

12-26-2000



101561442  
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New

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Correction of PTO Error  
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Conveyance Type

Assignment  License

Security Agreement  Nunc Pro Tunc Assignment

Merger  
Effective Date  
Month Day Year

Change of Name

Other

Conveying Party

Mark if additional names of conveying parties attached

Execution Date  
Month Day Year

Name

Formerly

Individual  General Partnership  Limited Partnership  Corporation  Association

Other

Citizenship/State of Incorporation/Organization

Receiving Party

Mark if additional names of receiving parties attached

Name

DBA/AKA/TA

Composed of

Address (line 1)

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Other

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TRADEMARK  
REEL: 002199 FRAME: 0117

**Domestic Representative Name and Address**

Enter for the first Receiving Party only.

Name

Address (line 1)

Address (line 2)

Address (line 3)

Address (line 4)

**Correspondent Name and Address**

Area Code and Telephone Number

Name

Address (line 1)

Address (line 2)

Address (line 3)

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**Pages**

Enter the total number of pages of the attached conveyance document including any attachments.

#

**Trademark Application Number(s) or Registration Number(s)**

Mark if additional numbers attached

Enter either the Trademark Application Number or the Registration Number (DO NOT ENTER BOTH numbers for the same property).

Trademark Application Number(s)

Registration Number(s)

**Number of Properties**

Enter the total number of properties involved.

#

**Fee Amount**

Fee Amount for Properties Listed (37 CFR 3.41):

\$

Method of Payment:

Enclosed

Deposit Account

Deposit Account

(Enter for payment by deposit account or if additional fees can be charged to the account.)

Deposit Account Number:

#

Authorization to charge additional fees:

Yes

No

**Statement and Signature**

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document. Charges to deposit account are authorized, as indicated herein.

Alan W. Scheufler, Esq.

Name of Person Signing



Signature

12-05-00

Date Signed

# PATENT, TRADEMARK, COPYRIGHT AND LICENSE MORTGAGE

THIS PATENT, TRADEMARK, COPYRIGHT AND LICENSE MORTGAGE (the "**Mortgage**") made effective as of the 2<sup>nd</sup> day of June, 1999, by INTERNATIONAL COATING AND CHEMICAL COMPANY, INC., a Ohio Corporation, with offices at 32400 Aurora Road, Solon, Ohio 44139-0247 ("**Mortgagor**") in favor of OHIO MEZZANINE FUND, LTD., An Ohio Limited Liability Company, with offices at 5005 Rockside Road, Suite 600, Cleveland, Ohio 44131 ("**Mortgagee**"):

## WITNESSETH:

**WHEREAS**, Mortgagor and Mortgagee are parties to a certain Loan Agreement (the "**Loan Agreement**") and other related loan documents of even date herewith (collectively, with the Loan Agreement, the "**Loan Documents**"), which Loan Documents provide (i) for Mortgagee, from time to time, to extend credit to or for the account of Mortgagor, and (ii) for the grant by Mortgagor to Mortgagee of a security interest in certain of Mortgagor's assets, including, without limitation, those described hereinbelow;

**NOW, THEREFORE**, in consideration of the premises set forth herein and for other good and valuable consideration, receipt and sufficiency of which are hereby acknowledged, Mortgagor agrees as follows:

1. **Incorporation of Loan Documents.** The Loan Documents and the terms and provisions thereof are hereby incorporated by reference herein in their entirety. All capitalized terms herein but not otherwise defined shall have the same meanings as in the Loan Documents.

2. **Mortgage of Patents, Trademarks, Copyrights and Licenses.** To secure the complete and timely satisfaction of all of Mortgagor's liabilities and obligations pursuant to the Loan Documents, Mortgagor hereby grants, bargains, assigns, mortgages, pledges, sells, creates a security interest in, transfers and conveys to Mortgagee, as and by way of a first mortgage and security interest having priority over all other security interests, with power of sale, to the extent permitted by law, in all of Mortgagor's right, title and interest in and to all of the following, whether now owned or existing or hereafter created or acquired:

(i) patents and patent applications, including, without limitation, the inventions and improvements described and claimed therein, and those patents listed on Exhibit A attached hereto and hereby made a part hereof, and (a) the reissues, divisions, continuations, renewals, extensions and continuations-in-part thereof, (b) all income, damages and payments now and hereafter due or payable under or with respect thereto, including, without limitation, damages and payments for past or future infringements thereof, (c) the right to sue for past, present and future infringements thereof, and (d) all rights corresponding thereto throughout the world, if any (all of the foregoing patents and applications, together with the items described in clauses (a)-(d) of this subsection 2.(i), are sometimes hereinafter referred to individually as a "**Patent**" and, collectively, as the "**Patents**");

(ii) trademarks, trademark registrations, trademark applications, trade names and tradestyles, brand names, service marks, service mark registrations and service mark applications,

including, without limitation, the trademarks, trade names, brand names, service marks and applications and registrations thereof listed on Exhibit B attached hereto and hereby made a part hereof, and (a) renewals or extensions, thereof, (b) all income, damages and payments now and hereafter due or payable with respect thereto, including, without limitation, damages and payments for past or future infringements thereof, (c) the right to sue for past, present and future infringements thereof, and (d) all rights corresponding thereto throughout the world (all of the foregoing trademarks, trade names and tradestyles, brand names, service marks and applications and registrations thereof, together with the items described in clauses (a)-(d) of this subsection 2.(ii), are sometimes hereinafter referred to individually as a "**Trademark**" and, collectively, as the "**Trademarks**");

(iii) copyrights, copyright registrations and copyright applications, including, without limitation, the copyrights, copyright registrations and copyright applications listed on Exhibit C attached hereto and hereby made a part hereof, and (a) renewals or extensions, thereof, (b) all income, damages and payments now and hereafter due or payable with respect thereto, including, without limitation, damages and payments for past or future infringements thereof, (c) the right to sue for past, present and future infringements thereof, and (d) all rights corresponding thereto throughout the world (all of the foregoing copyrights, copyright registrations and copyright applications, together with the items described in clauses (a)-(d) of this subsection 2.(iii), are sometimes hereinafter referred to individually as a "**Copyright**" and, collectively, as the "**Copyrights**");

