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Dental Products Causing Neuro-Cutaneous Syndrome (NCS) Symptoms In NCS Patients

© By Omar M. Amin, BSc, MSc, PhD. USA

Abstract

Neurocutaneous Syndrome (NCS) was recently described from many patients showing dermatological and neurological disorders. Certain dental materials, especially sealants, were documented to be the causative agents of this syndrome. A comprehensive listing of about 350 more dental products than originally reported is included herein. It is recommended that dentists research MSDS sheets for proposed dental materials to be used, and match blood bio-compatibility test results with patients' dental history before embarking on, at least major, dental procedures.

Introduction

Neurocutaneous Syndrome (NCS) was first described by Amin.¹ A detailed diagnosis and notes on its management with three case histories were reported by Amin^{2,3} and the clinical histories of 24 NCS patients diagnosed at the Parasitology Center, Inc. (PCI) were included in Amin.⁴ Seven of the 24 cases reported in Amin⁴ who followed and completed the PCI rehabilitation protocols summarized in the same publication have completely recovered. An additional two have also recovered since. The cause-effect relationship was established. This presentation documents many more dental sealants than originally reported in Amin.²⁻⁴

Materials and Methods

The active toxic ingredients established as the causal factors for NCS observed in many of our patients were researched using actual patient histories, symptomology and MSDS sheets of dental materials used. About 350 additional dental products including the same toxic ingredients were also similarly studied and reported herein.

Results and Discussion

The components in catalysts and bases of the sealants Dycal, Life and Sealapex were identified in Amin^{2,3} who provided an analysis of the nature of action of the included toxic ingredients causing the observed dermatological and neurological symptoms in NCS patients. Reference was also made to Fynal, IRM, Sultan U/P, Gluma One Bond and Scotch Bond by Amin.³ These dental products and over 350 others are now recognized as toxic. Toxicity and individual reactivity will vary from person to person depending on degree of sensitivity to the compounds which is related to the concentration of the toxic ingredient(s) in the product, amount of product used and the number of teeth involved.

About 360 dental compounds are included in this paper. The toxic ingredients common to all belong in four major categories: Zinc Oxide, Ethyltoluene Sulfonamide (especially in patients with allergy to sulfa and toluene), Titanium Dioxide and other metal compounds (especially in patients with allergy to metals) and Methacrylate compounds as well as Calcium Hydroxide. Our studies of the many NCS patients examined indicate that these ingredients are causally associated with their symptoms. It should be noted that the included list is not comprehensive but rather preliminary. Undoubtedly, more dental products include these ingredients. I have concluded, however, that the listing of more dental compounds will not make the point any stronger at this time. Dentists should be only satisfied when identifying a toxic ingredient in a dental product whether it is included in this list or not. It is therefore important that dentists examine the MSDS of products to be used, especially in major procedures, and insure their biocompatibility to patients' biological as well as energy systems.

¹ Amin OM, Neuro-cutaneous Syndrome (NCS): a new disorder. *Explore* 10:55-56, 2001 ² Amin OM, On the diagnosis and management of neurocutaneous syndrome, a toxicity disorder from dental sealants. *Calif Dent Assoc J* 32: 657-663, 2004. ³ Amin OM, Dental sealant toxicity: neurocutaneous syndrome (NCS), a dermatological and neurological disorder. *Hol Dent Assoc J* 2004: 1-10 + table, 2004. ⁴ Amin OM, On the course of neurocutaneous syndrome (NCS) and its pseudo-diagnosis by medical professionals. *Explore* 13: 4-9, 2004

The following is a listing of the dental products studied and their toxic ingredients.

A-paste, clearfil DC3 cement:

*hydrophobic dimethacrylate,
bisphenol a diglycidylmethacrylate,
triethyleneglycol dimethacrylate*

Absolute Dentin (All Shades)

*uncured methacrylate
ester monomers*

Access crown:

urethane dimethacrylate

Acrylic Primer:

methyl methacrylate

Activator, clearfil porcelain bond:

*bisphenol a polyethoxy
dimethacrylate,
3-methacryloyloxypropyl trimethoxy*

Adper:

dimethacrylates

Add&Bond:

uncured methacrylate

Adhesive Bond II:

*methacrylates, maleic-acid-
mono-2-methacryloyl-oxyethylester*

Adper prompt self-etch adhesives:

*methacrylated phosphoric esters,
20hydroxyethyl methacrylate (hema)*

Aelite Aesthetic enamel:

*ethoxylated bisphenol
a diglycidylmethacrylate*

Aelite Liner Base:

*bisphenol a diglycidylmethacrylate,
ethoxylated bisphenol a dimethacrylate*

Aelite Liner Catalyst:

*bisphenol a diglycidylmethacrylate,
triethyleneglycol, triethyleneglycol
dimethacrylate*

Aelite Purpose Body:

*ethoxylated bisphenol
a dimethacrylate, triethyleneglycol
dimethacrylate*

Aelite Posterior:

*ethoxylated bisphenol
a dimethacrylate*

Aelite Packable Dentin:

*ethoxylated bisphenol
a dimethacrylate*

Aeliteflo / Aeliteflo LV:

*ethoxylated bisphenol
a dimethacrylate, triethyleneglycol
dimethacrylate*

AH 26 Power:

titanium dioxide

Alginate Impression Materials:

potassium titanium fluoride

All-Bond 2:

dimethacrylates

All-Bond 2 Primer A:

*na-n-tolylglycine
glycidylmethacrylate*

All Bond 2 Primer B:

biphenyl dimethacrylate

Alloy primer:

*10- methacryloyloxydecyl
dihydrogen phosphate*

**Amalgam Bonding Base
and Catalyst:**

*ethoxylated bisphenol
a dimethacrylate,
triethyleneglycol dimethacrylate*

Amalgambond HPA Powder:

poly methyl methacrylate

Anchor:

*Mixture of methacrylate resins,
including bisgma*

Aquasil monophase:

titanium dioxide

Aquasil Rigid:

titanium dioxide

Aquasil XLV:

titanium dioxide

Aquasil Putty:

titanium dioxide

Aquasil LV:

titanium dioxide

Aquasil Deca Monophase:

titanium dioxide

Aquasil Deca Heavy:

titanium dioxide

ArtGlass:

methacrylates

ArtGlass connector:

methyl methacrylate

ArtGlass Creative Colorfluids:

methacrylates

ArtGlass Liquid:

trimethylolpropanethoxytriacylate

ArtGlass Opaque:

trimethylolpropanethoxytriacylate

ArtGlass Creative Transpafluid TF1:

methacrylates

ArtGlass Creative Transpafluid TF2:

methacrylates

Attachment bond base:

methacrylates

Attachment bond cat:

methacrylates

Aurora Visible Light Curing

Custom Tray Resin Liquid:

methyl methacrylate

B-paste, clearfil DC cement:

*hydrophobic dimethacrylate,
bisphenol a diglycidylmethacrylate,
triethyleneglycol dimethacrylate,
hydrophilic dimethacrylate*

Band-Rite:

methacrylate resins

Barricaid:

urethane dimethacrylate resin

Bis- Core Dual Cure Catalyst:

*bisphenol
a diglycidyl methacrylate,
triethyleneglycol dimethacrylate*

Bisfil core:

methacrylates

Bisfil II base paste:

dimethacrylates, methacrylates

Bisfil 2B:

dimethacrylates, methacrylates

Bis-GMA Composite:

*bisphenol a-glicidyl
methacrylate resin*

Blocset Liquid:

methacrylates

Blocset paste:

methacrylates

Bond 1:

dimethacrylates

Bond liquid, clearfil protect bond:

*bisphenol a diglycidylmethacrylate,
20 hydroxyethyl methacrylate,
hydrophobic dimethacrylate,
n,n-diethanol-p-toluidine*

Bond liquid A, clearfil liner bond 2v:

*bisphenol a diglycidylmethacrylate,
2- hydroxyethyl methacrylate,
hydrophobic dimethacrylate,
n,n- diethanol-p-toluidine*

Bond liquid B, clearfil liner bond2v:
*bisphenol a diglycidylmethacrylate,
2-hydroxyethyl methacrylate,
hydrophobic dimethacrylate*

Brush & Bond:
*methyl methacrylate,
2-hydroxyethyl methacrylate (hema)*

Calcigel:
calcium hydroxide

Calplus:
calcium hydroxide

Calcium Hydroxide Powder:
calcium hydroxide

Calibra:
*polymerizable dimethacrylate resin,
titanium dioxide*

Calciject:
calcium hydroxide

Catalyst liquid, clearfil new bond:
*bisphenol a diglycidylmethacrylate,
10-methacryloyloxydecyl
dihydrogen phosphate,
2-hydroxyethyl methacrylate,
hydrophobic dimethacrylate*

