

• Instructions For Use

Primer Mix (see video)

1. Premix 25 parts of Ethanol with 25 parts of DI water
2. Add slowly with agitation 50 parts of Primer 5-017
3. Slowly add 1.5 parts Crosslinker A with agitation
4. Mix for 5 min. Minimum.
5. Product may be made at lower or higher solids/viscosity by adding or reducing the amount of solvents (IE. 10/10 parts of each ethanol and water). A small amount of ethanol alone may be sufficient to reduce the surface tension and allow good wetting and adhesion.
6. *Coat by dip, wipe, flow or spray etc. after determining the best transfer efficiencies for the geometry of your parts. Allow to sag and wipe excesses that may accumulate at the lowest section of your part. If needed mask or use a mandrel to protect the lumen or other parts to be uncoated.*
7. *Dry 5 minutes at 160 F or other suitable time/temperature profile before topcoating. the primed part may sit for several days at ambient before coating. The dried/cured primer is tacky when warm and may stick to other primed parts. Alternatively*
 8. *This formula ratio may be scaled up or down proportionally to the volume needs for R+D or manufacturing.*

Patented Topcoat hydrophilic (See video)

1. To 10 parts water add 1-3 parts Crosslinker B with good agitation avoiding air entrapment and foam.
2. Mix well, there should be no lumps of coagulated material. It should look like milk.

NOTE: Crosslinker B Concentrate may be substituted for the Crosslinker B. Since the B is prediluted with NMP, the B concentrate should be diluted 50/50 immediately before use with Acetone or NMP to facilitate it's ability to disperse well in water. The concentrate is more stable to moisture in shipping and storage. This yields a better mix with extended pot life. Mix with half solvent and half concentrate and add to the water the same amount of B Concentrate mix that originally was to be used in Step 1.
3. Add 1 part Crosslinker A under similar agitation and mix well
4. Add 100 parts of Hydrophilic urethane 8-3C with agitation.

Product may be made at lower or higher solids/viscosity by adding or reducing the amount of solvents (Acetone and/or water). A small amount of acetone alone may be sufficient to reduce the surface tension and allow good wetting and adhesion. The more dilution, the longer the potlife and lower solids and viscosity.

5. Mix well Coat by dip, wipe, etc. (Product will not spray well due to high MW polymers in the coating. Very dilute coating has been used with ultrasonic spraying)
6. Dry for 1-8 hour at 160 F and at ambient for full properties to develop.
This formula ratio may be scaled up or down proportionally to the volume needs for R+D or manufacturing.

Patented Drug Delivery coatings

The topcoat Hydrophilic can be used as is, or modified to reduce hydrophilicity with Primer 5-149 or Non-NMP equivalent. Once the ratio of hydrophilic to primer is determined, the process is the same as above Topcoat Hydrophilic.

This formula ratio may be scaled up or down proportionally to the volume needs for R+D or manufacturing. Ratios of the Crosslinkers may be explored to obtain best binding vs elution.

Exercise caution in adding the drugs around pH, stability/solubility and proportions in the final mix.

1 To 10 parts water, add the drug amount needed for the batch size. A small amount of cosolvent -with no primary active hydrogens-for the drug may help incorporation. Adjust pH as needed to 8+ with TEA.

If appropriate add 1-3 g Crosslinker B with good agitation. Crosslinker B will react slowly to bind active hydrogens in your drug. Avoid this if you have these functions and need elution.

This formula ratio may be scaled up or down proportionally to the volume needs for R+D or manufacturing.

Block resistant coatings

1. Into a suitable container weigh 100 g of the hydrophobic dry slip of block resistant coating
2. Place the coating container under mild agitation (no foam inclusion) and add slowly dropwise 3 g of Crosslinker A
3. Mix for 5 minutes minimum. Coating can be used for up to 48hours.
4. Dilute as needed
5. Coat by dip, wipe, etc. Dry for 1 hour at 160 F and at ambient for full properties to develop.
This formula ratio may be scaled up or down proportionally to the volume needs for R+D or manufacturing.

Basic drug delivery coatings

1. To 10 parts water add the drug amount appropriate for the batch size and end use. A small amount of cosolvent with no active hydrogens may help this dissolution. Adjust pH as needed to 8+ with tri ethyl amine
2. If desired, add 1-3 parts Crosslinker B with good agitation. Crosslinker B will bind with active hydrogens over time and should be used sparingly, if at all, if these are the active functions
3. Mix well, there should be no lumps of coagulated material. It should look like milk.
4. Add 1-2 part Crosslinker A and mix well Crosslinker A is reactive with acidic functions on the drug so consider this in your formulating if binding is not needed.
5. Add 100 parts of Basic drug delivery coating with agitation.
6. Mix well, dilute as needed with water or a mix of 75% water/25% or less acetone.
7. *Coat by dip, wipe, etc. Dry for 1 hour at 160 F and at ambient for full properties to develop. Consider drug heat stability if needed.*

Product may be made at lower or higher solids/viscosity by adding or reducing the amount of solvents (Acetone and/or water). A small amount of acetone alone may be sufficient to reduce the surface tension and allow good wetting and adhesion. The more dilution, the longer the potlife and lower solids and viscosity.