(iv) license agreements (to the extent such license agreements may be assigned without violating the terms of any such license agreement) with respect to any of the Patents or the Trademarks or any other patent, trademark, service mark or any application or registration thereof or any other trade name or tradestyle between Mortgagor and any other party, whether Mortgagor is a licensor or licensee under any such license agreement, including, without limitation, the licenses listed on Exhibit D attached hereto and hereby made a part hereof (all of the foregoing license agreements and Mortgagor's rights thereunder are referred to collectively as the "**Licenses**");

(v) the products and proceeds of all Patents, Trademarks, Copyrights and Licenses;  
and

(vi) the goodwill of Mortgagor's business connected with and symbolized by the Trademarks.

3. **Warranties and Representations.** Mortgagor warrants and represents to Mortgagee that, to the best knowledge of the Mortgagor:

(i) no Patent, Trademark, Copyright or License has been adjudged invalid or unenforceable nor has any such Patent, Trademark, Copyright or License been cancelled, in whole or in part and each such Patent, Trademark, Copyright and License is presently subsisting;

(ii) each Patent, Trademark, Copyright and License material to the Mortgagor's business is valid and enforceable;

(iii) Mortgagor is the sole and exclusive owner of the entire and unencumbered right, title and interest as they may appear in and to each Patent, Trademark, Copyright and License, free and clear of any liens (subject to the lien of Stanley Levine, which lien is subject to a Subordination Agreement with Mortgagee) , charges and encumbrances, including without limitation licenses, shop rights and covenants by Mortgagor not to sue third persons;

(iv) Mortgagor has adopted, used and is currently using all of the Trademarks;

(v) Mortgagor has no notice of any suits or actions commenced or threatened with reference to the Patents, Trademarks, Copyrights or Licenses; and

(vi) Mortgagor has the unqualified right to execute and deliver this Mortgage and perform its terms (subject to the lien of Stanley Levine, which lien is subject to a Subordination Agreement with Mortgagee) .

**4. Restrictions on Future Agreements.** Except with respect to the lien granted to Stanley Levine and the manufacturing agreements pertaining to the manufacture of goods and products protected by the patents, trademarks and other registrations described hereunder, Mortgagor agrees that until all liabilities and obligations pursuant to the Loan Documents shall have been satisfied in full, Mortgagor shall not, without the prior written consent of Mortgagee (which consent will not be unreasonably withheld or delayed), sell or assign its interest in, or grant any license or sublicense under the Patents, Trademarks, Copyrights or Licenses, or enter into any other agreement with respect to the Patents, Trademarks, Copyrights or Licenses, and Mortgagor further agrees that, without the prior written consent of Mortgagee (which consent will not be unreasonably withheld or delayed), it shall not take any action or permit any action to be taken by others subject to its control, including licensees, or fail to take any action which would affect the validity of the rights transferred to Mortgagee under this Mortgage.

**5. New Patents, Trademarks, and Licenses.** Mortgagor represents and warrants that the Patents, Trademarks, Copyrights and Licenses listed on Exhibits A, B, C and D, respectively, constitute all of the Patents, Trademarks, Copyrights and Licenses now owned by Mortgagor. If, before all liabilities and obligations pursuant to the Loan Documents shall have been satisfied in full, Mortgagor shall (i) become aware of any existing Patents, Trademarks, Copyrights or Licenses of which Mortgagor has not previously informed Mortgagee, (ii) obtain rights to any new patentable inventions, Patents, Trademarks, Copyrights or Licenses, or (iii) become entitled to the benefit of any Patents, Trademarks, Copyrights or Licenses which benefit is not in existence on the date hereof, the provisions of this Mortgage above shall automatically apply thereto and Mortgagor shall give to Mortgagee prompt written notice thereof. Mortgagor hereby authorizes Mortgagee to modify this Mortgage by amending Exhibits A, B, C and D, as applicable, to include any such Patents, Trademarks, Copyrights and Licenses.

**6. Royalties; Terms.** The term of the mortgages granted herein shall extend until the earlier of (i) the expiration of each of the respective Patents, Trademarks, Copyrights and Licenses assigned hereunder, or (ii) the payment in full of all liabilities and obligations pursuant to the Loan Documents. Mortgagor agrees that upon the occurrence of an event of default under any one or more of the Loan Documents (a "Event of Default"), Mortgagee shall have a perpetual, worldwide

right to use the Patents, Trademarks, Copyrights and Licenses, except as limited by their terms, and without any liability for royalties or other related charges from Mortgagee to Mortgagor.

7. **Grant of License to Mortgagor.** Unless and until an Event of Default shall have occurred, Mortgagee hereby grants back to Mortgagor the exclusive, nontransferable right and license to use the Trademarks in the ordinary course of its business, to exercise Mortgagee's rights under the Licenses, and to make, have made, use and sell the inventions disclosed and claimed in the Patents for Mortgagor's own benefit and account. Mortgagor shall use the Trademarks only on goods of at least as high quality as the goods on which Mortgagor or its predecessor used the goods prior to the date hereof. Mortgagor agrees not to sell or assign its interest in, or grant any sublicense under, the license granted to Mortgagor in this Section 7, without the prior written consent of Mortgagee (which consent will not be unreasonably withheld or delayed). From and after the occurrence of an Event of Default (subject to applicable rights of notice and opportunity of Mortgagor to cure, if any), Mortgagor's license with respect to the Patents, Trademarks, Copyrights and Licenses set forth in this Section 7 shall terminate upon receipt by Mortgagor of written notice of such termination from Mortgagee, and Mortgagee shall have, in addition to all other rights and remedies given it by this Mortgage, those allowed by law and the rights and remedies of a secured party under the Uniform Commercial Code as enacted in Ohio.