Catalyst liquid, clearfil photo bond:
*bisphenol a diglycidylmethacrylate,
10-methacryloyloxydecyl
dihydrogen, 2-hydroxyethyl
methacrylate,
hydrophobic dimethacrylate*

Catalyst paste, clearfil core new bond:
*triethyleneglycol
dimethacrylate,
bisphenol a diglycidylmethacrylate*

Catalyst paste, panavia 21:
*bisphenol a polyethoxy
dimethacrylate, 10-methacryloy-
loxydecyl dihydrogen phosphate,
hydrophobic dimethacrylate*

Cavalite:
*hydroxyethylmethacrylate,
dimethacrylates*

Cavitec Base:
zinc oxide

Cavit:
zinc oxide

Cavity liner (PCL):
calcium hydroxide

C & B Cement Catalyst:
*bisphenol a diglycidylmethacrylate,
triethyleneglycoldimethacrylate*

**C & B Cement Base, Opaque,
Natural and Natural with fluoride:**
*bisphenol a diglycidylmethacrylate,
ethoxylated bisphenol
a dimethacrylate*

Charisma/Charisma:
methacrylates

Charisma Creative Colorfluids:
methacrylates

Choice Dual-Cure Liquid Catalyst:
bisphenol diglycidylmethacrylate

**Chromackone Alginate
Impression Materials:**
potassium titanium fluoride

Citricon Base Paste:
Zinc Oxide

**Choice Aesthetic Resin
Cement Base And Paste catalyst:**
bisphenol diglycidylmethacrylate

Clearfil AP-X PLT:
*bisphenol a diglycidylmethacrylate,
triethyleneglycol dimethacrylate*

Clearfil S3:
*2-hydroxyethyl methacrylate,
bisphenol a diglycidylmethacrylate,
10-methacryloyloxydecyl*

Clearfil SE Bond:
*2-hydroxyethyl methacrylate,
dimethacrylates,
10-methacryloyloxydecyl*

Clearfil SE Primer:
*2-hydroxyethyl methacrylate,
dimethacrylates*

Clearfil st opaquer:
*bisphenol a diglycidylmethacrylate,
triethyleneglycol dimethacrylate*

Clearfil-S-Bond:
*2-hydroxyethyl methacrylate,
bisphenol a diglycidylmethacrylate,
10-methacryloyloxydecyl*

Cohen Luks Root Canal Powder:
zinc oxide

Coltosol F:
zinc oxide

Cool Natural:
methacrylates

Cool Temp:
methacrylates

Composite, clearfil photo core:
*bisphenol a diglycidylmethacrylate,
triethyleneglycol dimethacrylate*

Comspan & Comspan Opaque:
*polymerizable dimethacrylate resin,
titanium dioxide*

Contax Bond/Primer:
*aromatic dimethacrylate, p
olyol-mono,- dimethacrylate,
polycarboxylic polymethacrylate*

**Contemporary Colored
Ortho-Jet Liquid:**
*methyl methacrylate,
n,n-dimethyl-p-toluidine*

**Contemporary Colored
Ortho-Jet Powder:**
plasticized methacrylate polymer

Core-Flo Base/ Catalyst:
*ethoxylated bisphenol
a dimethacrylate,
triethyleneglycol dimethacrylate,
bisphenol a diglycidyl methacrylate*

**Corestore 2 Paste Products
(restorative composite):**
uncured methacrylate ester monomers

CRCS:
calcium hydroxide, zinc oxide

D/E Resin:
*bisphenol diglycidylmethacrylate,
urethane dimethacrylate,
hydroxyethyl methacrylate*

Dentacolor:
dodecandioldimethacrylate

Dentacolor Creative Colorfluids:
methacrylates

Dentacolor Connector:
methyl methacrylate

Dentacolor Modeling Liquid:
methacrylates

Dentacolor Opaquer Liquid:
methyl methacrylate

**Dentacolor Creative
Transpafluid T1:**
methacrylates

**Dentacolor Creative
transpafluid T2:**
methacrylates

Dentalis KEZ:
zinc oxide and calcium hydroxide

Dentalon plus liquid:
*n-butyl methacrylate,
ethyl methacrylate*

Dentalon plus powder:
benzyl-5-phenylbarbituric ure:

Denthesive II B:*hydroxyethyl methacrylate***Dentpro:***zinc oxide-eugenol cement***Desenzal:***hydroxyethyl methacrylate n/e n/e***Doc's best root canal sealer with copper:***zinc oxide***DT Temporary Dressing:***calcium hydroxide***DUO-Link Base/Catalyst:***bisphenol a diglycidyl methacrylate, triethyleneglycol dimethacrylate, urethane dimethacrylate***DuraFill:***methacrylates***Durelon:***zinc oxide***Dycal:***calcium hydroxide, ethyltoluene sulfonamides, zinc oxide, titanium dioxide, barium sulphate***Dyract:***urethane dimethacrylate resin, polymerizable trimethacrylate resin***Ed Primer II-liquid A, panavia F 2.0:***2-hydroxyethyl methacrylate, 10-methacryloyloxydecyl dihydrogen phosphate, n-methacryloyl 5-aminosalicylic acid, n,n-diethanol p-toluidine***Ed Primer II-liquid B, panavia 2.0:***n-methacryloyl 5-aminosalicylic, n,n-diethanol p-toluidine***Ed Primer-liquid A, panavia 21:***2-hydroxyethyl methacrylate, 10-methacryloyloxydecyl dihydrogen phosphate, n-methacryloyl 5-aminosalicylic acid, n,n-diethanol p-toluidine***Ed Primer liquid B, panavia 21:***n-methacryloyl 5-aminosalicylic acid, n,n-diethanol p-toluidine***Elan (Restorative Composite):***uncured methacrylate ester monomers***Electric Ortho-Jet Powder:***methacrylate copolymer***Embrace WetBond Class V****(EMV, EMVA2, EMVA35, EMVB2, EMVD2):***acrylate resins***Embrace WetBond First Coat****(EMFC):***acrylate resins***Embrace WetBond Opaquer****(EMOP):***acrylate resins***Embrace WetBond****Pit and Fissure Sealant****(EMS,EMS3,EMSW,EMSW3):***acrylate resins***Embrace WetBond Seal-n-Shine****(EMSNS,EMSNY):***acrylate resins***Embrace WetBond****Universal resin cement****(EMCA,EMCAR,EMCS,EMCSR):***acrylate resins***Encore AF:***bisphenol diglycidyl methacrylate, triethylene glycol methacrylate***Encore Bond:***diutethane dimethacrylate, hydroxyethyl methacrylate***Epic-AP:***methacrylate monomers (bi-functional)***Epic-TMPT Composite:***di-2-methacryloxyethyl***3M ESPE Clinpro:***bisphenol A diglycidyl, triethylene glycol dimethacrylate, titanium dioxide***Estic Bond Base:***methacrylates, (4-methylphenyl) imino bisethanol***Estic Bond Cat:***methacrylate***Estic Microfill Base:***methacrylates***Estic Microfill Cat:***methacrylates***Esthet. X Flow:***titanium dioxide, urethane modified bis-gma dimethacrylate, polymerizable dimethacrylate resin***Estiseal LC:***methacrylates***Etch-Free Components A&B:***methyl methacrylate***Fi-cem Paste Alecks Zinc (Mizzy):***zinc oxide***Fill In Base Paste Products****(Temporary Crown and Bridge Material):***uncured methacrylate ester, methyl methacrylate monomers***Fill In Catakyst Paste (Temporary Crown and Bridge Material):***uncured methacrylate ester monomers***Filtek:***dimethacrylates***Filtek Z100:***methacrylates***Filtek Z250:***dimethacrylates***Flexacryl Hard Liquid:***n-butyl methacrylate, dimethyl-p-toluidine***Flexacryl Soft Liquid:***n-butyl methacrylate, dimethyl-p-toluidine***Flexacryl Powder:***plasticized methacrylate polymer***Flows-Rite:***methacrylate resins***Fluroshield:***titanium dioxide, polymerizable dimethacrylate resin, urethane modified bis-gma dimethacrylate***Formatray Liquid****(Custom Tray Material):***methyl methacrylate monomers***Fortify:***urethane dimethacrylate, ethoxylated bisphenol a dimethacrylate***Fortify Plus:***urethane dimethacrylate, ethoxylated bisphenol A dimethacrylate***Fuji 2:***hydroxyethyl methacrylates***Fuji:***2-hydroxyethyl-methacrylates***Fynal Liquid:***zinc oxide eugenol permanent cement***Fynal Powder:***zinc oxide***Gluma Comfort Bond:***2-hydroxyethyl-methacrylates***Gluma One Bond:***2-hydroxyethyl-methacrylates*

