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Señora Jefe de la
DIVISION DE NUEVAS CREACIONES
Superintendencia de Industria y Comercio
E. S. D.

Trámite : 011 Evento : 379 Actuación : 444

Referencia : Expediente No. 03.021.575
Asunto : Solicitud de Patente para **ENVASE PARA ANESTESICO INHALABLE.**
Solicitante : **BAXTER INTERNATIONAL INC.**
Fecha de Solicitud : 13 de marzo de 2003

1. Yo, Emilio FERRERO, obrando como apoderado del solicitante en el asunto antes identificado, me refiero al Oficio No. **10399** notificado por fijación en lista del 31 de agosto de 2007.

2. Mediante mi memorial de fecha 23 de noviembre de 2007 solicité un plazo de 30 días para atender el Oficio No. **10399**.

3. Mediante el Oficio No. **10399** se puso en conocimiento del solicitante el informe que contiene las observaciones hechas por su Despacho sobre la presente solicitud de patente.

Atiendo a las observaciones de la manera siguiente:

3.1. CLARIDAD DE LA SOLICITUD Y UNIDAD DE INVENCION.

Para subsanar las objeciones que sobre claridad y unidad de invención hizo su Despacho, presento nuevo pliego reivindicatorio con diecisiete (17) reivindicaciones en el cual se han

hecho los cambios sugeridos por su Despacho que permiten apreciar claramente el objeto reivindicado en la presente solicitud de patente.

A este respecto, respetuosamente ponemos de presente que el producto que se reivindica en la presente solicitud de patente es un sistema compuesto por la combinación de un anestésico inhalable y el envase que contiene ese anestésico. Por consiguiente, el objeto reivindicado no es ni el anestésico ni el envase tomados individualmente, sino la combinación del anestésico y el envase en conjunto.

} 1. 0

Con el fin de esclarecer la materia objeto de protección de la presente solicitud de patente, se presenta junto con este escrito 3 Figuras, dichas figuras ilustran el envase y el cierre (Fig. 1), el interior del envase (Fig. 2) y la construcción del cierre (Fig. 3).

} 0

En este sentido, advertimos que la solicitud señala que los envases de aluminio "aptos para ser usados en la presente invención están a la venta en el comercio" y "se los fabricará dándoles el tamaño y forma de los envases de vidrio en los cuales se venden actualmente en el comercio los anestésicos inhalables". Adicionalmente, la solicitud señala que el cierre "consistirá típicamente en una cápsula, tal como las que se usan en los envases de vidrio".

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Así, la Figura 1 ilustra acertadamente la forma de una botella que sería adecuada para uso en un envase de aluminio como el reivindicado y que también sería ilustrativo de envases de vidrio disponibles en el comercio.

Respecto a las Figuras 2 y 3, notamos que por ejemplo la solicitud señala que "los envases de aluminio de la presente invención pueden estar revestidos o no revestidos." La Fig. 2 muestra una ilustración en donde el envase (10) tiene un revestimiento (12). Así mismo, señala que "se prefieren en particular los cierres que están revestidos con las lacas anteriormente mencionadas, o con politetrafluoroetileno (PTFE)." La Fig. 3 ilustra un cierre (20) con un revestimiento (22).

Por consiguiente, consideramos que las presentes figuras son ilustrativas del cierre original y no amplían el alcance de protección originalmente solicitado.

De esta manera es claro que con las modificaciones del capítulo reivindicatorio quedan subsanadas las objeciones que por claridad y unidad de invención hizo su Despacho, ya que ahora, dicho pliego involucra un único concepto inventivo, reivindica un producto en los términos sugeridos por su Despacho y permite determinar el alcance de la protección reivindicada y compararla frente al estado del arte, de acuerdo con las disposiciones de los artículos 25, 28 y 30 de la Decisión 486.

