

UV Nail gel enhancements are quickly becoming more popular and complex. The industry has advanced quickly from the earliest four-step systems to today's gel polishes and one-step systems. Esstech has been involved throughout, supplying quality monomers, adhesion promoters and technical advice. The bottom line, your gel formulation is only as good as the ingredients you use. Trust a company with experience, trust Esstech.

Contact us directly to discuss any of the following materials or the many other chemicals Esstech has to offer, [techsupport@esstechinc.com](mailto:techsupport@esstechinc.com).

BASE RESINS:

## URETHANE DIMETHACRYLATE, UDMA, DUDMA, DIURETHANE DIMETHACRYLATE

**Description:** *Often used in light-cure systems, our X-850-0000 cures to form a hard, glassy surface that is low in color and bisphenol A free!*

**Product Code:** X-850-0000

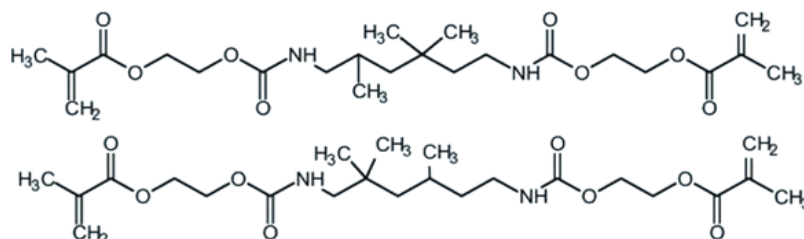
**Viscosity (25°C):** 8500 cps

**INCI NAME:** DI-HEMA Trimethylhexyl Dicarbamate

**Color (APHA):** 25 max

**CAS#:** 72869-86-4

**Inhibitor:** 150 ppm MEHQ



## EXOTHANE 26 "NEW" EXOTHANE™ ELASTOMERS

**Description:** *Exothane 26 is specifically designed urethane for nail applications. This material is very low in color and not detrimental to soak-off formulations.*

**Product Code:** X-892-0000

**Viscosity (40°C):** 24.36 PaS

**INCI NAME:** Pending

**Color (APHA):** 25 max

**CAS#:** 72869-86-4

**Inhibitor:** 150 ppm MEHQ

Other Base Resins include:

X-726-0000

PEG 400 Extended Urethane Dimethacrylate

X-950-0000

Bisphenol A Glycidyl Methacrylate

X-930-0000

EXOTHANE 10 Low-Shrink

Esstech offers a variety of adhesive monomers for improving the bond between monomeric or polymeric materials (such as a curable acrylic monomer/polymerized acrylic system) to a keratinaceous substrate like fingernails.

ADHESION PROMOTERS:

**HEMA MALEATE**

**METHACROYLOXYETHYL MALEATE**

**Description:** *HEMA maleate is a carboxylic acid-containing methacrylate. These functional groups allow for hydrogen bonding and improved adhesion to the nail plate. As a low viscosity, monomethacrylate, it makes an ideal diluent for soak-off formulations.*

**Product Code:** X-846-00000

**Viscosity (25°C):** 300 cps

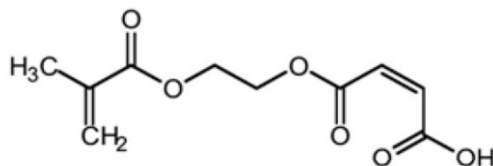
**INCI NAME:** DI-HEMA Trimethylhexyl Dicarbamate

**Color (APHA):** 300 max

**CAS#:** 51978-15-5

**Inhibitor:** 250 ppm MEHQ

**EINECS:** 257-569-5



**PMGDM**

**PYROMELLITIC DIANHYDRIDE GLYCEROL DIMETHACRYLATE**

**Description:** *PMGDM's four methacrylate groups and two carboxylic acid groups allow it to bond to various substrates and provide cross-linking capability. In nail enhancement formulations, it provides a bridge between other chemicals and the nail.*

**Product Code:** X-830-0100

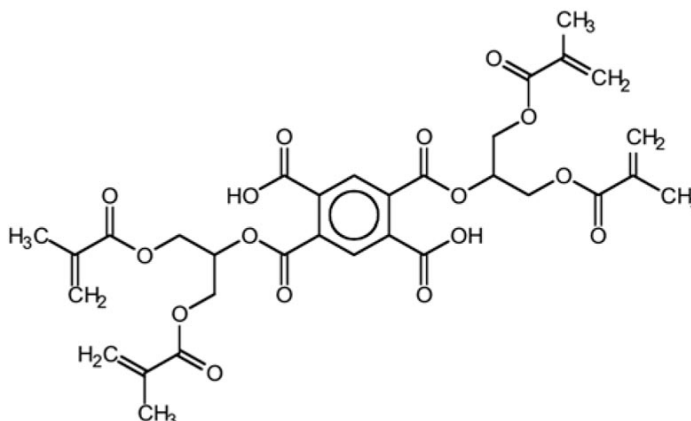
**Viscosity (25°C):** TBD

**INCI NAME:** Bis (Glyceryl Dimethacrylate) Pyromellitate

**Color (APHA):** TBD

**CAS#:** 148019-46-9

**Inhibitor:** 250 ppm MEHQ



## CURRENT NAIL SYSTEMS

**BASE COAT** – a thin, colorless layer, provides adhesion to the nail  
Creates a barrier between the nail plate to prevent staining  
Dissolves in solvent in the desired amount of time (Soak-off systems)  
Applies evenly on the nail

**COLOR COAT** – pigmented layer that provides the “bulk” of system  
Provides strength and durability to finished nail  
Color stable  
Appropriate cure

**TOP COAT** – a thin, colorless, main contributor of gloss and scratch resistance  
Can include additives to enhance appearance  
Applies evenly on the nail

## EXAMPLE BRUSH-ON GEL FORMULATION

| <u>PRODUCT CODE</u> | <u>NAME</u>                          | <u>AMOUNT (w/w%)</u> |
|---------------------|--------------------------------------|----------------------|
| X-892-0000          | EXOTHANE 26                          | 35                   |
| X-850-0000          | Urethane Dimethacrylate              | 25                   |
| X-943-7466          | Triethylene Glycol Dimethacrylate    | 5                    |
| X-727-0000          | Polypropyleneglycol Monomethacrylate | 32                   |
| ---                 | Irgacure 500                         | 3                    |