8. **Mortgagee's Right to Inspect.** Upon at least two (2) days prior notice to Mortgagor, Mortgagee shall have the right, at any time and from time to time during normal business hours and prior to payment in full of all liabilities and obligations pursuant to the Loan Documents, to inspect Mortgagor's premises and to examine Mortgagor's books, records and operations, including, without limitation, Mortgagor's quality control processes. Mortgagor agrees (i) to maintain the quality of any and all products in connection with which the Trademarks are used, reasonably consistent with the quality of said products as of the date hereof and (ii) to provide Mortgagee, upon Mortgagee's written request from time to time, with a certificate of an officer of Mortgagor certifying Mortgagor's compliance with the foregoing. Upon the occurrence of an Event of Default, Mortgagor agrees that Mortgagee, or a conservator appointed by Mortgagee, shall have the right to establish such additional product quality controls as Mortgagee, or said conservator, in its sole judgment, may reasonably deem necessary to assure maintenance of the quality of products sold by Mortgagor under the Trademarks. The foregoing notwithstanding, unless and until an Event of Default shall have occurred, Mortgagee agrees to hold confidential and not disclose or use any information regarding any Patent, Trademark, Copyright or License unless such disclosure is required by applicable law or court order. This obligation shall survive the termination of this Agreement, the release of the mortgage herein and such reassignment of the Patents, Trademarks, Copyrights or Licenses, as applicable, unless such termination is due to an Event of Default.

9. **Release of Mortgage.** This Mortgage is made for collateral purposes only. Upon payment in full of all liabilities and obligations pursuant to the Loan Documents, Mortgagee shall promptly execute and deliver to Mortgagor all deeds, assignments and other instruments, and shall take such other actions, as the Mortgagor may reasonably deem necessary or proper to re-vest in Mortgagor full title to the Patents, Trademarks, Copyrights and Licenses, subject to any disposition thereof which may have been made by Mortgagee pursuant to the Loan Documents.

**10. Expenses.** All expenses incurred in connection with the performance of any of the agreements set forth herein shall be borne by Mortgagor. All fees, costs and expenses, of whatever kind or nature, including reasonable attorneys' and paralegals' fees and legal expenses, incurred by Mortgagee in connection with the filing or recording of any documents (including all taxes in connection therewith) in public offices, the payment or discharge of any taxes, counsel fees, maintenance fees, encumbrances or otherwise in protecting, maintaining or preserving the Patents, Trademarks, Copyrights and Licenses, or in defending or prosecuting any actions or proceedings arising out of or related to the Patents, Trademarks, Copyrights and Licenses, shall be borne by and paid by Mortgagor on demand by Mortgagee and until so paid shall be added to the principal under, and shall bear interest at the rate for, the Promissory Note issued as a part of the Loan Documents; provided, however, that following an Event of Default under the Loan Documents, if Mortgagee shall commence litigation to enforce or protect the Patents, Trademarks, Copyrights and or Licenses from infringement, Mortgagee shall bear all the expenses of such litigation and may only offset such expenses from any damages recovered as a result of such litigation (or the settlement thereof).

**11. Duties of Mortgagor.** Mortgagor shall have the duty (i) to file and prosecute diligently any patent, trademark or service mark applications pending as of the date hereof or hereafter until all liabilities and obligations pursuant to the Loan Documents shall have been paid in full, and (ii) to preserve and maintain all rights in the Patents, Trademarks, Copyrights and Licenses. Any expenses incurred in connection with Mortgagor's liabilities under this Section 11 shall be borne by Mortgagor. Mortgagor shall not abandon any right to file a patent, trademark or service mark application, or abandon any pending patent application, or any other Patent, Trademark, Copyright or License without the consent of Mortgagee (which consent will not be unreasonably withheld or delayed).

**12. Mortgagee's Right to Sue.** After an Event of Default (subject to applicable notice and opportunity of Mortgagor to cure, if any), Mortgagee shall have the right, but shall in no way be obligated, to bring suit in its own name to enforce the Patents, Trademarks, Copyrights and Licenses, and, if Mortgagee shall commence any such suit, Mortgagor shall, at the request of Mortgagee, do any and all reasonable and lawful acts and execute any and all reasonable and proper documents required by Mortgagee in aid of such enforcement and Mortgagor shall promptly, upon demand, reimburse and indemnify Mortgagee for all costs and expenses incurred by Mortgagee in the exercise of its rights under this Section 12.

**13. Waivers.** No course of dealing between Mortgagor and Mortgagee, nor any failure to exercise, nor any delay in exercising, on the part of Mortgagee, any right, power or privilege hereunder or under the Loan Documents shall operate as a waiver thereof; nor shall any single or partial exercise of any right, power or privilege hereunder or thereunder preclude any other or further exercise thereof or the exercise of any other right, power or privilege.

**14. Severability.** The provisions of this Mortgage are severable, and if any clause or provision shall be held invalid and unenforceable in whole or in part in any jurisdiction, then such invalidity or unenforceability shall affect only such clause or provision, or part thereof, in such jurisdiction, and shall not in any manner affect such clause or provision in any other jurisdiction, or any other clause or provision of this Mortgage in any jurisdiction.

15. **Modification.** This Mortgage cannot be altered, amended or modified in any way, except as specifically provided in Section 5 hereof or by a writing signed by the parties hereto.