3. Por lo tanto, le solicito se sirva continuar con el trámite de la presente solicitud pues las reivindicaciones involucran un único concepto inventivo y se presentan de una forma clara y en consecuencia, con fundamento en las mismas una persona versada en la materia podría realizar el examen de patentabilidad del producto objeto de esta invención. A pesar que las objeciones que sobre claridad planteó ese Despacho en el oficio No. **10399** se deben tener por superadas, en el evento que el Despacho considere que sea necesario, respetuosamente le solicito hacer uso de la facultad que le otorga el artículo 45 inciso 2. de la Decisión 486 de la Comisión de la Comunidad Andina a efecto de requerir nuevamente de nuestra parte cualquier complementación o aclaración que considere necesaria.

4. Puesto que se han atendido a cabalidad las observaciones hechas por su Despacho sobre la presente solicitud de patente, atentamente solicito que se continúe su tramitación.

5. **Anexos:**

- 5.1. Nuevo pliego reivindicatorio con diez y ocho (17) reivindicaciones;
- 5.2. Figuras (3);
- 5.3. Formulario para modificaciones;

5.4. Recibo por valor de \$103.000 por concepto de modificaciones en solicitud pendiente.

Señora Jefe,



EMILIO FERRERO

T.P.A. No. 31.929

COLO-05873-841-005-7
NNJ\NNJ\ID-116080\WPCL5873
No. M-2008-116080\NNJ



Industria y Comercio
SUPERINTENDENCIA

Espacio reservado para el adhesivo de radicación

FORMULARIO UNICO DE CORRECCIONES Y MODIFICACIONES

1

SOLICITUD DE:

☐ Corrección de Error Material

☒ Modificación a una solicitud

2

SOLICITANTE

Nombre: BAXTER INTERNATIONAL

Sociedad constituida y existente bajo las leyes del Estado de Delaware, Estados Unidos de América.

Dirección: One Baxter Parkway,
Deerfield,
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Domicilio: Deerfield,
Illinois,
Estados Unidos de América

Teléfono: 546 09 70 Fax: 249 40 70

E-mail: clientes@cavelier.com

IDENTIFICACION

C.C. ☐

NIT ☐

C.E. ☐

Otro ☐

Número: _____

3

REPRESENTANTE
O APODERADO

Nombre: Emilio FERRERO

Dirección: Carrera 4ª No. 72-35

Teléfono: 347 36 11 Fax: 217 92 11

E-mail: cavelier@cavelier.com

IDENTIFICACION

C.C. ☒

NIT ☐

C.E. ☐

Otro ☐

Número: 438.019 TP 31.929

4

Número de expediente: 03.021.575

5

Descripción de la corrección o modificación solicitada:

Presento nuevo capítulo reivindicatorio con 17 reivindicaciones con el fin de superar las objeciones de Su Despacho y pido que el exámen de patentabilidad sea realizado sobre este nuevo capítulo reivindicatorio.

6

Comprobante de pago No. 08-67

Fecha: 2 de enero de 2008

7

Anexos

☒ Comprobante de pago de la tasa por \$ 103,000.00

☐ Poderes, si fuere el caso

☐ Documento que acredita la existencia y representación legal de las partes, cuando sean personas jurídicas.

8

NOMBRE: EMILIO FERRERO

FIRMA: 

C.C. 438.019 de Usaquén T.P.A. 31.929

NNJ

REIVINDICACIONES

1. Un sistema farmacéutico que comprende un anestésico inhalable contenido dentro de un envase de aluminio, CARACTERIZADO porque el anestésico inhalable es seleccionado de entre el grupo que comprende sevoflurano, desflurano, isoflurano, enflurano, metoxiflurano y halotano, y envase de aluminio puede estar provisto o no en su interior con un revestimiento inerte.
2. El sistema farmacéutico de la reivindicación 1, CARACTERIZADO porque el revestimiento inerte comprende una laca o un esmalte.
3. El sistema farmacéutico de la reivindicación 1, CARACTERIZADO porque comprende adicionalmente un orificio para el llenado o para retirar el anestésico inhalable del envase y un cierre para el orificio.
4. El sistema farmacéutico de la reivindicación 3, CARACTERIZADO porque el envase tiene forma de botella.
5. El sistema farmacéutico de la reivindicación 4, CARACTERIZADO porque el cierre comprende una cápsula.
6. El sistema farmacéutico de la reivindicación 4, CARACTERIZADO porque el cierre comprende un conjunto de válvulas para regular el flujo del anestésico inhalable.
7. Un sistema farmacéutico CARACTERIZADO porque comprende un envase el cual tiene una pared que define una cámara interior, dicha pared incluye una superficie interior en la cual por lo menos una porción de dicha superficie interior está revestida con un material que comprende una resina epoxifenólica; y un anestésico inhalable contenido dentro de dicha cámara interior, dicho anestésico inhalable seleccionado de entre el grupo que comprende sevoflurano, desflurano, isoflurano, enflurano, metoxiflurano y halotano.
8. El sistema farmacéutico de la reivindicación 7, CARACTERIZADO porque el revestimiento inerte comprende una laca o un esmalte.
9. El sistema farmacéutico de la reivindicación 7, CARACTERIZADO porque comprende adicionalmente un orificio para el llenado o para retirar el anestésico inhalable del envase y un cierre para el orificio.

