinc oxide	65.81	49.26
Lithophone	30.79	
Barium sulphate	20.20	
Zinc sulphide	6.13	
Zinc oxide	4.46	
Silica	0.28	
Undetermined	0.55	0.36
	100.00	100.00

Station No. 168. Albite.

Farwell, Ozmun, Kirk & Co., St. Paul, Minn.

"Combination White Paint in Paste Form"

"The contents of this package consists of Sublimed White Lead 60 per cent., Standard Zinc Oxide 20 per cent., Barium Sulphate 20 per cent., ground in refined linseed oil. It will cover as well and wear longer than any strictly pure white lead made."

Station No. 177. Prepared Parian Paint—Outside White.

Farwell, Ozmun, Kirk & Co.

"Parian Outside White contains Pigment, White Lead Sublimed 40 per cent, Blanc Fixe 20 per cent Liquid. Linseed oil 83 per cent., Naptha 11 per cent., White Japan 6 per cent."

No. 168 No. 177

	6lb 15 oz.	1lb 14 oz.
Net weight.....		0.48 qts.
Capacity of can.....		0.48 qts.
Contents		

Per cent. Per cent.

Pigment by weight.....	91.0	65.0
Fluid portion by weight.....	9.0	35.0
	100.00	100.00

Analysis of fluid portion.

	Per cent.
Linseed oil.....	81.1
Volatile oil.....	17.8
Water	1.1
	100.00

Analysis of Pigment.

	Per cent.	Per cent.
Sublimed lead.....	58.73	36.85
Zinc oxide.....	21.49	42.03
Barium sulphate.....	19.78	31.12
	100.00	100.00

Station No. 158. Golden Rule Cottage Colors. Tint E 508.
St. Paul, Minn.

"Unequalled for fineness and durability."

	3lb 1 oz.
Net weight.....	1.03 qts.
Capacity of can.....	.91 qts.
Contents	

100

Pigment by weight.....	Per cent.
Fluid portion by weight.....	59.6
	40.4

Analysis of fluid portion.

Linseed oil.....	Per cent.
Benzine dryer.....	63.4
Water.....	16.1
	20.5

Analysis of Pigment.

White lead.....	Per cent.
Lead sulphate.....	00.00
Zinc oxide.....	11.58
Calcium carbonate.....	38.69
Barytes and Silica.....	42.06
Color.....	7.06
	0.61
	100.00

This paint shows a high per cent. of fluid and 36 per cent. of this fluid is in the form of water and benzine adulterants, while one-half of the pigment is in the form of chalk and barytes but contains no white lead.

Station No. 123. Town and Country Ready Mixed Paint.—
Outside White.

Harrison Bros. & Co., Philadelphia, Pa.

"Beware of adulterated oils and turpentine they will ruin any paint."

Station No. 114. Town and Country Ready Mixed Paint.
Tint No. 74.

"Beware of adulterated oils and turpentine they will ruin any paint."

101

	No. 123	No. 114.
Net weight.....	3lb 14 oz.	3lb 10 oz.
Capacity of can.....	1.06 qts.	1.06 qts.
Contents.....	1.00 qts.	1.00 qts.

Per cent. Per cent.

Pigment by weight.....	62.7	57.1
Fluid portion by weight.....	37.3	42.9
	100.00	100.00

Analysis of fluid portion.

Per cent. Per cent.

Linseed oil.....	81.0	70.3
Turpentine and Japan.....	9.0	11.1
Water.....	10.0	18.6
	100.00	100.00

Analysis of Pigment.

Per cent. Per cent.

White lead.....	48.99	44.13
Lead sulphate.....	0.51	0.98
Zinc oxide.....	49.63	47.57
Calcium carbonate.....		1.21
Silica.....		3.70
Undetermined, color etc.....	0.87	2.41
	100.00	100.00

The paints as reported upon above have been replaced by the producers by paints of a composition like the following:

Station No. 180. Harrison's Town and Country Paint.—
Outside White.

Harrison Bros. & Co., Inc. Philadelphia.

"One-half Gallon U. S. Standard Measure."

"The base of this paint is composed of 50 per cent. Basic Lead Carbonate (white lead,) 50 per cent Zinc Oxide. The thinning vehicle is composed of 88.34 per cent. linseed oil, 9.23 per cent Turpentine and Japan Drier, 2.43 per cent. water."

Station No. 181. Harrison Town and Country Paint, Tint No. 70.

Base 50 per cent. Basic Lead Carbonate (white lead,) 50 per cent. Zinc Oxide. Thinning vehicle 87.76 Linseed oil, 10 10 per cent. Turpentine and Japan Drier, 2.14 per cent. of water

	No. 180	No. 181
Net weight.....	7lb 12 oz.	15lb 0 oz.
Capacity of can.....	2.07 qts.	4.12 qts.
Contents	1.99 qts.	3.92 qts.
	Per cent.	Per cent.
Pigment by weight.....	63.2	60.0
Fluid portion by weight.....	36.8	40.0
	100.00	100.00

Analysis of fluid portion.

	Per cent.	Per cent.
Linseed oil.....	88.6	88.1
Turpentine and drier.....	8.8	9.8
Water	2.6	2.1
	100.00	100.00

Analysis of Pigment.

	Per cent	Per cent.
White lead.....	50.18	49.12
Lead sulphate.....	0.68	0.46
Zinc oxide.....	48.78	49.69
Undetermined, color, etc.....	0.36	0.73
	100.00	100.00

Station No. 43. Best Prepared Paint,—Outside White.
Heath & Milligan Mfg. Co., Chicago, Ill.

No guarantee given on label.

Station No. 108. Best Prepared Paint, Pearl Gray.

Station No. 160. Best Prepared Paint, French Grey.

"The white base in tints where white is used is composed of

White Lead {	White lead.....	19.26	} 38.42
	Lead sulphide.....	19.16	
		Per cent.	
Zinc oxide.....		46.58	
Barium sulphate		10.00	
Calcium carbonate.....		5.00	
		100.00	

The thinning vehicle is composed of

	Per cent.
Linseed oil.....	91.78
Turpentine and Japan drier.....	6.38
Water	1.84
	100.00

The tints are obtained by the use of necessary coloring matter.

