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## What is PatentPak™?

**PatentPak** is a patent workflow solution integrated with STN®.

PatentPak provides:

- Instant connection to searchable, full-text patents from major patent offices that span the globe
- Superior patent family coverage with access to alternative-language versions of a patent
- Direct links to key substances, including both name and structure substances, in the source patent

If PatentPak is not yet licensed at your site, contact your CAS representative.

### Key facts about PatentPak

- PatentPak is a subscription service that is available for CAplus<sup>SM</sup> / HCAplus / ZCAplus using STN® on the Web<sup>SM</sup>
- PatentPak provides full-text searchable patent PDFs
- Information is obtained from world-wide patent offices from 1998 - present
- PatentPak includes PDFs of patent family members that were not previously available on STN

### System Requirements

To ensure the best user experience, please use these recommended browsers:

- Firefox 24 and higher
- Chrome 36 and higher
- Internet Explorer 9 and higher


**Note:** Chrome 45 and higher does not work with STN on the Web plug-ins.



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## Accessing full-text patent PDFs

When viewing patent references, you can click one of the options described below to view the full-text PDF for the patent reference or for the Patent Family members that have full-text PDFs available. The display options are:

- **PatentPak PDF** - original, clean PDF from the PatentPak library
- **PatentPak PDF+** - PDF supplemented with a table designed to simplify access to the chemistry within the patent. Substances represented in the table include page references, CAS Registry Number® identifiers, chemical names, and chemical structures.
- **PatentPak Interactive** - interactive version of the PDF that has been annotated by CAS analysts to help identify locations of the most important chemistry and is used in conjunction with the [PatentPak Interactive](#) viewer. Click a location marker  in the patent PDF to link to the position where the substance is discussed. You will also be provided with the substance structure, CAS Registry Number, and additional page references, subject to their availability.

### Steps:

1. Conduct a search in CPlus<sup>SM</sup>, or HCAplus, or ZCAplus.
2. Display the retrieved record(s). Additional fields appear in the display based on the type of display you select (see the [NOTES](#) section below.)
3. Click one of the full-text PDF links that appear at the top of the displayed record or in the PatentPak column under the PPPI field.

11 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2015 ACS on STN  
[PatentPak PDF](#) | [PatentPak PDF+](#) | [PatentPak Interactive](#) | [Full Text](#) | [Citing References](#)  
 RN 2015:758888 CAPLUS  
 DN 162:591100  
 TI Method of jetting ink  
 IN Breton, Marcel Philippe; Belelie, Jennifer L.; Goredema, Adela; Smith, Paul F.  
 PA Xerox Corporation, USA  
 SO U.S., 31pp.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 FAN.CNT 1  
 PPPI

PATENT NO.	KIND	DATE	LANGUAGE	PatentPak
<a href="#">US 9022546</a>	B1	20150505	English	<a href="#">PDF</a>   <a href="#">PDF+</a>   <a href="#">Interactive</a>
<a href="#">US 20150145920</a>	A1	20150528	English	<a href="#">PDF</a>
<a href="#">DE 102014223318</a>	A1	20150528	German	<a href="#">PDF</a>
<a href="#">JP 2015101103</a>	A	20150604	Japanese	<a href="#">PDF</a>

PI

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
<a href="#">US 9022546</a>	B1	20150505	<a href="#">US 2013-14089479</a>	20131125
<a href="#">US 20150145920</a>	A1	20150528		
<a href="#">DE 102014223318</a>	A1	20150528	<a href="#">DE 2014-102014223318</a>	20141114
<a href="#">CA 2871394</a>	A1	20150525	<a href="#">CA 2014-2871394</a>	20141117
<a href="#">JP 2015101103</a>	A	20150604	<a href="#">JP 2014-232596</a>	20141117

PRAI [US 2013-14089479](#) A 20131125  
 ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
 OS CASREACT [162:591100](#)  
 RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

- The PDF opens in the active browser (review descriptions above).