- 10.El sistema farmacéutico de la reivindicación 9, CARACTERIZADO porque el envase tiene forma de botella.
- 11.El sistema farmacéutico de la reivindicación 10, CARACTERIZADO porque el cierre comprende una cápsula.
- 12.El sistema farmacéutico de la reivindicación 11, CARACTERIZADO porque el cierre comprende un conjunto de válvulas para regular el flujo del anestésico inhalable.
- 13.El sistema farmacéutico de la reivindicación 11, CARACTERIZADO porque el cierre está revestido con una laca.
- 14.El sistema farmacéutico de la reivindicación 11, CARACTERIZADO porque el cierre está revestido con un polímero.
- 15.El sistema farmacéutico de la reivindicación 14, CARACTERIZADO porque dicho polímero es politetrafluoroetileno (PTFE).
- 16.El sistema farmacéutico de la reivindicación 11, CARACTERIZADO porque dicho cierre incluye elementos de indexado seleccionados para que correspondan a elementos de indexado de un vaporizador.
- 17.El sistema farmacéutico de la reivindicación 8, CARACTERIZADO porque dicho revestimiento tiene un espesor de aproximadamente 8-14 micras.

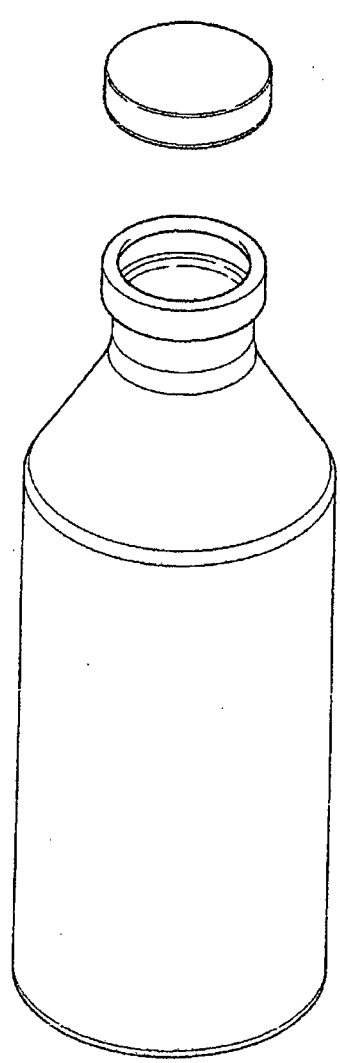


FIG. 1

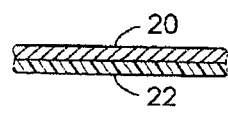


FIG. 3

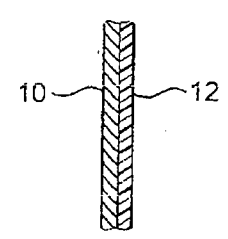


FIG. 2

62

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 08 - 67
FECHA : ENERO 2 DE 2008

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 03-021575- -00004-0000

Fecha: 2008-01-08 16:44:53 Dep. 2020 NUECREACIONI
Tra. 11 PATENTEIYII Eve: 379 FASENACIONALI
Act. 444 RESPUESTAREQUE Folios: 9

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
CAVELIER ABOGADOS	CONSIGNACION	BANCO DE BOGOTA	062754387	2808637	02/01/2008	42,278,000.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-03	CAMBIO DE MODALIDAD Y MODIFICA	
12		MARCAS Y LEMAS COMERCIALES	103,000.00
		TOTAL :	\$ 103,000.00

SON: CIENTO TRES MIL PESOS

RESPONSABLE :

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

Cdo 05873-841 005-7

United States Patent [19]

Wu

[11] 3,997,694

[45] Dec. 14, 1976

[54] **CONTAINER COATED WITH A DUCTILE COATING OF AN ACRYLIC POLYMER HAVING REACTIVE SITES AND AN EPOXY RESIN**

[75] Inventor: Souheng Wu, Wilmington, Del.