16. **Cumulative Remedies; Power of Attorney; Effect on Loan Documents.** All of Mortgagee's rights and remedies with respect to the Patents, Trademarks and Licenses, whether established hereby or by the Loan Documents, or by any other agreements or by law shall be cumulative and may be exercised singularly or concurrently. Mortgagor hereby authorizes Mortgagee upon the occurrence of an Event of Default (subject to applicable notice and opportunity of Mortgagor to cure, if any), to make, constitute and appoint any officer or agent of Mortgagee as Mortgagee may select, in its sole discretion, as Mortgagor's true and lawful attorney-in-fact, with power to (i) endorse Mortgagor's name on all applications, documents, papers and instruments necessary or desirable for Mortgagee in the use of the Patents, Trademarks, Copyrights and Licenses, or (ii) take any other reasonable actions with respect to the Patents, Trademarks, Copyrights and Licenses as Mortgagee deems to be in the best interest of Mortgagee, or (iii) grant or issue any exclusive or non-exclusive license under the Patents, Trademarks, Copyrights or Licenses to anyone, or (iv) assign, pledge, convey or otherwise transfer title in or dispose of the Patents, Trademarks, Copyrights or Licenses to anyone. Mortgagor hereby ratifies all that such attorney shall lawfully do or cause to be done by virtue hereof. This power of attorney shall be irrevocable until all liabilities and obligations pursuant to the Loan Documents shall have been paid in full. Mortgagor acknowledges and agrees that this Mortgage is not intended to limit or restrict in any way the rights and remedies of Mortgagee under the Loan Documents but rather is intended to facilitate the exercise of such rights and remedies. Mortgagee shall have, in addition to all other rights and remedies given it by the terms of this Mortgage and the Loan Documents, all rights and remedies allowed by law and the rights and remedies of a secured party under the Uniform Commercial Code as enacted in Ohio.

17. **Binding Effect; Benefits.** This Mortgage shall be binding upon Mortgagor and its respective successors and assigns, and shall inure to the benefit of Mortgagee, its successors, nominees and assigns.

18. **Governing Law.** This Mortgage shall be governed by and construed in accordance with the internal laws of the State of Ohio.

19. **Headings.** Paragraph headings used herein are for convenience only and shall not modify the provisions which they precede.

20. **Further Assurances.** Mortgagor agrees to execute and deliver such further agreements, instruments and documents, and to perform such further acts, as Mortgagee shall reasonably request from time to time in order to carry out the purpose of this Mortgage and agreements set forth herein.



21. **Survival of Representations.** All representations and warranties of Mortgagor contained in this Mortgage shall survive the execution and delivery of this Mortgage and shall be remade on the date of each borrowing under the Loan Documents.

IN WITNESS WHEREOF, Mortgagor has duly executed this Mortgage in favor of Mortgagee, as of the date first written above.

ATTEST:

INTERNATIONAL COATING AND  
CHEMICAL COMPANY, INC.,  
a Ohio Corporation

J. H. R. [Signature]

By: [Signature]  
Its: PRESIDENT

AGREED AND ACCEPTED AS OF  
THIS 22 DAY OF June, 1999

OHIO MEZZANINE FUND, LTD.  
An Ohio Limited Liability Company

By: [Signature]

Its: Managing Director

STATE OF Ohio )  
 ) SS.  
COUNTY OF Cuyahoga )

The foregoing Patent, Trademark, Copyright and License Mortgage was executed and acknowledged before me this 22<sup>nd</sup> day June, 1999, by Neil Kuppelmann, personally known to me to be the President of International Chemical and Coating Company, Inc. a Corporation, on behalf of such Corporation.

[Signature]

Notary Public,

ALAN W. SCHEUFLER, Attorney  
NOTARY PUBLIC - STATE OF OHIO  
My commission has no expiration date  
Section 147.03 R.C.

County,

State of:

My Commission Expires:

**THIS INSTRUMENT PREPARED BY  
AND AFTER FILING RETURN TO:**

Alan W. Scheufler, Esq.  
Garfield & Lasko Co., L.P.A.  
1350 Euclid Avenue, Suite 1500  
Cleveland, Ohio 44115-1815

**EXHIBIT A**

**PATENTS**

<b><u>Patent No.</u></b>	<b><u>Date of Patent</u></b>	<b><u>Description of Patent</u></b>
4,719,254	Jan. 12, 1988	Epoxy Ester-Modified Alkyd Resin Enamel Formulations

**ALL AS FURTHER DESCRIBED ON THE ATTACHED**

The  
United  
States  
of  
America

The Commissioner of Patents  
and Trademarks

*Has received an application for a patent  
for a new and useful invention. The title  
and description of the invention are en-  
closed. The requirements of law have  
been complied with, and it has been de-  
termined that a patent on the invention  
shall be granted under the law.*

*Therefore, this*

United States Patent

*Grants to the person or persons having  
title to this patent the right to exclude  
others from making, using or selling the  
invention throughout the United States  
of America for the term of seventeen  
years from the date of this patent, sub-  
ject to the payment of maintenance fees  
as provided by law.*



*Donald J. Higgins*

*Commissioner of Patents and Trademarks*

*Melvinia Gary*  
Attest

TRADEMARK

REEL: 002199 FRAME: 0128

United States Patent [19]

[11] Patent Number: 4,719,254

Levine

[45] Date of Patent: Jan. 12, 1988

[54] EPOXY ESTER-MODIFIED ALKYD RESIN ENAMEL FORMULATIONS

3,015,637 1/1962 Rauner ..... 525/444.5  
3,493,414 2/1970 Hastings ..... 525/438

[75] Inventor: Stanley W. Levine, Phoenix, Ariz.

FOREIGN PATENT DOCUMENTS

[73] Assignee: International Coating & Chemical Company, Inc., Fairfield, Conn.

738660 10/1955 United Kingdom ..... 525/444.5

[21] Appl. No.: 867,240

Primary Examiner—C. Warren Ivy  
Attorney, Agent, or Firm—Kramer, Brufsky & Cifelli

[22] Filed: May 23, 1986

[57] ABSTRACT

[51] Int. Cl.<sup>4</sup> ..... C08L 67/08; C08L 63/10

Epoxy ester-modified alkyd resin formulations are provided comprising:

[52] U.S. Cl. .... 523/435; 523/456; 523/463; 525/438; 525/444.5; 525/463; 106/252; 106/253; 106/263

(i) from about 70 to 80 wt % soya modified alkyd resin;

(ii) from about 4.75 to 10 wt % epoxy ester resin;

(iii) from about 4.75 to 10 wt % silicone modified alkyd resin; and

(iv) from about 0.5 to 10 wt % compatible solvent.