### PatentPak PDF

STN on the Web Session - x https://content-test.cas.org/ft-pdf/caspatdoc%3AUS-20150110925-A1-20150423-FTPMOB.pdf?\*

US 20150110925A1

(10) **United States**  
 (12) **Patent Application Publication** (10) **Pub. No.:** US 2015/0110925 A1  
 (43) **Pub. Date:** Apr. 23, 2015

(54) **LOW-CALORIE BEVERAGE COMPOSITION** **Publication Classification**

(71) **Applicant:** SAMSUNG FINE CHEMICALS CO., LTD., Ulsan (KR) (51) **Int. Cl.**  
 A24J 2/00 (2006.01)

(72) **Inventors:** Hyun Woo LEE, Incheon (KR); Eun Jung LEE, Seoul (KR); Jae Ho LEE, Seongnam-si (KR) (52) **U.S. Cl.**  
 CPC A24J 2/00 (2013.01); A24J 3/00 (2013.01)


(21) **Appl. No.:** 14585566 (57) **ABSTRACT**

(22) **Filed:** Oct. 3, 2014 Disclosed is a beverage composition. The beverage composition includes a sweetener and cellulose ether. Accordingly, the beverage composition provides a strong sweet taste with low levels of unpleasant tastes or residual tastes, and satisfactory body-viscosity.

(30) **Foreign Application Priority Data**  
 Oct. 17, 2013 (KR) 10-2013-0124167

# PatentPak PDF+

STN on the Web Session x https://content-test.cas.or x  
 https://content-test.cas.org/ft-pdf/caspatdoc%3AUS-20150110925-A1-20150423-FTPMOB.pdf?F

  
 US 20150110925A1

(19) **United States**  
 (12) **Patent Application Publication** (10) **Pub. No.: US 2015/0110925 A1**  
**LEE et al.** (43) **Pub. Date: Apr. 23, 2015**

(54) **LOW-CALORIE BEVERAGE COMPOSITION** **Publication Classification**

(71) **Applicant:** SAMSUNG FINE CHEMICALS CO., LTD., Ulsan (KR) (51) **Int. Cl.**  
*A21M 2/60* (2006.01)


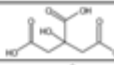
(72) **Inventors:** Hyun Woo LEE, Incheon (KR); Eun Jung LEE, Seoul (KR); Jae Ho LEE, Seongnam-si (KR) (52) **U.S. Cl.**  
 CPC: *A21M 2/60* (2013.01); *A21F 2002/00* (2013.01)

(21) **Appl. No.:** 14585960 (57) **ABSTRACT**

(22) **Filed:** Oct. 3, 2014 Disclosed is a beverage composition. The beverage composition includes a sweetener and cellulose ether. Accordingly, the beverage composition provides a strong sweet taste with low levels of unpleasant tastes or residual tastes, and satisfactory body-viscosity.

(30) **Foreign Application Priority Data**  
 Oct. 17, 2013 (KR) \_\_\_\_\_ 10-2013-0124167

**Key Substances in Patent**

Mark	Page #	CAS RN	Name	Structure
1	p.5	9004-34-6D	Cellulose ethers	
2	p.5	463-79-6	Carbonic acid	
3	p.5	77-92-9	1,2,3-Propanetricarboxylic acid, 2-hydroxy-	
4	p.5	22839-47-0	L-Phenylalanine, L-α-aspartyl-, 2-methyl	



## NOTES:

- PDF links remain active while you are online and for an additional 90 days in a saved transcript or a table or report created using post-processing tools.
- Additional fields appear in the CAplus/ HCAplus / ZCAplus displays for basic patents based on the type of display you select. The **BIB** display includes the **PPPI** field. The **STD** and **ALL** displays include the **PPPI** and **PPAK** fields.
  - **PPPI** - lists Patent Family members that have PDFs in PatentPak. Active PDF links can be found listed with the field information.
  - **PPAK** - lists all Registry numbers and page numbers marked in the document. Active Registry numbers and page numbers can be found listed with the field information.