March 1, 1906."

	No. 43	No. 108	No. 160
Net weight.....	4lb 2 oz.	7lb 13 oz.	4lb 0 oz.
Capacity of can.....	1.06 qts.	2.06 qts.	1.06 qts.
Contents	1.01 qts.	1.98 qts.	1.05 qts.
	Per cent.	Per cent.	Per cent.
Pigment by weight.....	63.57	61.3	61.8
Fluid portion by weight.....	36.43	38.7	38.2
	100.00	100.00	100.00

Analysis of fluid portion.

	Per cent.	Per cent.	Per cent.
Linseed oil	89.55	90.9	90.6
*Turpentine and Japan drier..	9.70	7.3	7.4
Water	0.75	1.8	2.0
	100.00	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.	Per cent.
White lead.....	*43.45	19.03	16.64
Lead sulphate.....		11.62	13.48
Zinc oxide.....	45.75	41.55	39.80
Calcium carbonate.....	10.39	8.40	10.68
Barium sulphate.....		17.62	18.93
Undetermined, color, etc.....	0.41	1.78	0.47
	100.00	100.00	100.00

Station No. 84. High Standard Liquid Paint,—Outside White.

The Lowe Bros., Dayton, Ohio.

Requisites for a High Standard House Paint. Covering Power, Spreading Capacity, Durability, Wearing evenly, Fading by gradual wear. Leaving a good surface for re-painting.

The contents of this package will fulfill these requirements and will produce the best results obtainable, when fairly applied to a surface in a fit condition to receive paint.

Station No. 113. High Standard Liquid Paint,—Pure Gray.

	No. 84	No. 113
	Per cent	Per cent.
Net weight.....	3 lb 15 oz.	7 lb 9 oz.
Capacity of can.....	1.13 qts.	2.10 qts.
Contents.....	1.03 qts.	2.03 qts.

*About equal parts turpentine and benzine.

*Includes both white and lead sulphate.

Per cent Per cent.

Pigment by weight.....	67.3	57.8
Fluid portion by weight.....	32.7	42.2
	100.00	100.00

Analysis of fluid portion.

	Per cent.	Per cent.
Linseed oil.....	83.0	82.6
*Drier	16.8	17.2
Water	0.2	0.2
	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.
White lead.....	43.82	41.65
Lead sulphate.....	0.00	1.04
Zinc oxide.....	43.29	39.81
Calcium carbonate.....	2.80	5.81
*Silica	5.63	7.64
Alumina	1.58	0.98
Magnesia	2.18	2.44
Undetermined, color, etc.....	0.70	0.63
	100.00	100.00

Station No. 105. Tinted Gloss Paint,—Outside White.

John Lucas & Co., New York.

"Guaranteed Standard Measure,—Pure Oil."

"Beautiful, Durable, Reliable, Elastic."

*Silica, Alumina and Magnesia probably in combination representing a natural earth product.

*About one part turpentine to two parts benzine.

Net weight.....	3lb 4 oz.
Capacity of can.....	1.08 qts.
Contents	.93 qts.

Per cent.

Pigment by weight.....	63.1
Fluid portion by weight.....	36.9

100.00

Analysis of fluid portion.

Linseed oil.....	89.6
Drier	10.1
Water	0.3

100.00

Analysis of Pigment.

White lead.....	21.56
Lead sulphate.....	1.09
Zinc oxide.....	49.25
Calcium carbonate.....	1.80
Clay and Magnesium Silicate.....	25.87

Silica..... 14.19

Alumina..... 6.15

Magnesia..... 3.70

Comb. Water..... 1.83

Undetermined	0.43
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100.00

Station No. 71. House Paint,—Outside White.

Minnesota Linseed Oil & Paint Co., Minneapolis, Minn.

Strictly Pure Paint consisting only of pure carbonate of lead. Pure oxide of zinc, pure tinting colors. Carefully mixed and thoroughly ground in our own pure linseed oil, pure turpentine and pure turpentine driers. Put up in full measure and sold subject to chemical analysis.

Station No. 135. House Paint. Tint No. 18.
Same statement as under No. 71.

	No. 71	No. 135.
Net weight.....	8lb 2 oz.	16lb 3 oz.
Capacity of can.....	2.11 qts.	4.06 qts.
Contents	2.05 qts.	4.01 qts.

Per cent Per cent.

Pigment by weight.....	65.4	65.8
Fluid portion by weight.....	34.6	34.2

100.00 100.00

Analysis of fluid portion.

	Per cent.	Per cent.
Linseed oil.....	95.6	90.4
Turpentine drier	4.4	9.4
Water	0.0	0.2

100.00 100.00

Analysis of Pigment.

	Per cent.	Per cent.
White lead.....	43.47	49.53
Lead sulphate.....	56.09	0.44
Zinc oxide.....	0.44	49.64
Undetermined, color, etc.....		0.39

100.00 100.00

Station No. 88. Tower Brand Mixed Paint,—Outside White.
Montgomery, Ward & Co., Chicago, Ill.Station No. 185. Tower Brand Mixed Paint,—Lead color.
No. 37.
Montgomery, Ward & Co., Chicago, Ill.

	No. 66	No. 185
Net weight.....	3lb 10 oz.	6lb 14 oz.
Capacity of can.....	1.03 qts.	1.91 qts.
Contents	.95 qts.	1.82 qts.
	Per cent.	Per cent.
Pigment by weight.....	64.8	58.9
Fluid portion by weight.....	35.2	41.1
	100.00	100.00

Analysis of fluid portion.

	Per cent.	Per cent.
*Vegetable oil.....	84.5	80.2
Benzine drier	6.4	8.5
Water	9.1	11.3
	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.
White lead.....	00.00	00.00
Sublimed lead.....	80.28	00.00
Lead sulphate.....		39.26
Zinc oxide.....		34.20
Calcium carbonate.....		5.39
Barytes	19.09	19.90
Undetermined, color, etc.....	.64	1.25
	100.00	100.00

* These paints are short measure, contain a large amount of water and benzine, no white lead and are about one-fourth chalk and barytes.

* Apparently a low grade linseed oil.