[58] Field of Search ..... 523/435, 463, 456; 525/438, 444.5; 106/252, 253, 263

These alkyd resin formulations can be pigmented to provide a wide variety of pigmented, epoxy ester modified, air dry alkyd enamels.

[56] References Cited

U.S. PATENT DOCUMENTS

2,768,150 10/1956 Millar ..... 525/438  
2,843,560 7/1958 Mika ..... 523/435  
2,864,722 12/1958 Millar ..... 525/438

20 Claims, No Drawings

TRADEMARK

REEL: 002199 FRAME: 0129

### EPOXY ESTER-MODIFIED ALKYD RESIN ENAMEL FORMULATIONS

This invention relates to alkyd resin enamel formulations. More particularly, this invention relates to epoxy ester-modified alkyd resin air drying enamel formulations.

Alkyd-type resins are widely used in such varied applications as enamels, lacquers, textile finishes, metal primers, caulking compounds, slushing mixtures, protective coatings and films, leather coatings and water emulsion paints. These products may be applied by a wide variety of techniques including brushing, spraying, dipping, hot-melt, knife spreading, roller coating, and the like.

Because of the versatility of such alkyd-type resins and their reasonable cost, much effort has been devoted in recent years toward improving the properties and applications of these resins to further extend their usage. Of particular importance has been the effort to obtain enamels which impart high gloss, good weathering characteristics, and long life coupled with good adhesion to surfaces at reasonable cost.

These as well as other objects and advantages are accomplished by the present invention which provides epoxy ester-modified alkyd resin formulations, comprising:

- (i) from about 70 to 90 wt % soya modified alkyd resin;
- (ii) from about 4.75 to 10 wt % epoxy ester resin;
- (iii) from about 4.75 to 10 wt % silicone modified alkyd resin; and
- (iv) from about 0.5 to 10 wt % compatible solvent.

In addition, the enamel formulations of the present invention can also contain from about 0 to 5 wt % of conventional additives such as anti-skinning agents, driers, drying activators, silicone additives, and the like.

The epoxy-ester modified alkyd resin formulations of the present invention can be admixed with pigment dispersions to form a wide range of pigmented enamels which have been found extremely suitable for interior household purposes as well as providing an excellent exterior surface coating exhibiting fine adhesion and resistance to weathering.

The alkyd resins employed in the present invention are the resinous reaction products of di- and polyhydric alcohols and poly-basic acids or fatty monobasic acids or anhydrides. Illustrative of suitable di- and polyhydric alcohols are glycerol, pentaerythritol, sorbitol, mannitol, ethylene, diethylene, or propylene glycols, trimethylol ethane, trimethylol propane, and the like. Illustrative of suitable acids and anhydrides are phthalic anhydride, isophthalic acid, fumaric acid, succinic acid, adipic acid, azelaic acid, sebacic acid, maleic anhydride, the rosin adduct of maleic anhydride, and the like. The methods for alkyd resin production from the alcohol and acid or anhydride reactants are well known in the art.

The alkyd resins of the present invention are modified with semi-drying oils or mixtures of semi-drying oils with drying or non-drying oils. The preferred modifying oil is soya bean oil either used per se or in admixture with linseed, dehydrated castor, tall, tung, fish, perilla, oiticica, sunflower, and/or safflower oils. While soya bean oil is somewhat slower drying than those prepared from linseed, tung, dehydrated castor oils, and the like; nevertheless, soya bean oil is preferred as the modifying

oil since it yields oil modified alkyd resins which are light colored and low in cost.

The soya bean oil modified alkyd resins of the present invention are considered medium oil length alkyd resins containing about 45-55% oil. Preferably, the alkyd resin is prepared from phthalic anhydride and glycerol wherein the resin contains a minimum of about 30 wt % phthalic anhydride. The modifying oil is preferably a mixture of soya bean and linseed oils. One such soya modified alkyd resin is a soya-linseed medium alkyd available from Cargill, Inc., Minneapolis, Minn., as Cargill Medium Alkyd 5114, a resin solution in mineral spirits (50% by weight solids at least 30% phthalic anhydride; viscosity range=U-Z; acid number on solids=12 max.; acid number on solution=6 max.; and color=10 max). The soya bean oil modified alkyd resins are admixed in the epoxy ester-modified alkyd resin formulations of the present invention in amounts ranging from about 70 to 90 wt %, preferably from about 82 to 88 wt %, and most preferably, about 85 wt %.

The epoxy ester resins employed in the present invention are produced by reaction of epoxy compounds such as epichlorohydrin with dihydric phenols such as catechol, resorcinol, hydroquinone, pyrogallol, phloroglucinol, and most preferably, Disphenol A to yield glycidyl polyether resins. These polyethers are esterified by reaction with fatty or rosin acids to yield the epoxy resin esters of the present invention. One such epoxy resin ester is available from Cargill, Inc., Minneapolis, Minn., as Cargill Epoxy Ester 7872, an epoxy resin esterified with tall oil fatty acid, available as a resin solution in mineral spirits (60% by weight solids viscosity range=Z<sub>1</sub>-Z<sub>2</sub>; color=8 max.; acid value=6 max. (soln); and type of acid=TOFA). The epoxy ester resins are admixed in the epoxy ester-modified alkyd resin formulations of the present invention in amounts ranging from about 4.75 to 10 wt %, preferably about 4.75 to 7 wt %, and most preferably, about 5% by weight. The fatty acid esterification improves flexibility and solubility of the resin, converts the reactive hydroxyl and epoxide groups to ester groups which are somewhat less reactive and, if the fatty acid is unsaturated, provides some drying or curing action by means of the unsaturated linkages.