Gold Alloys (Noble):
allergy to some alloys

Guardian Seal:
methacrylates

Gutta Flow:
zinc oxide

Gutta Percha:
zinc oxide

Hard Core:
methacrylate resins

Heliomolar:
dimethacrylates

HEMA Composite:
hydroxy ethyl dimethacrylate

Herculite XR Paste Products:
uncured methacrylate ester monomers

Herculite XRV Paste Products (restorative composite):
uncured methacrylate ester monomers

High Impact-45

Denture Acrylic Liquid:
methyl methacrylate, trimethylolpropane, trimethacrylate

Histocryl:
hydrophilic methacrylate, methacrylate ester

Hi-X Base:
dimethacrylates

Hy-Bond (shofu):
zinc oxide

Hydrosil XT:
calcium sulfate, titanium dioxide

Hypocal SN:
calcium hydroxide

Ideal Light Cure Bracket Adhesive:
methacrylates

Illusion Base:
ethoxylated bisphenol A dimethacrylate, triethyleneglycol dimethacrylate

Illusion Catalyst:
bisphenol A diglycidylmethacrylate, triethyleneglycol dimethacrylate

Illusion Color Modifier:
triethyleneglycol dimethacrylate

Illusion Viscosity Modifier:
ethoxylated bisphenol A dimethacrylate

Immediate Liquid:
methyl methacrylate

Instant Tray Mix Liquid:
methyl methacrylate, n,n-dimethyl-p-toluidine

Instant Tray Mix Powder:
methyl methacrylate/ethyl acrylate

Integrity:
multifunctional methacrylates

Ionosit Baseline:
aliphatic dimethacrylate, aromatic dimethacrylate, polycarboxylic polymethacrylate

IRM powder:
zinc oxide

Jet Acrylic Powder-Jet Tooth Shade, Jet Denture Repair, Ortho-Jet:
plasticized methacrylate polymer

Jet Adjuster Brush Cleaner:
methyl methacrylate

Jet Liquid, Ortho-Jet Liquid:
methyl methacrylate, n,n-dimethyl-p-toluidine

Jet Seal:
methyl methacrylate

Jet Tray Liquid:
methyl methacrylate, n,n-dimethyl-p-toluidine

Jet Tray Powder:
plasticized methacrylate polymer

Kevloc Primer:
methacrylates

Kolor +:
uncured methacrylate ester monomers

Life:
zinc oxide, ethyltoluene sulfonamide, calcium hydroxide, titanium dioxide, barium sulphate

Light Core:
bisphenol diglycidylmethacrylate, ethoxylated bisphenol a dimethacrylate

Light Cure Dental Composite (Ecusphere):
urethane dimethacrylate, aliphatic dimethacrylate, aromatic dimethacrylate

Light Cure Dental Composite:
urethane dimethacrylate, aliphatic dimethacrylate, aromatic dimethacrylate

Light Cure Dental Composite (Ecusit):
urethane dimethacrylate, aliphatic dimethacrylate, aromatic dimethacrylate

Light Cured Space Maintainer Syringe:
aromatic aliphatic dimethacrylate monomers

LR Gold:
dimethacrylate resin, methacrylate ester, dimethyl para toluidine

LR White:
dimethacrylate resin, methacrylate ester, dimethyl para toluidine

LuxaBite:
urethane dimethacrylate, aromatic dimethacrylate, glycol methacrylate

LuxaCore, LuxaCore Dual:
urethane dimethacrylate, aliphatic dimethacrylate, aromatic dimethacrylate

Luxatemp, Luxatemp Solar, Luxatemp Fluorescence:
urethane dimethacrylate, aromatic dimethacrylate, glycol methacrylate

Magic Fil:
aliphatic dimethacrylate, aromatic dimethacrylate, carboxylic methacrylate