Station No. 57. Favorite House Paint,—Outside White.
John Masury & Son, New York and Chicago.

Label bears no guarantee.

Net weight.....	0lb 14.3 oz.
Can capacity.....	0.27 quarts
Contents	0.22 quarts
	Per cent.
Pigment by weight.....	54.3
Fluid portion by weight.....	45.7
	100.00

Analysis of fluid portion.

	Per cent.
Linseed oil.....	97.9
Volatile oil	2.1
Water	0.0
	100.00

Analysis of Pigment.

White lead.....	00.00
Lead sulphate.....	4.29
Zinc oxide.....	60.94
Barytes	33.32
Silica	1.18
Undetermined	0.27
	100.00

Station No. 102. Horse Shoe Brand Prepared Paint. French
Gray No. 867.

Mound City Paint & Color Co., St. Louis, Mo.

Guarantee. We guarantee this paint to be made wholly of Strictly Pure White Lead, Strictly Pure Oxide of Zinc.

Strictly Pure Linseed Oil, Strictly Pure Turpentine Japan, or the color necessary to produce this shade and that it contains no adulterating or cheapening material whatsoever. It is sold subject to chemical analysis

Station No. 149. Horse Shoe Brand Prepared Paint,—Outside White.

Same statement as on above can.

	No. 102.	No. 149.
Net weight	3 lbs. 12 oz.	7 lbs. 12 oz.
Capacity of can.....	1 05 quarts	2 03 quarts.
Contents	1 00 quarts	1 88 quarts.
	Per cent	Per cent.
Pigment by weight.....	60.0	64.3
Fluid portion by weight.....	40.0	35.7
	100.00	100.00

Analysis of Vehicle.

	Per cent.	Per cent.
Linseed oil	84.9	86.0
Turpentine Drier.....	12.8	13.7
Water	2.3	0.3

Analysis of Pigment.

	Per cent.	Per cent.
White lead	30.25	34.81
Lead Sulphate	5.07	5.41
Zinc oxide	64.07	59.21
Undetermined, color etc.....	0.61	0.57
	100.00	100.00

Station No. 174. Gold Medal Ready Mixed Paints. Tint

No. 135.

Morrison Paint Co.

The address of the manufacturers is not given on this can. As shown in the analysis however 45 per cent. of the fluid is water and benzine and nearly one-half of the pigment is in the form of calcium carbonate and barytes and no white lead whatever.

Net weight	3 lbs. 8 oz.
Capacity of can.....	1.06 quarts.
Contents	1.00 quarts.
	Per cent.
Pigment by weight.....	60.7
Fluid portion by weight.....	39.3
	100.0

Analysis of Vehicle.

	Per cent.
Linseed oil	56.9
Benzine Drier	20.6
Water	22.5
	100.00

Analysis of Pigment.

	Per cent.
White Lead	00.00
Lead sulphate	18.13
Zinc oxide	34.04
Calcium carbonate	41.09
Barytes and silica	6.20
Color	0.54
	100.00

Station No. 88. N. B. & C. St. Paul Paint, Prepared Outside White

Manufactured for Noyes Bros. & Cutler, St. Paul, Minn.

"One Quart."

Station No. 151. N. B. & C. St. Paul Paint Prepared Outside White.

"Half Gallon."

"In tints with a white base the base is composed of Lead Carbonate 25 per cent. Zinc Oxide (leaded) 50 per cent. Silicate of magnesia $12\frac{1}{2}$ per cent. Barium Sulphate 12%. The thinning vehicle is composed of Linseed Oil 85.88 per cent. water 2.73 per cent. turpentine and Japan Drier 11.3 per cent. The tints are obtained by the addition of the necessary coloring matter.

	No. 88.	No. 151.
Net weight	3 lbs. 11 oz.	7 lbs. 8 oz.
Capacity of can.....	1.01 quarts.	2.04 quarts.
Contents	.96 quarts.	1.95 quarts.

	Per cent.	Per cent.
Pigment by weight	62.6	63.0
Fluid portion by weight.....	37.4	37.0
	100.00	100.00

Analysis of Vehicle

	Per cent.	Per cent.
Linseed oil	72.1	85.7
Turpentine Drier	17.6	10.8
Water	10.3	3.5
	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.
White Lead	33.57	30.91
Lead Sulphate	7.18	9.78
Zinc oxide	41.45	42.17
Barytes	6.45	6.27
Magnesium silicate	9.93	9.98
Silica	6.77	
Magnesium Oxide.....	3.16	
Combined water & undetermined.....	1.42	0.89
	100.00	100.00

It should be stated that paint like No. 151 is on sale in the state at the present time and not like No. 88.

Station No. 144. Patton's Sun-Proof Liquid Paint Outside White.

Patton Paint Co., Milwaukee, Wis.

"The base of this paint is White Lead 39 per cent. Zinc Oxide 50 per cent. Silica 11 per cent. The thinners Linseed Oil 91 per cent Turpentine Dryer 9 per cent.

Station No. 145. Patton's Sun Proof Liquid Paint, Light Gray.

"The white base of this paint where white is used in White Lead 39 per cent. Zinc Oxide 50 per cent. Silica 11 per cent. Together with the necessary coloring matter. The thinners Linseed Oil 90 per cent Turpentine and Dryers 10 per cent.

	No. 144	No. 145
Net weight.....	4 lbs. 4 oz.	3 lbs. 15 oz.
Capacity of can.....	1.05 qts.	1.05 qts.
Contents	.99 qts.	.99 qts.
	Per cent.	Per cent.
Pigment by weight.....	65.6	62.1
Fluid portion by weight.....	34.4	37.9
	100.00	100.00

*Contains considerable benzine.

Analysis of Vehicle

	Per cent.	Per cent.
Linseed Oil	90.7	90.1
Turpentine & Dryer.....	9.2	9.8
Water	0.1	0.1
	100.0	100.0

Analysis of Pigment.

	Per cent.	Per cent.
White lead	40.23	39.31
Lead sulphate	2.55	2.60
Zinc oxide	47.75	47.52
Calcium carbonate	4.07	4.21
Silica	4.37	5.05
Magnesium carbonate	0.64	0.59
Undetermined, color etc.....	0.39	0.72
	100.00	100.00

The manufacturer states that the carbonates and Silica are in the form of native silicates as used in the process of paint making. The product, however, cannot be considered as commercially pure.