The silicone modified alkyd resins employed in the present invention are produced by modification of the soya alkyd resins described hereinabove with at least about 30 wt % silicone. The phthalic anhydride content of the alkyd resin is a minimum of 15 wt %. Silicone modification provides a faster drying resin with better application properties exhibiting better heat resistance, weathering resistance and resistance to alkalis resulting in maximum exterior durability. One such silicone-modified alkyd resin is available from Cargill, Inc., Minneapolis, Minn. as Cargill Silicone-Alkyd 6260, a resin solution in mineral spirits (60% by weight solids phthalic anhydride content=15% min.; viscosity range=V-Z; acid number on solids=12 max.; acid number on solution=7.2 max.; color=13 max.; and modifier=30% silicone). The silicone-modified alkyd resins are admixed in the epoxy ester-modified alkyd resin formulations of the present invention in amounts ranging from about 4.75 to 10 wt %, preferably, about 4.75 to 7 wt %, and most preferably, about 5 wt %.

Any compatible solvent can be employed in the epoxy ester-modified alkyd resin formulations of the present invention. Although mineral spirits is most preferred because of being the solvent vehicle in which

most of the components of the formulations are commercially available, any compatible aromatic or aliphatic hydrocarbon can be suitably employed such as benzene, toluene, naphthalene, hexane, heptane, or the like. The solvent is present in the resin formulation in amounts ranging from about 0.5 to 10 wt %, preferably, 0.5 to 2 wt %, and most preferably, about 1 wt %.

Additionally, if desired, one or more conventional additives can be admixed with the resin formulation in amounts ranging from about 0 to 6 wt %. Thus, for example, anti-skinning agents, preferably of the volatile oxime type to prevent skinning of the ultimate enamel can be employed in amounts ranging from 0 to about 0.5 wt %, and most preferably, about 0.2 wt %; metallic driers, preferably, metallic salts of tall oil fatty acids wherein the salt forming metals are preferably cobalt, manganese, calcium or zirconium. These driers are strong oxidizers which effect rapid top drying of the enamel film. These driers can be employed in amounts ranging from 0 to about 3 wt %, most preferably from about 2 to 2.5 wt %; silicone additive to impart weather resistance and flexibility can also be employed in amounts ranging from 0 to about 2 wt %, and most preferably, about 1 wt %; drying activators such as 1,10-phenanthroline in a compatible solvent system which forms a complex with the metallic driers which is a more effective oxidation catalyst than the simple uncomplexed metal ions. The drying activators can be employed in amounts ranging from 0 to about 0.5 wt %, and most preferably, about 0.3 wt %.

The epoxy ester modified alkyd resin formulations of the present invention can be conveniently prepared by thoroughly admixing the soya alkyd resin and the epoxy ester resin for about 5 to 15 minutes and then admixing therewith the silicone-modified alkyd resin, solvent and any desired additives with continuous mixing until a clear, homogenous epoxy ester-modified alkyd resin solution is developed. This resin solution functions as the clear base from which a whole series of pigmented, air dry alkyd enamels can be prepared.

A wide variety of pigment dispersions for use in conjunction with the clear resinous base of the present invention can be prepared by intimately dispersing the pigment or mixture of pigments desired in a soya-modified alkyd resin. Thus, from about 20 to 75 wt % of pigment can be dispersed in from about 20 to 80 wt % soya alkyd resin. Preferably, from 0 to about 5 wt % of a dispersing aid is included in the dispersion. The dispersion aid assists in wetting, suspending and dispersing the pigment within the resin. Other additives can also be suitably employed, if desired. Thus, grinding aids, thixotropic agents, anti-sag additives, and the like can be incorporated in the pigment dispersions. Generally, the alkyd resin, pigment and additives are admixed and ground on a 3-roll mill or steel ball mill until suitable dispersion is achieved. If desired, upon conclusion of grinding, the dispersion can be let down by addition of a solvent or diluent such as methanol, mineral spirits or additional alkyd resin.

The final pigmented enamel product can be prepared by admixing from about 70 to 78 wt % of the clear epoxy ester-modified alkyd resin base with from about 20 to 30 wt % of a pigment dispersion and from about 0 to 2 wt % of an anti-sag additive, to control the flow characteristics and reduce pigment settling. Troykyd Anti-Sag 4 (color(Gardner)=10-12; viscosity range=R-U; and specific gravity=1.02-1.08), available from Troy Chemical Corporation, Newark, N.J., is typical of

the anti-sag additives which can be suitably employed in the present invention. Anti-sag additives are generally polar liquids that effect changes in paint rheology through the formation of micellular structures. The resulting decrease in mobility is observed as a decrease in sagging and settling. The resulting pigmented enamel has about 40-60% solids.

The following examples further illustrate various specific embodiments of the present invention. These examples are included for illustrative purposes only and are not to be construed as imposing any limitations upon either the scope or spirit of the present invention.

#### EXAMPLE 1

Preparation of Clear Epoxy Ester—Modified Alkyd Resin Base 656.50 pounds of soya-linseed medium alkyd resin (Cargill Medium Alkyd 5114) was thoroughly admixed for 10 minutes with 34.75 pounds of Cargill Epoxy Ester 7872. Thereafter, the following were added to the above admixture with continuous mixing:

Lbs.	Material
39.50	Cargill Silicone Alkyd Resin 6260
1.25	Eskin #2 anti-skinning agent available from Nuodex, Inc., Piscataway, New Jersey
12.65	6% Zirconium drier, Nuodex, Inc.
3.50	6% Cobalt drier, Nuodex, Inc.
0.38	6% Manganese drier, Nuodex, Inc.
1.08	40% Calcium drier, Nuodex, Inc.
7.46	Silicone additive, No. DC-11 (functionality = carbanol), Dow Corning, Midland, MI
2.00	Active No. 6 drying activator (active ingredient = 1,10-phenanthroline (38%); 52% of normal butyl alcohol and 10% of 2-ethylhexoic acid), R. T. Vanderbilt Co., Norwalk, CT

Mixing is continued until a homogeneous, clear solution is obtained. This solution or clear base exhibits a Gloss of 90+ and a viscosity of 95 KU. The yield is 100 gallons.