Matrix Carbio adhesive:
glycerol dimethacrylate

Matrix Cabrio Catalyst:
n-toluene glycine, glycidil methacrylate

Maxcem Paste Products:
uncured methacrylate ester monomers

Metal Primer:
alkyl dimethacrylate resins

Modern Tenacin:
zinc oxide

Modeling Resin:
urethane dimethacrylate, ethoxylated bisphenol a dimethacrylate

Mucosoft Adhesive Agent:
methyl methacrylate

Multi-Cal (Multi, Multi-3):
calcium hydroxide

Nexus 2 paste products:
uncured methacrylate ester monomers

**Nickle or Cobalt-chrome
(Base-metal) Alloys:**

*nickel allergies are common
among women.*

One Coat Bond:

*hydroxyethylmethacrylate,
methacrylates*

One-UP Bond F Bonding Agent A:

methacrylates

One Step:

*biphenyl dimethacrylate,
hydroxyethyl methacrylate*

One Step Plus:

*biphenyl dimethacrylate,
hydroxyethyl methacrylate*

Opaker:

uncured methacrylate ester monomers

Optibond Dual Cure**Activator Resin:**

uncured methacrylate

Optibond Solo:

dimethacrylates

Optiguard:

methacrylates

Orafil-Plus:

zinc oxide

Orafil-G:

zinc oxide

Ortho-Choice OBA:

methacrylate resins

Ortho-Jet Tinting Concentrate:

*methyl methacrylate,
n,n-dimethyl-p-toluidine*

Palabond:

methyl methacrylate, methacrylic acid

Paladon 65 Liquid:

methacrylates

Paladon 65 Powder:

methacrylate copolymerisates

Paladur Liquid:

methyl methacrylate

Paladur Powder:

methacrylate copolymerisates

Palapress Vario Liquid:

*methyl methacrylate,
ethylene dimethacrylate*

Palapress Vario Powder:

methacrylate copolymerisates

Palaseal:

methyl methacrylate

Palavit G LC K I:

triethyleneglycoldimethacrylate

Palavit G LC Modelling Liquid:

triethyleneglycoldimethacrylate

Palavit 55 VS Liquid:

methyl methacrylate

Parabond adhesive A:

*hydroxyethylmethacrylate,
methacrylates*

ParaPost Cement Base:

methacrylates

ParaPost Cement Catalyst:

methacrylates

ParaPost Cement Conditioner A:

*hydroxyethylmethacrylate,
methacrylates*

PDMA Composite:

polycarbonate dimethacrylate resin

Perfectemp II Temporary Cement:

*urethane dimethacrylate, aromatic
dimethacrylate, glycol methacrylate*

Permaceem, Permaceem Dual:

*aliphatic dimethacrylate, aromatic
dimethacrylate, carboxylic
methacrylate bisphenol a.
(bowen resin) toxic when uncured*

Point 4:

uncured methacrylate ester monomers

**Point 4 flowable optimized
particle composite system:**

uncured methacrylate ester monomers

PolyCarb Waterset:

zinc oxide

Post Cement Hi-X base/catalyst:

*bisphenol a diglycidylmethacrylate,
ethoxylated bisphenol a dimethacrylate
(base only) triethyleneglycol
dimethacrylate*

Porcelain fused- to- metal:

allergy to metal alloys

Post Cement Hi-X Base/Catalyst:

*bisphenol A diglycidylmethacrylate,
triethyleneglycol dimethacrylate*

Pre-Bond Resin:

*bisphenol a diglycidylmethacrylate,
triethyleneglycol dimethacrylate*

Premium Denture Acrylic Liquid:

*methyl methacrylate,
trimethylolpropane, trimethacrylate*

Premium Powder:

methacrylate polymer

**Premium Super-20 Denture
Acrylic Liquid:**

methyl methacrylate

Premium Super-20-Powder:

methacrylate polymer

Premisa low shrinkage**composite system:**

uncured methacrylate ester monomers

Premise:

methacrylates

Premise low shrinkage**composite system:**

uncured methacrylate ester monomers

Prime & Bond:

toluenesulfinate

Prime & Bond NT:

*urethane dimethacrylate resin,
polymerizable dimethacrylate resins,
polymerizable trimethacrylate resins*

Primer liquid A,**clearfil liner bond:**

*2- hydroxyethyl methacrylate,
hydrophilic dimethacrylate,
10- methacryloyloxydecyl,
dihydrogen phosphate,
n,n- diethanol-p-toluidine*