Station No. 50. B. P. S. Paint. Outside Gloss White.

The Patterson Sargent Co., Cleveland, Ohio.

"Best Paint Sold."

"The B. P. S. Paint is not a patent or chemical paint but is composed only of pure Old Dutch Process carbonate of lead and oxide of zinc or the necessary coloring pigments, pure old process linseed oil and the very best Japan and contains no adulteration whatever."

Station No. 61. B. P. S. Paint. Outside Gloss White.

Same statement as above on can.

Station No. 152. B. P. S. Paint. Olive Gray 245.

"One Quart."

Same statement as above on can.

	No. 50	No. 61	No. 152.
Net weight.....	0. lbs 14 oz.	3 lbs. 13 oz.	3 lbs. 11 oz.
Capacity of can.....	0.30 qts.	1.06 qts.	1.06 qts.
Contents	0.23 qts.	.99 qts.	.97 qts.

	Per cent.	Per cent.	Per cent.
Pigment by weight.....	63.4	63.2	54.9
Fluid portion by weight.....	36.6	36.8	45.1
	100.00	100.00	100.00

Analysis of Vehicle.

	Per cent.	Per cent.	Per cent.
Linseed oil.....	97.1	97.0	83.9
Japan Dryer	2.0	2.0	*14.9
Water	0.9	1.0	1.2
	100.00	100.00	100.00

Analysis of Pigment.

White lead	54.61	50.52	33.98
Lead sulphate	0.00	0.00	2.84
Zinc oxide	45.09	46.06	41.80
Silica	0.00	3.18	6.94
Calcium carbonate			12.14
Magnesium oxide & alumina			1.39
Undet. color, etc.....	0.30	0.24	.91
	100.00	100.00	100.00

In 152 the presence of 21.38 per cent. of the pigment as silica, magnesia, alumina and undetermined matter would

(*About 75 per cent. turpentine.)

not indicate that the product was wholly as represented, an ochre, employed to secure the desired tint. The iron constitutes only a part of the undetermined matter, and was exceedingly small, while the high per cent. of lime carbonate is sufficient to condemn the product as being in no way a true ochre. Such a paint must be labelled to comply with the law.

PARKER'S PERFECT PAINT.

The "Parker's Perfect Paint" is very extensively advertised and, like the Chase Paint, emanates from St. Louis. The Company claims to produce paint made to order for each and every job. They lay a great deal of emphasis on the fact that paint should not be adulterated.

In a pamphlet entitled "The Paint that Parker Makes" they say: "You know that some flour has adulterations in it—that some flour will be mildewed—and that other flour will be clean, pure, wholesome and nutritious. And there is just as much difference in paint.

"But, of course, the dealer would like to have you believe his old slopped up mixture of cheap materials is just as good as the paint that is made from the purest and best materials and made by the most expert paint makers in the world.

"And Parker's Perfect is that paint—it's made from the best and freshest materials that it's possible to obtain; it has no adulteration in it—it's made to last, and stand up under the liberal selling plan under which it is sold."

They further say in the same pamphlet: "In the first place Parker's Perfect Paint is FRESH PAINT, MADE-TO-ORDER-PAINT, manufactured out of the purest, freshest materials under my own formula, ground and thoroughly assimilated in heavy grinding and mixing machines.

"Pure linseed oil is added to the pigment in correct proportion according to the number of coats for which the paint is to be used."

They further say on page 19: "Parker's Perfect White

Paint is made of absolutely pure ingredients, pure white lead, zinc white and other minerals, and pure old fashioned linseed oil, mixed in absolutely the right proportions to produce a perfect white, a lasting white.

It is made AFTER your order is received, MADE FOR YOU; therefore it is always FRESH when you receive it, and retains all its life, its lasting power."

In order that the reader may know just what their method of advertising is I re-produce a page from one of the leading magazines as follows:

I Sold the Paint
for that House for \$1375

Let Me Tell You What the Paint for Your House Will Cost



FIRST let me tell you my price on the paint to do the work—not by the gallon, but for the entire job. Then let me send you all the paint you need freight prepaid. Use it on your buildings—use it all.

Then stand off and take a long look at it. If the paint is as represented—if it is entirely satisfactory pay me the price I have put on it, either in cash or on 6 months time. If the paint is not satisfactory, keep it free—without any rest whatever.

Now I don't want you to pay me any money in advance. I don't want you to send me a cent on deposit.

I simply ask you to test the paint to the most liberal way you ever heard of. I have a large paint factory. I have been making paint for many years. In all my paint experience I have never seen a paint nor heard of a paint that was anywhere near as good as my Parker's Perfect Paint.

That's the reason why I sell it on my Parker test plan.

Now, most ready mixed paint that you buy at the store has water in it. It has to have. It wouldn't keep if it didn't.

Another thing. Mineral paint pigment and linseed oil fight each other when they are in a can together.

No canned paint is fresh paint—any more than canned corn can be fresh corn.

I make my Parker's Perfect Paint especially for the job of painting to be done. It is fresh when you get it. For two-coat work I give you a certain body—for three-coat work another body—and so on—so that the paint you get will be made especially to your order and for the exact number of coats that you want to put on.

Parker's Perfect Paint is made from pure material. The pigment is my own formula, containing pure white lead, zinc, coloring matter, dryer, etc. The linseed oil is the best that money can buy.

Selling paint by the job—and not by the gallon—protects you.

I tell you exactly how much it will cost to do your painting in any number of coats, and I guarantee you will have some paint left over.

Don't guess at the amount of paint you need.

In my new Paint Book I tell you just what I will charge you for the paint for your buildings—for the entire job—and I guarantee to furnish you at that price all the paint you need for the work.

Now no matter where you wish to write to me to find out how much a big paint manufacturer would charge you for the complete job. It will put you on what you ought to pay.

When you write I will send you my paint book "The Paint that Parker Makes." It tells the balance of this paint story and gives you a full line of colors to select from. My paint is guaranteed for ten years—and if you wish I will allow you six months time to pay for it.