#### EXAMPLE 2

Preparation of Carbon Black Pigment Dispersion

Into a steel ball mill are added 272 pounds of Sterling XR carbon black pigment available from Cabot Corporation, Boston, Mass., 605 pounds of Cargill Soya Alkyd Resin 5114 and 27 pounds of Disperse-Ayd #1 (solids=7575%; color (Gardner)=12 max.; and viscosity (G-11)=Q to T), dispersing agent available from Daniels Products, Inc., Jersey City, N.J. The materials are ground to prepare a fine dispersion of the carbon black pigment in the alkyd resin. The yield is 100 gallons.

#### EXAMPLE 3

Preparation of Red Oxide Pigment Dispersion

543.31 pounds of Cargill Soya Alkyd Resin 5114, 984.25 pounds of red oxide pigment No. RO-4097 available from Pfizer Chemical Corporation, New York, N.Y., and 26.25 pounds of Troykyd 98-C (solids=95% min.; specific gravity (80° F.)=0.903-0.918; color (Gardner)=14 max.; and viscosity (Gardner)=Z-3 max.), an amphoteric wetting and pigment dispersing agent available from Troy Chemical Corp., Newark, N.J., are pre-mixed to form a first pre-mix. A second

pre-mix is prepared by admixing 13.15 pounds of Benzene 38, a thixotropic agent available from NL Industries, Hightstown, N.J., with 6.56 pounds of methanol. The first and second pre-mixes are admixed and ground in a 3-roll mill to prepare a fine dispersion of red oxide pigment in the alkyd resin. The yield is 100 gallons.

#### EXAMPLE 4

##### Preparation of Titanium Dioxide Pigment Dispersion

478.09 pounds of Cargill Soya Alkyd Resin 5114 is pre-mixed with 12.26 pounds of Disperse-Ayd #1, 4.90 pounds of MPA-60 grinding aid (an organic, high solids paste; density=0.82-0.87) available from NL Industries, and 127.05 pounds Ti Pure R-900 titanium dioxide pigment available from E. I. duPont Company de Nemours, Wilmington, Del. The pre-mix is ground in a High Speed Cowles-type mixer until the mixture reaches 110° F. to obtain a fine dispersion of titanium dioxide in the alkyd resin. The yield is 100 gallons.

#### EXAMPLE 5

##### Preparation of Yellow Oxide Pigment Dispersion

A pre-mix is prepared by admixing 841.00 pounds yellow oxide pigment No. 308 available from Pfizer Chemical Corporation, New York, N.Y. and 20.00 pounds Troykyd 98-C pigment dispersing agent. 450 pounds of Cargill Soya Alkyd Resin are pre-wet with 10 pounds Benzene 38 thixotropic agent and 5 pounds methanol. The pre-wet alkyd resin is added to the pre-mix and ground on a 3 roll mill to at least 6+. 114 pounds of Cargill Soya Alkyd Resin is added to the resulting admixture as a letdown to obtain 100 gallons of a fine yellow oxide pigment dispersion.

#### EXAMPLE 6

##### Preparation of Battleship Grey Enamel

A high gloss, battleship grey air dry enamel is prepared by admixing 664.80 pounds of the clear base prepared in Example 1 with the following dispersions:

Pounds	Dispersion
131.91	Titanium Dioxide (Example 4)
31.73	Carbon Black (Example 2)
2.20	Red Oxide (Example 3)
3.46	Yellow Oxide (Example 3)

The resulting admixture was thoroughly mixed and 17.10 pounds of Troykyd Anti-Sag No. 4, an anti-sagging agent available from Troy Chemical Corporation, Newark, N.J., is added thereto with continuous mixing to produce 100 gallons of a smooth uniformly pigmented battleship grey, air dry epoxy ester-modified alkyd enamel.

#### EXAMPLE 7

##### Preparation of Barn Red Enamel

A high gloss, barn red, air dry enamel is prepared by admixing 665.49 pounds of the clear base prepared in Example 1 with 38.23 pounds of the titanium dioxide pigment dispersion prepared in Example 4 and 145.43 pounds of the red oxide pigment dispersion prepared in Example 3. The mixture is admixed thoroughly and then 17.10 pounds of Troykyd Anti-Sag No. 4 is added thereto with continuous mixing to produce 100 gallons

of a smooth uniformly pigmented barn red, air dry epoxy ester-modified alkyd enamel.

#### EXAMPLE 8

##### Preparation of Yellow Enamel

A yellow air dry enamel is prepared by admixing 617.89 pounds of clear base prepared in Example 1, 200.25 pounds of the yellow oxide pigment dispersion prepared in Example 5, and 17.10 pounds of Troykyd Anti-Sag No. b 4 with continuous mixing to produce 100 gallons of a smooth uniformly pigmented, yellow, air dry epoxy ester-modified alkyd enamel.

What is claimed is:

1. Epoxy ester-modified alkyd resin formulations comprising:

(i) from about 70 to 90 wt % medium oil length soya modified alkyd resin;

(ii) from about 4.75 to 10 wt % epoxy ester resin, comprising an epoxy resin esterified with fatty or rosin acids;

(iii) from about 4.75 to 10 wt % silicone modified alkyd resin produced by modification of a said soya modified alkyd resin (i) with at least about 30 wt % of silicone; and

(iv) from about 0.5 to 10 wt % compatible solvent.

2. Alkyd resin formulations as defined in claim 1 wherein the soya-modified alkyd resin is a soya oil-linseed oil-modified alkyd resin.

3. Alkyd resin formulations as defined in claim 1 wherein the compatible solvent is mineral spirits.

4. Alkyd resin formulations as defined in claim 1 additionally containing from 0 to 6 wt % of one or more additives selected from the group consisting of anti-skinning agents, driers, drying activators and silicone said silicone additive to impart weather resistance and flexibility.

5. Alkyd resin formulations as defined in claim 1 wherein the soya-modified alkyd resin contains about 45-55 wt % of a soya-linseed oil mixture modifying an alkyd resin prepared from phthalic anhydride and glycerol wherein the resin contains at least about 30 wt % phthalic anhydride.