[73] Assignee: E. I. Du Pont de Nemours and Company, Wilmington, Del.

[22] Filed: July 3, 1975

[21] Appl. No.: 593,020

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 428,723, Dec. 12, 1973, Pat. No. 3,943,187.

[52] U.S. Cl. 428/35; 428/335; 428/418; 428/463; 428/461; 428/522

[51] Int. Cl.² B65D 1/12; B44D 1/50

[58] Field of Search 428/35, 220, 418, 461, 428/522, 335; 427/239; 260/836, 834

[56] References Cited

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Primary Examiner—P.E. Willis, Jr.

[57] ABSTRACT

A container, in particular aluminum and steel cans, having a dried and cured formable coating on the interior or on the exterior of the container and in which the coating is of the following compatible mixture of the film-forming constituents:

- a. an acrylic polymer that has at least two or more reactive sites per chain such as carboxyl, hydroxyl, epoxide, methylol, amine or amide and has a number average molecular weight above 10,000 and a glass transition temperature of -20° to $+50^{\circ}$ C.; and
- b. an epoxy resin that has at least one epoxide group in combination with at least one hydroxyl group or epoxide group or combination thereof per polymer chain and has a number average molecular weight of 300 to 20,000;

wherein the film-forming constituents in the fully cured state have a brittle ductile transition temperature of -40° to $+20^{\circ}$ C. measured at an elongation rate of 10% per minute.

4 Claims, No Drawings

CONTAINER COATED WITH A DUCTILE
COATING OF AN ACRYLIC POLYMER HAVING
REACTIVE SITES AND AN EPOXY RESIN

CROSS-REFERENCE TO RELATED
APPLICATIONS

This application is a continuation-in-part of my co-
pending application Ser. No. 428,723, filed Dec. 12,
1973 now U.S. Pat. No. 3,943,187.

BACKGROUND OF THE INVENTION

This invention is directed to a coated container and
in particular to a metal container coated with a compo-
sition that forms flexible and ductile finishes.

A current method for preparing cans utilized for
packaging foodstuffs is to draw a flat aluminum or steel
sheet into a low profile can body and then redraw this
can into a deep can body by a second drawing step and
optionally a bead is crimped on the open edge of the
can. The can is then cleaned and a coating is sprayed
on and baked. The cost of producing these cans can be
substantially reduced by coating the aluminum or steel
sheet before it is drawn with a flexible and ductile finish
which will not fracture, crack or peel during the form-
ing of the can. This eliminates the separate coating step
after the can has been formed. Currently, polyvinyl
chloride coatings have been used as a formable finish
on the aluminum sheet. However, after forming the can
and particularly after forming the bead, a large number
of failures have been noted; and also, the finish is not
resistant to food staining such as staining with pump-
kins, tomatoes, tomato soup or ketchup.

The container of this invention is coated with a com-
position that utilizes a blend of an acrylic polymer and
epoxy resin and forms a finish which is ductile, and has
good adhesion to the substrate and is resistant to food
staining.

SUMMARY OF THE INVENTION

A container having a coating of a composition that
contains as the film-forming constituents a compatible
mixture that consists essentially of

- a. an acrylic polymer having at least two or more
reactive sites per polymer chain that are either
carboxyl, hydroxyl, epoxide, methylol, amide,
amine or mixtures of any of the above, having a
number average molecular weight above 10,000
and a glass transition temperature of -20° to +60°
C.; and
- b. an epoxy resin having at least one epoxide group in
combination with at least one hydroxyl group or
epoxide group or combination thereof per polymer
chain and having a number average molecular
weight of 300 to 20,000;

wherein the film-forming constituents in the fully cured
state have a brittle ductile transition temperature of
-40° to +20° C. measured at an elongation rate of 10%
per minute.