It's this way. This is the fairest paint offer you ever heard of. My paint is the best paint on the market. You can take no risk in buying of me—in any way. I leave it all in your hands to decide.

If I didn't know my paint to be good surely I would not dare to sell it this way. It's reasonable to believe that I must be making the best paint in the world to make such an offer as this—more so than I.

Write for my Paint book at once—today. This offer, you see, will crowd my factory to its utmost. So you should write for the paint book without delay. Address:

The President, Parker Perfect Paint Co.,
201 S. Seventh St., St. Louis, Mo.

The reader will note that they emphasize the fact that Parker's Perfect Paint is made from pure materials. They specifically say in this advertisement: "The pigment is my own formula, containing pure white lead, zinc, coloring matter, dryer, etc. The linseed oil is the best that money can buy."

Our analysis for this product is shown in the following:

Station No. 167. "Made for You" House Paint, Tint No. 540.

The Parker Perfect Paint Co., St. Louis, Mo.

Net weight.....	9lb 9 oz.
Capacity of can.....	3.37 qts.
Contents	2.42 qts.
	Per cent.
Pigment by weight.....	67.10
Fluid portion by weight.....	32.90
	100.00

Analysis of Vehicle.

	Per cent.
*Linseed oil.....	83.9
Benzine dryer.....	4.3
Water	11.8
	100.00

Analysis of Pigment.

	Per cent.
White Lead	60.00
Lead sulphate.....	4.73
Zinc oxide.....	24.34
Calcium carbonate.....	4.47
Barium sulphate.....	66.26
Undetermined, color, etc.....	0.20
	100.00

*A very poor grade of oil.

In the first place the size of can, like that of all catalogue houses is an odd one; instead of being a normal one holding full four quarts the capacity of the can is in reality 3.37 quarts. One has a right to infer that he is purchasing a paint made of pure white lead, zinc, coloring matter, etc. Now unless "etc." is to be considered as an essential constituent in the paint, the statements made by the manufacturer in both his advertisement and the pamphlet are absolutely false and misleading. They are apparently intended to deceive the public. For, in reality, there is no white lead present, zinc oxide constitutes but one-fourth of the pigment, while two-thirds of this product is barytes costing not to exceed three-fourths of a cent per pound. The dryer is benzine, and the fluid portion contains 11.8 per cent. of added water. In other words, we should say from beginning to end this is another of the big frauds in the paint industry, and the public have a right to know of the character of such goods, and the manufacturer should be prosecuted for the false claims which have been set up.

Station No. 175. Ajax Prepared Paint. Outside White.

Peninsular Paint & Varnish Co., Detroit, Mich.

"Durable Economical."

Net weight.....	7lb 6 oz.
Capacity of can.....	2.06 qts.
Contents.....	2.03 qts.

100.00

Per cent.

Pigment by weight.....	61.5
Fluid portion by weight.....	38.5

100.00

Analysis of Vehicle.

	Per cent.
Linseed oil.....	79.5
Benzine dryer.....	11.2
Water.....	9.3
	100.00

Analysis of Pigment.

	Per cent.
White lead.....	25.94
Lead sulphate.....	11.39
Zinc oxide.....	41.17
Calcium carbonate.....	9.58
Barytes and silica.....	11.01
Undetermined,.....	0.91
	100.00

Station No. 9. Peoples' Prepared Paint.

Outside white ready mixed for use. Manufacturer not given.

Net weight.....	13.5 oz.
Capacity of can.....	0.30 qts.
Contents.....	0.23 qts.

Fluid portion not pure linseed oil.

Analysis of Pigment.

	Per cent.
Lead calculated as white lead.....	2.27
Zinc oxide.....	44.44
Calcium carbonate.....	11.54
Gypsum.....	40.62
Silica, etc.....	1.13
	100.00

Station No. 173. Pitkin's Premium Paint, Light Stone Gray, No. 914.

Geo. W. Pitkin, Co., Chicago.

"We guarantee the contents of this package, when used according to directions, under proper conditions, to wear longer than any mixture of lead and oil and not to chalk, crack, or peel off. If it fails to be as we represent, we will furnish new goods to repaint free of charge."

Net weight.....	5lb 12 oz.
Capacity of can.....	1.95 qta.
Contents	1.86 qta.

	Per cent.
Pigment by weight.....	51.8
Fluid portion by weight.....	48.2
	100.00

Analysis of Vehicle.

	Per cent.
Linseed oil.....	63.9
*Dryer	20.4
Water	15.7
	100.00

Analysis of Pigment.

White lead.....	00.00
Lead sulphate.....	1.30
Zinc oxide.....	70.68
Calcium carbonate.....	1.07
Silica	25.03
Color and undetermined.....	1.92
	100.00

*About two-thirds benzine.

Station No. 154. Diamond Brand Ready Mixed Paint,—Outside White.

The T. M. Roberts Supply Co., Minneapolis, Minn.

"First Quality."

Station No. 155. Diamond Brand Ready Mixed Paints,

	No. 154	No. 155
Net weight.....	5lb 11 oz.	6lb 3 oz.
Capacity of can.....	1.95 qta.	1.95 qta.
Contents	1.75 qta.	1.92 qta.
	Per cent.	Per cent.
Pigment by weight.....	55.1	54.6
Fluid portion by weight.....	44.9	45.4
	100.00	100.00

Analysis of Vehicle.

	Per cent.	Per cent.
*Linseed oil.....	57.2	54.4
Benzine dryer.....	26.7	28.9
Water	16.1	16.7
	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.
White lead.....	0.00	0.00
Lead sulphate.....	3.82	3.11
Zinc oxide.....	27.49	24.67
Calcium carbonate.....	45.38	40.07
Barytes	22.80	22.10
Clay and Silica.....		7.26
Undetermined, color, etc.....	0.51	2.79
	100.00	100.00

*Not first grade oil.

Not only is there short measure but the proportion of fluid to solids is exceptionally large and nearly one-half of the fluid is water and benzine and about 70 per cent. of the pigment is lime, barytes and clay. The paint is one of the most inferior examined.

Station No. 59. Green Seal House Paint,—Outside White.
Name of manufacturer not given. Can bears no guarantee.