Primer liquid B,**clearfil liner bond:**

*2- hydroxyethyl methacrylate,
hydrophilic dimethacrylate*

Primer liquid,**clearfil protect bond:**

*2- hydroxyethyl methacrylate,
hydrophilic dimethacrylate*

Prisma AP.H:

*urethane modified bis-gma
dimethacrylate, polymerizable
dimethacrylate resin*

Prisma VLC Dycal:

*calcium hydroxide, barium sulfate,
urethane dimethacrylate resin,
polymerizable dimethacrylate resin*

PrepEze desensitizer:

hydroxyethyl methacrylate

ProBond Adhesive :

*(all purpose bonding agent)
urethane dimethacrylates resin,
polymerizable dimethacrylate resin*

Prodigy:

uncured methacrylate ester monomers

Prodigy condensable:

uncured methacrylate ester monomers

Provisional Monomer:

*alkyl methacrylate,
dimethylp-toluidine*

Pulpdent:

zinc oxide

Pulpdent Pulp Capping**Paste (PSYK,PSY):**

calcium hydroxide

Pulpdent Cavity Liner (PCL):

calcium hydroxide

Pulpdent TempCanal**(PTCK,PTC):**

calcium hydroxide

Pulpdent Multi-Cal**(MULTI,MULTI-3):**

calcium hydroxide

Calcium Hydroxide Powder**(CH4,CH16):**

calcium hydroxide

Pulpdent Paste**(PSYK,PSY,PSYN):**

calcium hydroxide

Pulpdent Root Canal Sealer**Liquid (RSL,RSL-2):**

2-methoxy-4-(2-propenyl) phenol

Pulp Canal Sealer Powder:

zinc oxide

Pyramid Enamel:

*ethoxylated bisphenol
a dimethacrylate,
triethyleneglycol dimethacrylate*

Pyramid Dentin:

*bisphenol diglycidylmethacrylate,
ethoxylated bisphenol
a dimethacrylate,
triethyleneglycol dimethacrylate*

Quixx:

*ethoxylatedbisphenol
a dimethacrylate, polymerizeable
carboxylic acid dimethacrylate resin,
triethyleneglycoldimethacrylate,
polymerizable trimethacrylate resin*

Regisil:

titanium dioxide

Relate Monomer:

*isobutyl methacrylate monomers,
ethylene glycol dimethacrylate
monomers, n,n-dimethyl-p-tolu-
idine*

Reposil Impression Material:

titanium dioxide

ResiLute Multi-Purpose Resin:

methacrylate resins

Resin Liquid:

methyl methacrylate

ResinCap Powder:

Plasticized methacrylate polymer

Resin, teethmate F-1:

*bisphenol a polyethoxy
dimethacrylate,
triethyleneglycol dimethacrylate,
10methacryloyloxydecyl dihydrogen
phosphate, 2-hydroxyethyl methacrylate*

Resinomer Base:

*bisphenol a diglycidylmethacrylate,
hydroxyethyl methacrylate*

Resinomer Catalyst:

*triethyleneglycol dimethacrylate,
diphenylsulfone dimethacrylate*

Revolution-formula2:

uncured methacrylate ester monomers

Rubber base adhesive:

toluene

Scotchbond Multi-Purpose:

2-hydroxyethyl-methacrylates

Sealapex:

*ethyltoluene sulfonamide, zinc
oxide, calcium oxide, titanium
dioxide, barium sulphate*

Sealite natural resin:

uncured methacrylate ester monomers

Sealite opaque resin:

uncured methacrylate

Seal-rite UDMA pit and fissure:

*urethane dimethacrylate
and methacrylate resin*

Seal-rite low viscosity pit**and fissure sealant:**

methacrylate resin

Self Curing Denture Liquid:

*methyl methacrylate,
n,n-dimethyl-p-toluidine*

Self Curing Denture Powder:

Plasticized methacrylate polymer

Silibond:

*meth methacrylate, bisphenol
a-bis (hydroxypropylmethacrylate),
triethyleneglycoldimethacrylate*

Silicoup B:

trimethoxysilylpropyl methacrylate

Smartemp (all Shades):

uncured methacrylate ester monomers

Snap bond dentin adhesive:

2-hydroxyethyl methacrylate

Snap Monomer:

*Isobutyl methacrylate monomer,
ethylene glycol dimethacrylate
monomers, n,n-dimethyl-p-toluidine*