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=> d L1 all
L1 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2015 ACS on STN
PatentPak PDF | PatentPak PDF+ | PatentPak Interactive | Full Text | Citing Re
AN 2015:691413 CAPLUS
DN 162:563379
ED Entered STN: 23 Apr 2015
TI Low-calorie beverage composition
IN Lee, Hyun Woo; Lee, Eun Jung; Lee, Jae Ho
PA Samsung Fine Chemicals Co., Ltd., S. Korea
SO U.S. Pat. Appl. Publ., 5pp.
CODEN: USXXCO
DT Patent
LA English
CC 17-13 (Food and Feed Chemistry)
FAN.CNT 1
PPPI
PATENT NO.          KIND  DATE      LANGUAGE  PatentPak
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US 20150110925      A1   20150423  English   PDF | PDF+ | Interactive
KR 2015044740       A    20150427  Korean    PDF
EP 2865279          A1   20150429  English   PDF
JP 2015077129       A    20150423  Japanese  PDF
CN 104544462        A    20150429  Chinese   PDF
PI
PATENT NO.          KIND  DATE      APPLICATION NO.  DATE
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80863-62-3, Alitame 165450-17-9, Neotame
RL: FFD (Food or feed use); BIOL (Biological study); USES (Uses)
(low-calorie beverage contg. sweetener and cellulose ether)
PPAK
77-92-9, Citric acid, Pg 5
81-07-2, Saccharin, Pg 5
100-88-9, Cyclamate, Pg 5
463-79-6, Carbonic acid, Pg 5
1405-86-3, Glycyrrhizin, Pg 5
9004-32-4, CMC, Pg 5
9004-34-6D, Cellulose, Pg 5
9004-65-3, HPMC, Pg 5
9004-67-5, Methylcellulose, Pg 5
20702-77-6, Neohesperidin DC, Pg 5
22839-47-0, Aspartame, Pg 5
55589-62-3, Acesulfame potassium, Pg 5
56038-13-2, Sucralose, Pg 5
57817-89-7, Stevioside, Pg 5
58543-16-1, Rebaudioside A, Pg 5
80863-62-3, Alitame, Pg 5
165450-17-9, Neotame, Pg 5
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## NOTES:

- Use **PDF/FA** in your search query to restrict the CPlus answer set to patent records having PDFs.
- Use **PPAK/FA** in your search query to restrict the CPlus answer set to patent records having the PatentPak PDF+ and/or PatentPak Interactive links available.
- Use **HITPPAK** at the end of your display command to highlight (add below the full set of PPAK listings) the Registry number, chemical name, and page number of the query compound listed in the PPAK field.

For example:

=> D L1 BIB

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PPAK
525-66-6, Propranolol, Pg 59
19216-56-9, Prazosin, Pg 59
56296-78-7, Prozac, Pg 59
78246-49-8, Paxil, Pg 59
79559-97-0, Zoloft, Pg 59
85650-52-8, Remeron, Pg 59
99300-78-4, Effexor, Pg 59
111974-72-2, Seroquel, Pg 59
132539-06-1, Zyprexa, Pg 59
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=> D L1 BIB HITPPAK

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PPAK
525-66-6, Propranolol, Pg 59
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56296-78-7, Prozac, Pg 59
78246-49-8, Paxil, Pg 59
79559-97-0, Zoloft, Pg 59
85650-52-8, Remeron, Pg 59
99300-78-4, Effexor, Pg 59
111974-72-2, Seroquel, Pg 59
132539-06-1, Zyprexa, Pg 59