Station No. 60. Lion Brand Mixed Paint,—Outside White.
St. Paul White Lead Co., St. Paul, Minn.

"For body this paint is unequalled. Its durability guaranteed."

"When properly applied, we guarantee Lion Brand paint to give satisfaction as to covering capacity, durability and finish."

	No. 59	No. 60
Net weight.....	3lb 8 oz.	7lb 0 oz.
Capacity of can.....	1.02 qts.	2.04 qts.
Contents	.95 pt.	1.94 qts.
	100.00	100.00

	Per cent.	Per cent.
Pigment by weight.....	60.8	61.2
Fluid portion by weight.....	39.2	38.8
	100.00	100.00

Analysis of fluid portion.

	Per cent.	Per cent.
	No. 59	No. 60
Vegetable oil.....	91.8	92.6
Volatile oil.....	4.9	4.1
Water	3.3	3.3
	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.
	No. 59	No. 60
White lead.....	21.53	20.65
Lead sulphate.....	6.03	7.76
Zinc oxide.....	39.13	41.27
Calcium carbonate.....	11.97	10.98
Barium sulphate.....	16.12	15.84
Silica and alumina (calculated as clay)...	3.08	3.16
Undetermined	0.14	0.34
	100.00	100.00

Station No. 127. Lion Brand Mixed Paint, Tint No. 42.
St. Paul White Lead Co., St. Paul, Minn.

"For body this paint is unequalled. Its durability is guaranteed. It has a fine gloss surface."

"Lion Brand Paint is a perfectly pure paint, composed only of pure Old Dutch Process Carbonate of Lead, Oxide of Zinc, or the necessary coloring pigments. Pure Old Process Linseed Oil and the very best dryer, and contains no adulteration whatever."

Station No. 176. Lion Brand Mixed Paint.—Outside White.

	No. 127	No. 176
Net weight.....	7lb 5 oz.	8lb 4 oz.
Capacity of can	2.06 qts.	2.06 qts.
Contents	1.96 qts.	2.01 qts.
	No. 127	No. 176
Pigment by weight.....	59.9	63.8
Fluid portion by weight.....	40.1	36.2
	100.00	100.00

Analysis of Vehicle.

	Per cent.	Per cent.
	No. 127	No. 176
Linseed oil.....	93.4	91.9
*Dryer	6.4	7.0
Water	0.2	1.1
	100.00	100.00

*About two-thirds turpentine and one-third benzine.

Analysis of Pigment.

	Per cent.	Per cent.
White lead.....	43.09	49.47
Lead sulphate.....	2.13	0.12
Zinc oxide.....	54.48	50.18
Undetermined, color, etc.....	0.30	0.23
	100.00	100.00

The company claim to have purchased the drier for a pure turpentine product and guarantee that this shall be true of their paints.

Station No. 87. S. W. P. Paint, Gloss White for Outside Use.

The Sherwin Williams Co.,

Guarantee. "We guarantee that this paint when properly used, will not crack, flake or chalk off, and will cover more surface, work better, wear longer and permanently look better than other paints including pure lead and oil.

We hereby agree to forfeit the value of the paint and the cost of applying it, if in any instance it is not found as above represented."

Station No. 109. S. W. P. Paint, Tint No. 351.

Same guarantee as above.

Station No. 128. S. W. P. Paint, Tint No. 484 (dark green.)

	No. 87	No. 109	No. 128
Net weight.....	8lb 1 oz.	6lb 12 oz.	4lb 1 oz.
Capacity of can.....	2.04 qts.	2.04 qts.	1.03 qts.
Contents.....	2.00 qts.	1.98 qts.	.99 qts.
	Per cent.	Per cent.	Per cent.
Pigment by weight.....	62.6	54.9	63.6
Fluid portion by weight..	37.4	45.1	37.0
	100.00	100.00	100.00

Analysis of Vehicle.

	Per cent.	Per cent.	Per cent.
Linseed oil.....	86.0	84.7	87.2
Turpentine drier.....	12.6	13.8	17.5
Water.....	1.4	1.5	4.3
	100.00	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.	Per cent.
White lead.....	44.08	27.29	Consists of color
Lead sulphate.....	4.62	4.39	precipitated
Zinc oxide.....	41.41	50.94	on an
Calcium carbonate.....	4.59	7.10	inert
Magnesium silicate.....	5.30	6.94	base.
Color.....		3.34	
	100.00	100.00	

Station No. 38. Monarch Mixed Paint,—Outside White.

Senour Manufacturing Co., Chicago, Ill.

Guarantee. The contents of this package is composed of linseed oil, turpentine, lead and zinc, and we guarantee it to be an absolutely pure paint, free from benzine, water or alkalies of any kind and to give satisfaction in every instance where directions are followed.

Station No. 137. Monarch Mixed Paint,—Outside White.

100 PER CENT PURE. Guarantees same as No. 140.

	No. 38	No. 137
Net weight.....	0lb 14.2 oz.	7lb 0 oz.
Capacity of can.....	0.30 qts.	2.06 qts.
Contents.....	.24 qt.	1.95 qts.

	Per cent.	Per cent.
Pigment by weight.....	62.8	58.7
Fluid portion by weight	37.2	41.3
	100.00	100.00

Analysis of Vehicle.

	Per cent.	Per cent.
Linseed oil.....	77.9	93.1
Turpentine drier.....	22.1	6.8
Water	0.0	0.1
	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.
White lead.....	18.84	28.17
Lead sulphate.....		0.32
Zinc oxide.....	80.45	71.24
Undetermined	0.71	0.27
	100.00	100.00

Station No. 140. Monarch Mixed Paint, Light Drab, No. 504.

100 PER CENT PURE. Senour Mfg. Co., Chicago, Ill.

Guarantee. "We guarantee our Monarch Paint (excepting a few dark shades that cannot be prepared from lead and zinc alone) to be composed of Pure White Lead, Pure Oxide of Zinc, Pure Linseed Oil, Pure Color and Turpentine Drier; to be free from benzine, water or alkalies and to give satisfaction in every instance where directions are followed.

Station No. 172. Monarch Mixed Paint, Olive Gray, No. 544.