This formula ratio may be scaled up or down proportionally to the volume needs for R+D or manufacturing.

Hydrophilic Patented Antimicrobial Coating

1. To 10 parts water add 1-3 parts Crosslinker B with good agitation
2. Mix well, there should be no lumps of coagulated material. It should look like milk
3. Add 1 part Crosslinker A and mix well
4. Add 100 parts of Hydrophilic Antimicrobial coating with agitation.
5. Mix well, dilute as needed with water or a mix of 75% water/25% or less acetone. The level of the antimicrobial in the coating may be reduced with addition of base hydrophilic coating 8-63.

Coat by dip, wipe, etc. Dry for 1 hour at 160 F and at ambient for full properties to develop.

This formula ratio may be scaled up or down proportionally to the volume needs for R+D or manufacturing.

Patented Hydrophilic Antithrombogenic Coating (see hydrophilic)

1. To 10 parts water add 1-3 parts Crosslinker B with good agitation

2. Mix well, there should be no lumps of coagulated material. It should look like milk
3. Add 1 part Crosslinker A and mix well
4. Add 100 parts of Hydrophilic Antithrombogenic coating with agitation.
5. Mix well, dilute as needed with water or a mix of 75% water/25% or less acetone. The level of the antithrombogenic in the coating may be reduced with addition of base hydrophilic coating 8-63.

Coat by dip, wipe, etc. Dry for 1 hour at 160 F and at ambient for full properties to develop.

This formula ratio may be scaled up or down proportionally to the volume needs for R+D or manufacturing.

General handling

The water-based coatings you receive may **be stored for up to one year** at room temperature. Freezing and long periods at high temperatures may change their characteristics.

Mix well before using. Avoid aggressive mixing that will incorporate foam unless you will allow them to sit before use, or are planning to add solvents that will allow the foam to break. Note that some coatings containing particulate (Tungsten, Silver and platelet scratch protective) may require some agitation to prevent settling from occurring during application.

To avoid shock and coagulation in crosslinked coatings, it is best to **mix the appropriate amount of crosslinker by dropwise addition to coating** or diluent which is mixing. The agitation should be sufficient to immediately dispersed the crosslinkers added. Often solvents should be added in this manner as well if they are to be used. Check stability and homogeneity of the mix before use.” Once mixed these may be used directly or diluted and used per best application methods. Coatings prepared with Crosslinker B should not be diluted with ethanol. Pot life for the mixed coatings will depend on solids and ambient conditions. Generally speaking the lower solids and lower temperatures will yield longer pot lives. Crosslinkers, especially crosslinker B which will gel, should be protected from atmospheric moisture. If needed for reuse outside the prepackaged material, they should be sealed under dry nitrogen purge.

While wet, coatings may be **diluted with water, acetone**, ethanol (primer only), or NMP to allow thinner coatings to be applied. Coating thickness can also be controlled by the removal speed when dipping (faster = thicker) and amount sprayed or deposited on the surface.

Safety and cleanup- Use reasonable practices in handling these materials. Eye protection, adequate ventilation and protective garments and gloves are suggested.

Please read appropriate MSD sheets to assure that appropriate handling precautions are taken for any and all systems particularly those resulting from dilution with solvent. Water is the first choice for clean up. Unless there is a hazardous material in the coating (once cross-linked into the dried coating, the cross-linkers are not considered hazards) these dried coatings may be disposed of as trash. Dispose of these materials according to local, state and federal laws.

Once these coatings have dried they will not re-dissolve and must be filtered to remove particulate formed during drying.

If **adhesion or surface** wetting is inadequate, there are several steps that may be taken. Either the surface tension of the substrate may be increased with corona, plasma, acid or flame etching. Alternatively the surface tension of the coating may be reduced with surfactants (less desirable as the coating then becomes a different chemical composition) or solvents may be incorporated to dilute and wet.

Coatings are **best used as thin films** (or multiple thin films) to meet performance standards without compromising profiles.

ETO is suggested for sterilization.

Note: If you are experiencing problems with the application of these products, please contact us for coaching, or consider utilizing our engineering services to prepare initial samples for your evaluation.

Coatings2Go, LLC is not responsible for the use of any of the information contained, or any product mentioned, in this document, and you must make your own determination of its suitability and completeness for your own use. You should conduct your own testing. All expressed and implied warranties, including any implied warranty of merchantability and warranty of fitness for a particular purpose and warranty arising out of the parties course of dealing are hereby disclaimed by C2G. The products are being sold "As Is". You are responsible for handling and disposal according to local, regional and federal regulations. C2G shall not be liable for any incidental or consequential damages. Nothing herein shall be construed as a license or sublicense to operate under any C2G or third party owned patent or as a warranty against infringement of any patent. By placing an order for any of these products and/or by accepting their delivery, the purchaser agrees to the above waivers.

C2G00010