PPAK
79559-97-0, Zoloft, Pg 59
```



# Using PatentPak Interactive

Many patents in PatentPak have been annotated with page numbers by CAS analysts to help identify locations of the most important chemistry. For these patent documents, the PatentPak Viewer will include a sidebar on the left that displays the **Key Substances in Patent**. To access the viewer, click the **PatentPak Interactive** link that appears in your answer set display.

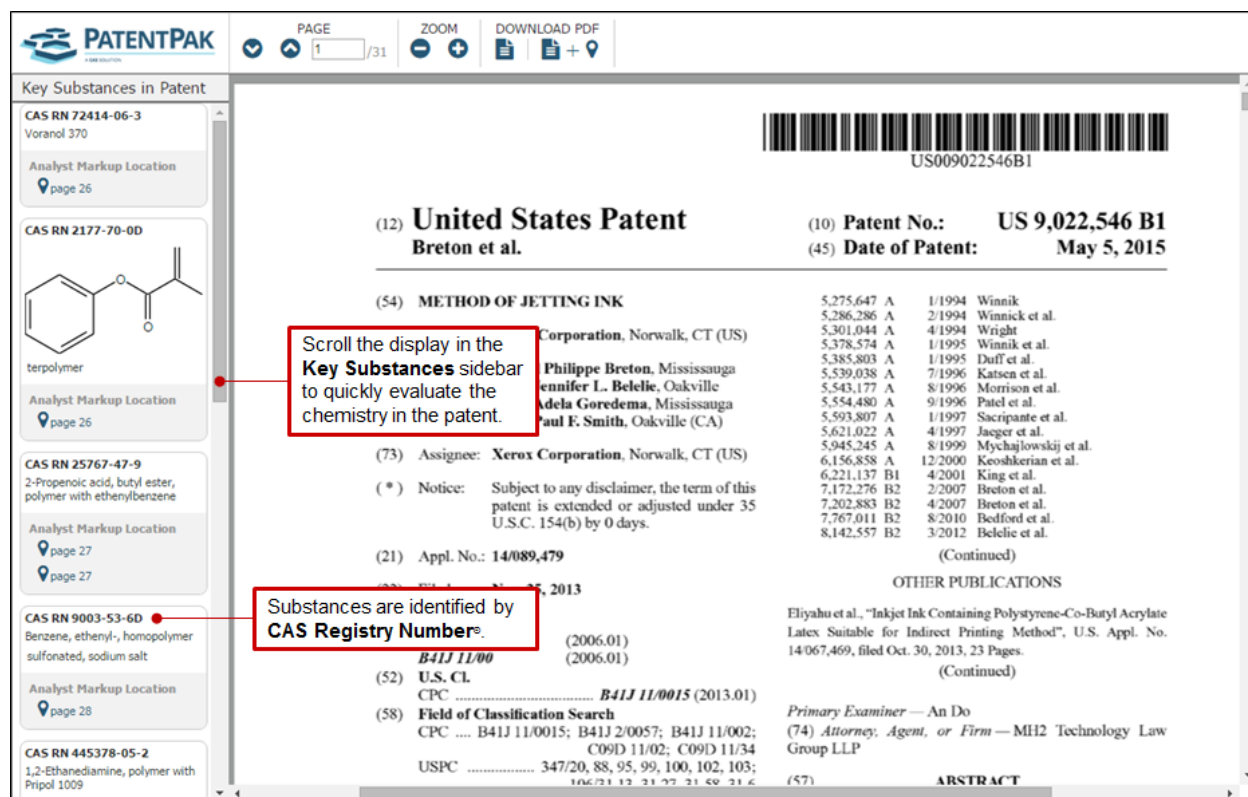
Use the Key Substances sidebar to:

- Identify the CAS Registry Numbers and view the structures for key substances
- Jump directly to the Analyst Markup Location for the substance in the marked patent document

Use the PatentPak toolbar to:

- Navigate the pages in the marked patent and zoom the display
- Download the marked patent as a PDF file with or without the location markers and key substance information

## Key Substances



The screenshot displays the PatentPak Interactive viewer interface. On the left, a sidebar titled "Key Substances in Patent" lists several substances with their CAS Registry Numbers and Analyst Markup Locations. The main area shows a patent document for "United States Patent Breton et al." with a patent number of US 9,022,546 B1 and a date of May 5, 2015. The patent title is "(54) METHOD OF JETTING INK". The sidebar lists substances such as Voranol 370, terpolymer, 2-Propenoic acid, butyl ester, polymer with ethenylbenzene, Benzene, ethenyl-, homopolymer sulfonated, sodium salt, and 1,2-Ethanediamine, polymer with Pripol 1009. Two red boxes highlight specific features: one points to the "Key Substances" sidebar with the text "Scroll the display in the Key Substances sidebar to quickly evaluate the chemistry in the patent." and another points to the CAS Registry Number "9003-53-6D" with the text "Substances are identified by CAS Registry Number".

## Location Markers

**PATENTPAK** | PAGE 26 / 31 | ZOOM | DOWNLOAD PDF

**Key Substances in Patent**

**CAS RN 72414-06-3**  
Voranol 370  
Analyst Markup Location  
page 26

**CAS RN 2177-70-0D**  
terpolymer  
Analyst Markup Location  
page 26

**CAS RN 25767-47-9**  
2-Propenoic acid, butyl ester, polymer with ethenylbenzene  
Analyst Markup Location  
page 27

**CAS RN 9003-53-6D**  
Benzene, ethenyl-, homopolymer sulfonated, sodium salt  
Analyst Markup Location  
page 28

**CAS RN 445378-05-2**  
1,2-Ethanediamine, polymer with Piprol 1009

IRGASTAB® UV 10, commercially available from Ciba Specialty Chemicals; GENORAD 16 and GENORAD 4 are commercially available from Rahn AG, Zurich, Switzerland and the like, as well as mixtures thereof. When present, the optional antioxidant is present in the ink in any desired effective amount, for example in one embodiment at least about 0.01 percent by weight of the ink carrier, in another embodiment at least about 0.1 percent by weight of the ink carrier, and in yet another embodiment at least about 1 percent by weight of the ink carrier, and in one embodiment no more than about 20 percent by weight of the ink carrier, in another embodiment no more than about 5 percent by weight of the ink carrier, and in yet another embodiment no more than about 3 percent by weight of the ink carrier.