100 PER CENT PURE. Guarantee same as No. 140.

	No. 140	No. 172
Net weight.....	6lb 6 oz.	3lb 7 oz.
Capacity of can.....	2.06 qts.	1.03 qts.
Contents	1.93 qts.	.96 qts.
	100.00	100.00

Per cent. Per cent.

Pigment by weight.....	56.6	55.4
Fluid portion by weight.....	43.4	44.6
	100.00	100.00

Analysis of Vehicle.

	Per cent.	Per cent.
Linseed oil.....	92.9	91.9
Turpentine drier.....	7.0	7.9
Water	0.1	0.3
	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.
White lead.....	26.57	39.11
Lead sulphate.....	0.78	0.39
Zinc oxide.....	62.34	57.88
Color	10.31	2.62
Clay and Silica.....	5.56	
Iron oxide.....	3.02	
Carbon and undetermined.....	1.73	
	100.00	100.00

The Senour Co., through its president, recently gave notice that all paint from their house would be in strict conformity with the North Dakota paint law and would thereafter be made on a basis of 50 per cent. white lead and 50 per cent. zinc oxide and pure colors.

Station No. 48. Seroco Ready Mixed Paint—Outside White.

Seroco Paint Mfg. Co., Chicago, Ill.

Obtained from Sears, Roebuck & Co., Chicago.

"We guarantee our paint to wear for five years if these directions (given on label) are carefully followed."

Station No. 183. Seroco Ready Mixed Paint, Tint No. 201, (Gray.)

"We guarantee our mixed paints to wear five years if the directions are carefully followed."

	No. 48	No. 183
Net weight.....	3 lb 2 oz.	5 lb 10 oz.
Capacity of can.....	1.01 qts.	1.95 qts.
Contents	.96 qt.	1.70 qts.

	Per cent.	Per cent.
Pigment by weight.....	63.1	57.9
Fluid portion by weight.....	36.9	42.2
	100.00	100.00

Analysis of Vehicle.

	Per cent.	Per cent.
*Vegetable oil.....	72.2	77.9
Benzine drier.....	3.8	7.6
Water.....	24.0	14.5
	100.00	100.00

*Apparently low grade linseed oil.

Analysis of Pigment.

	Per cent.	Per cent.
*White lead.....	13.85	0.00
Lead sulphate.....		14.23
Zinc oxide.....	34.88	37.57
Calcium carbonate.....	26.84	41.70
Barytes and Silica.....	23.10	6.10
Undetermined, color, etc.....	1.33	0.40
	100.00	100.00

Station No. 63. Stearn's Paint,—Outside White.

Made and guaranteed by Stearns Paint Mfg. Co., Davenport, Iowa.

We guarantee the Stearns Anchor Brand Paint to be made of the following material, either carbonate of lead and zinc white, or such coloring and pigment as we deem necessary to produce desired shades, finely ground and tested raw linseed oil, turpentine and a very slight proportion of coach Japan and we hereby guarantee to pay \$100 in gold in any case where the contrary can be proven.

Net weight.....	8 lb 15 oz.
Capacity of can.....	1.04 qts.
Contents	.98 qts.

	Per cent.
Pigment by weight.....	63.8
Fluid portion by weight.....	36.2
	100.00

*Lead calculated to white lead.

Analysis of Pigment.

	Per cent.
White lead.....	38.73
Lead sulphate.....	3.89
Zinc oxide.....	56.75
Undetermined,	0.63
	100.00

Station No. 150. Gold Medal Mixed Paint, Tint W-17 (blue.)

F. W. Woolworth & Co.

"This paint is suitable for inside or outside work. The colors are always uniform and in covering and wearing capacity it is unexcelled."

The contents of this package is as follows:

Vehicle. Linseed oil, 63 per cent., Japan drier 24 per cent., Water, 13 per cent.

Pigments. Leaded Zinc, 48 per cent., Calcium Carbonate, 42 per cent., Barytes, 10 per cent. Together with the necessary coloring matter to produce the desired tint.

Net weight.....	0lb 14.5 oz.
Capacity of can.....	.33 qts.
Contents	.28 qts.

	Per cent.
Pigment by weight.....	57.0
Fluid portion by weight.....	43.0
	100.00

Analysis of Vehicle.

	Per cent.
Linseed oil.....	60.4
Benzine drier.....	25.7
Water	13.9
	100.00

Analysis of Vehicle.

	Per cent.
Linseed oil.....	91.8
Volatile oil.....	5.4
Water	2.8
	100.00

Analysis of Pigment.

	Per cent.
White lead.....	0.00
Lead sulphate.....	17.77
Zinc oxide.....	33.58
Calcium carbonate.....	39.88
Barium sulphate.....	6.40
*Color	2.37
	100.00

The above paint is an exceedingly inferior product in its physical make up as well as in composition.

Station No. 67. Star Brand Mixed Paint,—Outside White.

United States Paint Co., Chicago Ill.

Sample bought from Montgomery Ward & Co.

Station No. 184. Star Brand Mixed Paint, Tint 37, Lead Color.

	No. 67	No. 184
Net weight.....	3lb 3 oz.	6lb 4 oz.
Capacity of can.....	1.05 qts.	1.94 qts.
Contents	1.01 qts.	1.76 qts.

*Largely organic, soluble in petroleum ether.

	Per cent.	Per cent.
Pigment by weight.....	55.4	59.2
Fluid portion by weight.....	44.6	40.8
	100.00	100.00

Analysis of Vehicle.

	Per cent.	Per cent.
*Vegetable oil.....	64.5	79.5
Benzine drier.....	17.5	6.9
Water	18.0	13.7
	100.00	100.00

Analysis of Pigment.

	Per cent.	Per cent.
White lead.....	15.24	0.00
Lead sulphate.....	3.77	26.07
Zinc oxide.....	30.25	24.01
Calcium carbonate.....	28.45	40.97
Magnesium carbonate.....	3.15	
Barium sulphate.....	8.55	7.66
Silica	0.98	
Undetermined, color, etc.....	0.61	1.29
	100.00	100.00

Letters addressed to the United States Paint Co., Chicago, are returned to the writer showing that no such firm is known to the postal authorities. The above paints are very similar to the others purchased through Montgomery Ward & Co.