DESCRIPTION OF THE INVENTION

The container usually has a coating of about 0.2-2.0
mils in thickness but for most uses, particularly for an
interior finish, the coating is about 0.3-0.5 mil in thick-
ness. The coating can be on the exterior or interior or
both of the container but is primarily designed to be
used as an interior coating. Generally, the container is
a drawn metal can of aluminum or steel which is coated
before drawing with the coating composition.

The coating composition used in this invention pref-
erably has a 25-50% by weight solids content of film-
forming constituents. The composition can be pig-
mented with a variety of the well known pigments, in a
pigment volume concentration of about 1-15%.

The film-forming constituents of the composition are
as follows: 60-95% by weight of an acrylic polymer,
and correspondingly 5-40% by weight of an epoxy
resin. Preferably, 70-80% by weight of the acrylic poly-
mer is used with 20-30% by weight of the epoxy resin
as the film-forming constituents of the composition.

The acrylic polymer has at least two or more reactive
sites per polymer chain which can be either a carboxyl
group, a hydroxyl group, an epoxide group, a methylol
group, an amine group, and amide group or a mixture
of two or more of these groups. The polymer has a
number average molecular weight above 10,000 and
usually has a number average molecular weight of
25,000-70,000 determined according to gel perme-
ation chromatography. The polymer has a glass transi-
tion temperature of -20° to +60° C.

The acrylic polymer used in this invention is pre-
pared by a conventional solution or emulsion polymeri-
zation technique. In a conventional solution polymeri-
zation process for preparing the acrylic polymer, the
monomers, solvents and polymerization catalysts are
charged into a conventional reaction vessel and heated
to about 75°-150° C. for about 2-6 hours to form a
polymer that has the aforementioned molecular weight.

Typical polymerization catalysts that are used are
ditertiary butyl peroxide, tertiary butyl perbenzoate,
benzoyl peroxide and the like.

The acrylic polymer can also be prepared by a con-
ventional emulsion polymerization technique in which
the monomers are charged into an aqueous medium
along with the polymerization catalysts such as ammo-
nium persulfate, hydrogen peroxide and the like with or
without a reducing agent such as ferrous sulfate. The
reaction mixture is heated to a temperature of about
60°-95° C. for about 2 to 4 hours to form the emulsion.

The constituents of the acrylic polymer are chosen so
that the acrylic polymer has a glass transition tempera-
ture of -20° to +60° C. determined by differential ther-
mal analysis. Also, the acrylic polymer is chosen so that
the resulting product will have a brittle ductile transi-
tion temperature of -40° to +20° C.

The brittle ductile transition is the temperature at
which the elongation at break of a strip of free film of
the fully cured coating composition about 2.0-4.0 de-
termined on an Instron testing machine using an elon-
gation rate of 10% per minute.

It is necessary that the coating composition used in
this invention in its fully cured state has a brittle ductile
transition temperature within the aforementioned
range so that the finish will not crack or peel under the
severe forming conditions utilized to prepare a deep-
drawn steel or aluminum can.

The acrylic polymer generally is comprised of hard
segments, soft segments and reactive constituents
which will provide the aforementioned reactive sites to
the polymer chain.

One typical acrylic polymer contains the following
constituents:

- 10-50% by weight of styrene, methyl styrene, meth-
ylmethacrylate or acrylonitrile,
- 40-89.5% by weight of an alkyl acrylate having 1-18
carbon atoms in the alkyl group or an alkyl metha-
crylate having 2-18 carbon atoms in the alkyl
group, and

90 minutes. Portion 5 is added in the order shown and the reaction mixture is held at its reflux temperature for 60 minutes and then 46.5 grams of solvent are stripped off in the following 2-hour period while maintaining the reaction mixture at its reflux temperature. Portion 6 is then added and the heat is removed and the reaction mixture is cooled to room temperature.