6. Alkyd resin formulations as defined in claim 1 wherein the soya-modified alkyd resin is present in amounts of from about 82 to 88 wt %.

7. Alkyd resin formulations as defined in claim 6 wherein the soya-modified alkyd resin is present in an amount of about 85 wt %.

8. Alkyd resin formulations defined in claim 1 wherein the epoxy ester resin is an epoxy resin formed from epichlorohydrin and Bisphenol A esterified by reaction with fatty or rosin acids.

9. Alkyd resin formulations as defined in claim 8 wherein the epoxy resin is esterified with tall oil fatty acid.

10. Alkyd resin formulations as defined in claim 1 wherein the epoxy ester resin is present in amounts of from 4.75 to 7 wt %.

11. Alkyd resin formulations as defined in claim 10 wherein the epoxy resin is present in an amount of about 5 wt %.

12. Alkyd resin formulations as defined in claim 1 wherein the alkyd resin portion of said silicone modified alkyd resin and is an alkyd resin formed from phthalic anhydride and glycerol, wherein the said resin portion contains at least 15 wt % phthalic anhydride.



13. Alkyd resin formulations as defined in claim 1 wherein the silicone modified alkyd resin is present in amounts of from 4.75 to 7 wt %.

14. Alkyd resin formulations as defined in claim 13 wherein the silicone modified alkyd resin is present in an amount of about 5 wt %.

15. Alkyd resin formulations as defined in claim 1 wherein the compatible solvent is an aromatic or aliphatic hydrocarbon solvent compatible with the alkyd resin formulations.

16. Alkyd resin formulations as defined in claim 1 wherein the compatible solvent is present in amounts of from 0.5 to 2 wt %.

17. Alkyd resin formulations as defined in claim 16 wherein the compatible solvent is present in an amount of about 1 wt %.

18. Alkyd resin formulations as defined in claim 4 wherein the anti-skinning agents are present in amounts of from 0 to about 0.5 wt %; one or more driers are present in amounts of from 0 to about 3 wt %; drying

activators are present in amounts of 0 to about 0.5 wt %; and silicone additives are present in amounts of from 0 to about 2 wt %.

19. Pigmented epoxy ester-modified alkyd resin enamel formulations comprising:

(i) from about 70 to 78 wt % of the epoxy ester-modified alkyd resin formulation as defined in claim 1;

(ii) from about 20 to 30 wt % of at least one pigment uniformly dispersed in a soya modified alkyd resin; and

(iii) from 0 to about 2 wt % of an anti-sag additive; said pigmented enamel formulations containing about 40 to 60% total solids.

20. Pigmented enamel formulations as defined in claim 19 wherein the pigment dispersed in a soya modified alkyd resin is a pigmented dispersion comprising about 20 to 75 wt % of at least one pigment dispersed in from about 20 to 80 wt % of a soya modified alkyd resin and from 0 to about 5 wt % of a dispersing aid.

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**EXHIBIT B**

**TRADEMARKS**

<b><u>Registration No.</u></b>	<b><u>Trademark Date</u></b>	<b><u>Description of Trademark</u></b>
1,345,423	July 2, 1985	Poxy Coat

**ALL AS FURTHER DESCRIBED ON THE ATTACHED**



N<sup>o</sup> 1345423

THE UNITED STATES OF AMERICA

CERTIFICATE OF REGISTRATION

This is to certify that the records of the Patent and Trademark Office show that an application was filed in said Office for registration of the Mark shown herein, a copy of said Mark and pertinent data from the Application being annexed hereto and made a part hereof,

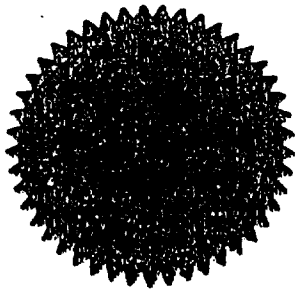
And there having been due compliance with the requirements of the law and with the regulations prescribed by the Commissioner of Patents and Trademarks,

Upon examination, it appeared that the applicant was entitled to have said Mark registered under the Trademark Act of 1946, and the said Mark has been duly registered this day in the Patent and Trademark Office on the

PRINCIPAL REGISTER

to the registrant named herein.

This registration shall remain in force for Twenty Years unless sooner terminated as provided by law.



In Testimony Whereof I have hereunto set my hand and caused the seal of the Patent and Trademark Office to be affixed this second day of July, 1985.

Acting Commissioner of Patents and Trademarks

## NOTICE

*This Registration will be canceled by the Commissioner of Patents and Trademarks at the end of six years following the date of registration, unless within one year next preceding the expiration of such six years, the registrant files in the Patent and Trademark Office an affidavit showing that said mark is in use in Commerce or showing that its nonuse is due to special circumstances which excuse such nonuse and is not due to any intention to abandon the mark. A fee of \$100.00 for each class must accompany the affidavit.*



Int. Cl.: 2

Prior U.S. Cl.: 16

**United States Patent and Trademark Office**

Reg. No. 1,345,423

Registered July 2, 1985

TRADEMARK  
PRINCIPAL REGISTER

# POXY COAT

INTERNATIONAL COATING AND CHEMICAL  
CO., INC. (MASSACHUSETTS CORPORATION)  
25 SYLVAN RD., S.  
WESTPORT, CT 06880

FOR: LIQUID EPOXY COATING FOR HOME  
AND COMMERCIAL USE, IN CLASS 2 (U.S. CL.  
16).

FIRST USE 1-1-1977; IN COMMERCE  
1-1-1977.

NO CLAIM IS MADE TO THE EXCLUSIVE  
RIGHT TO USE "COAT", APART FROM THE  
MARK AS SHOWN.

SER. NO. 429,305, FILED 6-8-1983.

CARY J. DEATON, EXAMINING ATTORNEY

**EXHIBIT C**

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None

**EXHIBIT D**

**LICENSE AGREEMENTS**

None