*Apparently a very low grade of linseed oil.

Table showing contents per gallon and per cent. of shortage by volume.

Sheet No.	BRAND OF PAINT	Per Cent. Volume	Per Gallon by Volume	Shortage of Contents	Per cent. of shortage
62	Acme Household Paint.....	white	71.7	14.14	4.0
116	New Era Paint.....	white	52.9	16.4	
117	New Era Paint.....	tint	41.7	14.14	1.5
165	Armstrong's Mixed Paint.....	white	54.4	15.8	5.5
166	Armstrong's Mixed Paint.....	tint	45.6	12.9	12.0
106	Atlas Paint.....	tint	45.6	14.0	1.0
125	Atlas Paint.....	tint	45.2	14.12	6.0
41	"N. W." Mixed Paint.....	white	57.9	12.4	11.0
86	"N. W." Mixed Paint.....	tint	58.0	15.8	2.0
146	"N. W." Mixed Paint.....	tint	42.1	12.8	4.0
122	Crown Cottage Colors.....	white	52.0	15.0	1.2
121	Crown Cottage Colors.....	tint	44.1	14.5	1.5
142	Brink's L. S. Paint.....	white	17.5	20.4	6.0
170	O. L. Chase.....	tint	47.0	16.13	14.5
189	Champion Ready Mixed Paint.....	white	45.9	12.0	1.0
169	Champion Ready Mixed Paint.....	tint	50.1	11.8	10.0
153	Detroit W. L. W.'s Liquid Paint.....	tint	43.2	14.8	5.0
146	Devco's Lead and Zinc Paint.....	white	43.4	12.6	7.0
147	Devco's Lead and Zinc Paint.....	tint	43.3	12.10	6.0
49	Echster's Durable Paint.....	white	16.1	19.8	2.0
55	Exall Mixed Paint.....	white	41.1	12.4	6.0
56	Exall Mixed Paint.....	white	40.2	11.5	
118	Republic Brand Mixed Paint.....	white	40.8	15.1	1.5
119	Republic Brand Mixed Paint.....	tint	41.4	14.8	3.5
40	Gilt Edge House Paint.....	Inside White	37.1	12.0	1.0
112	Gilt Edge House Paint.....	Outside White	36.8	16.0	2.5
177	Prepared Parian Paint.....	white	25.0	15.0	4.0
156	Golden Rule Paint.....	tint	40.4	12.40	9.0
129	Town & Country Mixed Paint.....	white	37.3	15.8	
114	Town & Country Mixed Paint.....	tint	42.9	14.8	
180	Town & Country Mixed Paint.....	white	36.8	15.8	0.5
181	Town & Country Mixed Paint.....	tint	40.0	15.0	2.0
43	Best Prepared Paint.....	white	36.4	16.8	1.0
108	Best Prepared Paint.....	tint	32.7	15.10	1.0
160	Best Prepared Paint.....	tint	22.7	16.0	5.0
84	High Standard Liquid Paint.....	white	35.7	15.12	3.0
113	High Standard Liquid Paint.....	tint	42.2	15.2	1.5
105	Tinted Gloss Paint.....	white	24.9	12.9	7.0
71	House Paint—Minnesota.....	white	24.6	16.4	2.5
125	House Paint—Minnesota.....	tint	24.2	16.3	8.2
64	Tower Brand Mixed Paint.....	white	35.2	14.8	5.0
185	Tower Brand Mixed Paint.....	tint	41.1	12.12	9.0
87	Favorite House Paint.....	white	45.7	14.5	12.0
102	Horse Shoe Prepared Paint.....	tint	40.0	14.12	
149	Horse Shoe Prepared Paint.....	white	35.7	15.2	6.0

Street No.	BRAND OF PAINT	Per Cent Vehicle	Pounds per Gallon	Shortage of Contents	Percent of contents
174	Gold Medal Mixed Paint.....	tint	39.3	14.0	
88	"N. B. & O." St. Paul Paint.....	white	37.4	14.12	4.0
151	"N. B. & O." St. Paul Paint.....	white	37.0	15.0	2.5
144	Patton's Sun Proof Paint.....	white	34.4	17.0	1.0
145	Patton's Sun Proof Paint.....	tint	37.9	15.12	1.0
50	B. P. S. Paint.....	white	35.6	14.0	12.0
61	B. P. S. Paint.....	white	35.8	15.4	1.0
153	B. P. S. Paint.....	tint	45.1	14.12	3.0
167	"Made for You" Paint.....	tint	32.9	9.9	39.5
175	Ajax Brand.....	white	35.6	14.12	
9	Peoples Paint.....	white		13.8	8.0
173	Fitkin's Premium Paint.....	tint	48.2	11.8	7.0
164	Diamond Brand Mixed Paint.....	white	44.9	11.6	2.5
155	Diamond Brand Mixed Paint.....	tint	45.4	12.8	4.0
59	Green Seal House Paint.....	white	39.2	14.0	5.0
60	Lion Brand Mixed Paint.....	white	35.8	14.0	3.0
176	Lion Brand Mixed Paint.....	white	35.2	16.6	
127	Lion Brand Mixed Paint.....	tint	40.1	14.10	2.0
87	Sherwin Williams Paint.....	white	37.4	16.2	
109	Sherwin Williams Paint.....	tint	45.1	13.5	1.0
35	Monarch Brand Mixed Paint.....	Inside white	37.2	14.3	4.0
137	Monarch Brand Mixed Paint.....	white	41.3	14.0	2.5
140	Monarch Brand Mixed Paint.....	tint	43.4	12.12	3.5
172	Monarch Brand Mixed Paint.....	tint	44.6	13.12	4.0
48	Seroco Brand Mixed Paint.....	white	35.9	12.5	4.0
183	Seroco Brand Mixed Paint.....	tint	42.2	11.4	15.0
67	Star Brand Mixed Paint.....	white	44.6	12.12	
184	Star Brand Mixed Paint.....	tint	40.7	12.8	12.0
150	Gold Medal Mixed Paint.....	tint	43.0	16.14	15.0