Additional ingredients for these UV curable gel materials and methods of forming the same are described in U.S. Pat. No. 8,142,557, the disclosure of which is hereby incorporated by reference in its entirety.

Theellant compositions disclosed herein are present in the change ink in any desired or embodiment from about 1 to about vehicle, and in another amount from about 1 to about 10 percent by weight of the ink vehicle, and in one embodiment from about 7 to about 10 percent by weight of the ink vehicle.

FIG. 3 illustrates a commercial UV ink and a gel UV ink jetted onto a series of different substrates. As is evident from the images in FIG. 3, the UV gel ink has an affinity for a number of different substrates which is unique to the formulation (contrast the images of the Commercial UV ink above). This can allow the gel ink to be transferred to non-typical media such as plastic films, metal surfaces, gloss paper, polyester packaging film, such as MELINEX, and cardboard.

The inks are jetted as a liquid at an elevated temperature (typically 80-90° C.) from a piezoelectric printhead. As the ejected drops hit the substrate, they quickly gel as they cool to room temperature while maintaining a circular shape. The viscosity increases several orders of magnitude as the materials cool from the jetting temperature. This viscosity increase with cooling is illustrated in the graph of FIG. 4, which shows viscosity of a representative UV gel ink as a function of

3. Likewise, you can click a location marker in the **marked patent**, and the substance will be highlighted in the **Key Substances** sidebar.

1. Click the location marker in the **Key Substances** sidebar.

2. The substance is located in the **marked patent**, and the location marker is highlighted.

Gel at High T. or upon Water Evaporation

Ink Components	wt %	wt %	wt %	wt %	wt %
Carbon Black (CAB-O-Jet 300, 14.9% solid)	20	25	30	20	20
Voranol 370	15	26	10	25	5
Diethylene glycol	25	30	20	20	20
Sulfonated polyester (30% solid)	18	18	13	15	18
Amorphous Polyester Latex (36% solid)					20
Crystalline Polyester Latex (35.6% solid)					2
Phenyl Methacrylate Terpolymer Latex (36% solid)	15	15	13		
Styrene-N-Butyl acrylate Latex (41.06% solid)					10
Kelcoagel AFT					10
					15
Total Solid	100	100	100	100	100
	13.78	14.53	13.05	11.59	14.49

The ink compositions are formed by mixing carbon black (Cab-O-Jet 300 available from Cabot, dry), Voranol 370 available from Dow Chemicals, water, and sulfonated polyester (30% solution). After the components are homogeneously mixed together, the terpolymer latex (36% solution) (alternatively other types of latex can be used) are added while stirring with a magnetic stirrer. The specific compositions of the ink compositions, in weight percent, are shown in Table 1.

## Navigate pages and zoom display


Use the **PAGE** options to go to the next, previous, or a specific page number.

Use the **ZOOM** options to increase or decrease the size of the patent display.