The resulting composition has a polymer solids content of 55.2% wherein the polymer is a styrene/ethyl acrylate/methacrylic acid/butoxymethylacrylamide in a weight ratio of 17.5/76.5/1.5/4.5. The polymer has a number average molecular weight of 47,000, a weight average molecular weight of 106,000 determined by gel permeation chromatography using polystyrene as the standard and a glass transition temperature of 6° C. The composition has a viscosity at room temperature using a Brookfield Viscometer at 5 RPM of 3,936 centipoises and at 100 RPM of 3,936 centipoises.

An acrylic/epoxy solution is prepared as follows:

	Parts by Weight
Acrylic polymer solution (prepared above)	427.2
Epoxy resin solution (40% solids of Epon 1004 resin described in Example 1)	160.5
Lubricant (15% solids polyethylene wax)	12.0
Solvent blend (50% hydrocarbon solvent described above and 50% butanol)	150.3
TOTAL	750.0

The above ingredients are thoroughly blended together to form a 40% solids solution wherein the ratio of acrylic polymer to epoxy resin is 78.6/21.4, the composition has a viscosity at room temperature using a Brookfield Viscometer at 10 RPM of 420 centipoises.

A mill base is prepared as follows:

	Parts by Weight
Titanium dioxide pigment	250.0
Acrylic/Epoxy resin solution (prepared above)	90.6
Hydrocarbon solvent (described above)	63.8
Butanol	63.7
Ethylene glycol monobutyl ether	31.9
TOTAL	500.0

The above ingredients are charged into a ceramic ball mill and milled for 16 hours to form a white mill base.

A coating composition is prepared as follows:

	Parts by Weight
Acrylic polymer solution (prepared above)	427.2
Epoxy resin solution (40% solids of Epon 1004)	160.5
Mill base (prepared above)	232.7
Lubricant (described above)	17.6
Solvent blend (described above)	168.8

-continued

	Parts by Weight
TOTAL	1006.8

The above ingredients are thoroughly blended together to form the coating composition. The composition has a solids content of 43.7%, a pigment to binder ratio of 36/100, acrylic/epoxy resin ratio of 78.6/21.4 and a Brookfield viscosity at room temperature at 10 RPM of 350 centipoises, at 20 RPM of 345 centipoises, at 50 RPM of 340 centipoises and 100 RPM of 348 centipoises.

The composition has a brittle ductile transition temperature of -25° C. determined as in Example 1.

The above coating composition is drawn down onto both sides of a 10 mil 5050H19 aluminum plate as in Example 1 to form a finish about 0.3-0.4 mil thick. The finish is tested as in Example 1 and exhibits excellent formability without cracking or loss of adhesion of the finish and excellent resistance to process/product test in which the finish shows stain resistance and good adhesion to the substrate. No blistering or blushing of the finish is noted under these test conditions.

The invention claimed is:

1. A container coated on at least one side with a dried coalesced coating about 0.2-2 mils in thickness, in which the coating consists essentially of a fully cured composition of

- a. 60-95% by weight of an acrylic polymer of polymerized units of 10-25% by weight of styrene, 65-87.5% by weight of an alkyl acrylate having 2-4 carbon atoms in the alkyl group, 2-7% by weight of butoxymethyl acrylamide, 0.5-3% by weight of acrylic acid or methacrylic acid having a number average molecular weight of above 10,000 determined according to gel permeation chromatography and a glass transition temperature of -20° to +60° C, and
- b. 5-40% by weight of an epoxy resin having at least one terminal vic epoxide group in combination with at least one hydroxyl group or epoxide group or mixture thereof per polymer chain and having a number average molecular weight of 300 to 20,000 determined as above;

wherein the film-forming constituents in the fully cured state have a brittle ductile transition temperature of -40° C to +20° C measured at an elongation rate of 10% per minute on an Instron testing machine using a free film about 2-4 mils thick.

2. The container of claim 1 in which the composition consists essentially of about

- a. 70-80% by weight of an acrylic polymer consisting essentially of polymerized units of about 10-25% by weight of styrene, 65-87.5% by weight of ethyl acrylate, 2-7% by weight of butoxymethyl acrylamide, 0.5-3% by weight of acrylic acid; and
- b. 20-30% by weight of an epoxy resin of the formula