Snap resin (powder)**without Cadmium:**

titanium dioxide

Sparkle Ortho-Jet Powder:

methacrylate copolymer

Splintline Liquid:

dimethyl-p-toluidine

Splintline Powder:

methacrylate polymer

Structure 2 SC:

dimethacrylates

Sultan:

eugenol

Sultan Sensi-Temp:

multifunctional methacrylates

**Surefil (High density
posterior composite):**

*urethane modified bis-gma
dimethacrylate, polymerizable
dimethacrylate resin*

Synergy Compact:

methacrylates

Synergy Duo Shade:

methacrylates

Synergy Flow:

methacrylates

Synergy Super White:

methacrylates

Synergy Transparent:

methacrylates

TEGMA Composite:

*triethylene glycol
dimethacrylate resin*

TempCanal (PTCK,PTC):

calcium hydroxide

Temporary Bridge Resin Liquid:

*methyl methacrylate,
polymerizable dimethacrylate*

Temp Bond Base:

zinc oxide

Temp-Bond Accelerator:

eugenol

Temp Glaze:

methyl methacrylate

- Tempit:**
urethane dimethacrylate
- TempoCemNE:**
zinc oxide
- TempoCem.TempoCem Soft:**
zinc oxide, eugenol
- TimeLine VLC Baseline**
with dentin primer:
urethane dimethacrylate
- TotalBond Liquid:**
*2-hydroxyethyl methacrylate,
4-methacryoxyethyltrimellitic
acid anhydride, diacrylate of
polycondensate of bisphenol
a glycidyl ether, dimethacrylate
of polycondensate of bisphenol
a and glycol, dimethacrylate
of polycondensate of glycol*
- TotalBond Powders**
(light, medium and dark):
copolymer of methacrylates
- TPH 3 Micro:**
*titanium dioxide, urethane
modified bis-gma dimethacrylate,
polymerizable dimethacrylate resin*
- TPH Spectrum:**
*urethane modified bis-gma
dimethacrylate, polymerizable
dimethacrylate resin*
- TR2 Temporary Cement:**
*uncured acrylate,
methacrylate ester monomers*
- Triethylene Glycol**
Dimethacrylate:
toxic when uncured
- Triphasix Aliginate Tray Adhesive:**
Toulene
- Tubli-Seal:**
zinc oxide eugenol
- Tubulitee Cavity Liner:**
calcium hydroxide
- Turbo Temp:**
multifunctional methacrylates
- Twinlook Cement Base:**
methacrylates
- Twinlook Cement Cat:**
methacrylates
- Tylok-Plus:**
zinc oxide, polyacrylic acid
- Tyrian SPE Part B:**
bis 2-methacryloyloxy
- UDMA Compisite:**
urethane dimethacrylate resin
- Ultrafil Gutta Percha cannules:**
usp zinc oxide, barium sulfate
- Unicem: (relyx unicem):**
methacrylates; dimethacrylates
- Unicem Rely X:**
methacrylates, dimethacrylates
- Universal liquid,**
clearfil new bond:
n,n- diethanol p-toluidine
- Universal liquid,**
clearfil photo bond:
n,n-diethanol p-toluidine
- Universal paste,**
clearfil core new bond:
*bisphenol a diglycidylmethacrylate,
triethyleneglycol dimethacrylate,
n,n-diethanol-p-toluidine*
- U/P Root Canal Powder:**
zinc oxide
- VersaFlo:**
*glycol methacrylate, multifunctional
methacrylates, barium glass*
- Vitapex:**
calcium hydroxide
- Vitre-Bond:**
dimethacrylates
- 3RM Liquid:**
zinc oxide eugenol
- 3M single bond (Ad Per):**
dimethacrylates, methacrylates
- Wachs Root Canal Powder:**
zinc oxide
- Xeno III:**
hydroxyethyl methacrylate
- Xeno IV:**
*urethane dimethacrylate resin,
dipentaerythritol pentaacrylate
phosphate, polymerizeable
dimethacrylate resin*
- Zical:**
zinc oxide
- Zinc Oxide Powder:**
zinc oxide, eugenol
- Zinocol Polymer**
Reinforced Zoe Cement:
zinc oxide, eugenol
- Zircate Propthy Paste:**
tin oxide
- Zoe B & T Liquid:**
eugenol
- Zoe B & T Powder:**
zinc oxide
- 2 bond 2 base:**
dodecandiol dimethacrylate ☼

A contribution of

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