**PATENTPAK** | PAGE 1 / 31 | ZOOM | DOWNLOAD PDF

**Key Substances in Patent**

**CAS RN 72414-06-3**  
Voranol 370



## Download PDF

Use the **DOWNLOAD PDF** options to download a PDF file of the patent either with or without the location markers and key substances information.



When you use the + option to download the patent PDF, the location markers are included in the PDF, such as the markers **1** and **2** shown below.

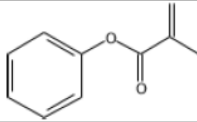
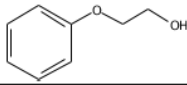
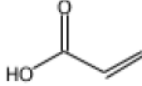
The screenshot shows a PDF document with a table and surrounding text. The table is titled 'TABLE 1' and 'Aqueous Gel Inks'. It lists various ink components and their weight percentages in five different examples. Location markers '1' and '2' are placed next to 'Voranol 370' and 'Phenyl Methacrylate Terpolymer Latex' respectively.

Ink Components	Gel at High T or upon Water Evaporation				
	Example 1	Example 2	Example 3	Example 4	Example 5
Carbon Black (CAB-O-Jet 300, 14.9% solid)	20	25	30	20	20
Voranol 370	15	26	10	25	5
Diethylene glycol Sulfonated polyester (30% solid)	25	30	20	20	20
Amorphous Polyester Latex (36% solid)	18	18	13	15	18
Crystalline Polyester Latex (35.6% solid)					2
Phenyl Methacrylate Terpolymer Latex (36% solid)	15	15	13		
Styrene-N-Butyl acrylate Latex (41.06% solid)				10	
Kelcogel AFT (gelling agent)					
SFRP-PSS					
Trizma HCL					
Glycerol					
Butyl Carbitol					
Water	7	16	4	10	15
	100	100	100	100	100
Total Solid	13.78	14.53	13.05	11.59	14.49

The ink compositions are formed by mixing carbon black (Cab-O-Jet 300 available from Cabot, dry), Voranol 370 available from Dow Chemicals, water, and sulfonated polyester (30% solution). After the components are homogeneously mixed together, the terpolymer latex (36% solution) (alternatively other types of latex can be used) are added while stirring with a magnetic stirrer. The specific compositions of the ink compositions, in weight percent, are shown in Table 1.

The ink compositions have a final solids content of greater than 10 weight %. The ink compositions are stable liquids at ambient temperature, but form high viscosity gels at high temperature (above about 25°C) and form gels at room temperature.

The key substance information is appended to the patent PDF in the form of a table, as shown below.

Mark	Page #	CAS RN	Name	Structure
1	p.26	72414-06-3	Voranol 370	
2	p.26	2177-70-0D	2-Propenoic acid, 2-methyl-, phenyl ester terpolymer	
3	p.27 p.27	25767-47-9	2-Propenoic acid, butyl ester, polymer with ethenylbenzene	
4	p.28	9003-53-6D	Benzene, ethenyl-, homopolymer sulfonated, sodium salt	
5	p.28	445378-05-2	1,2-Ethanediamine, polymer with Pripol 1009	
6	p.29	122-99-6	Ethanol, 2-phenoxy-	
7	p.30	261949-00-2	Unilin 350, 2-propenoate	
8	p.30	165169-28-8	Unilin 350	
9	p.30	79-10-7	2-Propenoic acid	
10	p.31	1413974-93-2	2-Propenoic acid, 1,1'-[2-[[[3-hydroxy-2,2-bis[[[(1-oxo-2-propen-1-yl)oxy]methyl]propoxy]methyl]-2-[[[(1-oxo-2-propen-1-yl)oxy]methyl]-1,3-propanediyl] ester, polymer with 1,1'-[[[octahydro-4,7-methano-1H-indene-5,7-diy]]bis(methylene)] di-2-propenoate and Unilin 350 2-propenoate	