CILBOND® 80ET
TECHNICAL DATA SHEET

CILBOND 80ET **is a High-Performance Solvent-Based Cover-Coat Bonding Agent, for a wide range of Rubber Compounds.**

BONDING CAPABILTIES

When used with **Cilbond 12E** (solvent-based primer) or **Cilbond 62W** (water-based primer), **Cilbond 80ET** will bond the elastomers listed below to a range of metal and plastic substrates during the vulcanisation and post-vulcanisation processes :-

- Natural Rubber (NR)
- Styrene Butadiene Rubber (SBR)
- Polychloroprene (CR)
- Polyisoprene Rubber (IR)
- Nitrile Rubber (NBR and XNBR)
- Hydrogenated NBR (HNBR sulphur or peroxide cured)
- Polybutadiene Rubber (BR)
- Ethylene Propylene Copolymer (EPM)
- Ethylene Propylene Diene Terpolymer (EPDM sulphur or peroxide cured and silicone modified)
- Butyl Rubber (IIR)
- Halogenated Butyl Rubber (CIIR and BIIR)
- Epichlorohydrin Rubber (ECO)
- Chlorosulphonated Polyethylene (CSM and ACSM)
- Ethylene Ethyl Acrylate (Vamac®)
- Ethylene Vinyl Acetate (EVA / EVM)
- Acrylic Rubber (ACM)
- Chlorinated Polyethylene (CPE)
- Millable Polyurethane (Sulphur or peroxide cured)

Cilbond 80ET also gives excellent adhesion to RFL-treated fabrics and finds uses in high-performance timing belts, hoses and carriage belts, especially where severe environments are present such as high temperatures and fluids.

TYPICAL PHYSICAL PROPERTIES OF CILBOND 80ET

Appearance	*Black Liquid*
Viscosity - No 3 Zahn Cup @ 26°C	*45 seconds*
Viscosity - Brookfield LV2/12 @ 26ºC	*500 cps*
Non-Volatile Solids / Concentration	*22% by weight*
Specific Gravity, 26°C	*0.96*
Flash Point (Abel Pensky)	*12ºC*
Bonding Temperature Range	*100 - 230°C*
In-Service Temperature Resistance	*-50ºC - +180°C*
In-Service Environmental Resistance	*Salt-spray, water immersion, boiling water, steam up to 130ºC, hot oils, fuels, glycols and hydraulic fuels up to 180ºC*
Typical Coverage at 15 microns (dry)	*16 m² / Litre*
Shelf Life	*12 Months from Date of Manufacture*

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bsi. ISO 9001 Quality Management
Certificate Number FM 647341

METAL SURFACE PREPARATION

For optimum bonding the substrate surface must be contaminant free. With ferrous metals, grit-blasting with clean, sharp chilled iron grit (200–300µ) and for non-ferrous metals with aluminium oxide grit, to a grey-white finish should yield excellent bonding surfaces.

For detailed recommendations on substrate preparation refer to **Information Sheet A1**.

APPLYING CILBOND 80ET

AGITATION

Cilbond 80ET must be thoroughly stirred before use, preferably with a propeller type agitator.

BRUSHING

Cilbond 80ET can be brush applied without the need for dilution. If required (especially if covering large areas), dilute with up to 20% Xylene or Toluene.

SPRAYING

It is normal to dilute **Cilbond 80ET** to 16-24 seconds on a Zahn 2 cup or 13-20 seconds on a DIN 4 or Ford 4 cup using Toluene or Xylene. Xylene is the preferred diluent, though Toluene is preferred at low ambient temperatures.
A nozzle size of 1.0 - 1.5mm is recommended with an air pressure of 1.5 bar (excessive pressure can lead to cob-webbing).

Generally the use of 25 - 40 parts of diluent to 100 parts of **Cilbond 80ET**, by volume is a typical dilution. In hot and/or humid conditions fibrillation (cob-webbing) may occur and under such conditions dilute to closer to 13 seconds on a DIN 4 cup using Xylene.

DIPPING

For Dipping processes, **Cilbond 80ET** should be diluted to 18-26 seconds on a Zahn 2 cup or 16 - 22 seconds on a DIN 4 or Ford 4 cup. Toluene is the preferred diluent for dipping but it is possible to use Xylene, Methylene Chloride, Butyl Acetate and many other solvents. **Do not use ketone based solvents**.

ROLLER COATING / KNIFE COATING

The viscosity of **Cilbond 80ET** is suitable for most roller and knife coating applications, even for fabrics.

DILUTION

CIL recommends **Xylene** or **Toluene** to dilute Cilbond 80ET.

COATING THICKNESS

Cilbond 80ET should be coated at a dry film thickness of **12.5 - 25 microns.**

DRYING

Allow 20 to 40 minutes drying time at room temperature. If necessary, forced drying of parts at up to 70°C will reduce the drying time, although care should be taken to avoid blistering. Pre-warming the metals to ~60ºC will also reduce drying times.

PRE-BAKING

Limited pre-baking is possible with **Cilbond 80ET**, though high-temperature pre-bakes should be avoided. The pre-bake of a bonding agent is always compound dependent, so each compound should be tested as required.
In general, the maximum pre-bake for **Cilbond 80ET** is 20-30 minutes at 155ºC.

STORAGE

It is recommended that components are bonded within 7 days of application of the bonding agent. However under validated, controlled conditions (designed to avoid contamination of parts), they may be stored for much longer periods, such as up to 2 months.

IN-SERVICE BENEFITS

Components produced with **Cilbond 80ET** exhibit excellent properties in service.

For maximum resistance to heat, fluid (including water, oils, ester oils, brake fluids, glycol mixtures) and salt-spray, **Cilbond 12E** is the recommended primer. Other in-service benefits include :

- Components produced using **Cilbond 12E / 80ET** survive long term in-service temperatures over the range from -80ºC to +200ºC and exhibit excellent dynamic performance tests at up to 180°C.
- When components made with **Cilbond 12E / 80ET** are heated short term/intermittently, the maximum heat resistance is compound dependent, but is generally up to 220ºC or even higher.
- **Cilbond 12E / 80ET** shows no failure when subjected to a boiling water peel test under a 2kg load for 100 hours or the severe boiling water test conducted under a 12 kg load for 24 hours.
- **Cilbond 12E / 80ET** passes the 504 hour Volvo hot water test at 70°C.
- **Cilbond 12E / 80ET** passes long term glycol tests at 160°C for ≥500 hrs.
- **Cilbond 12E / 80ET** shows no failure when subjected to total immersion in a 50/50 wt/wt mix of water/glycol at 120°C for 360 hours.
- **Cilbond 12E / 80ET** exhibits excellent resistance to the DIN EN ISO 9227:2006-10 salt spray test with minimal edge failure after 500 hours in 5% salt at 35ºC, with 30% extension on the elastomer.

The **Cilbond 62W / 80ET** system also exhibits excellent salt-spray, hot fuel and oil resistance properties. This is an ideal system which both meets current legislation covering lead and other heavy metals and also the need to reduce VOC emissions.

The **Cilbond 10E / 80ET** system is recommended for Rubber Roller manufacturers, offering a versatile two-coat system for many different compounds. The **Cilbond 10E** can then also be used as a one-component system for rollers from NBR and PVC / NBR, offering material and time savings.

WHERE TO USE CILBOND 80ET

Due to its superior performance and environmental resistance, **Cilbond 80ET** is used extensively in demanding industries such as Automotive and Off-shore, producing components such as :

- Hydromounts and TVD's
- Pump Linings and Tank Linings
- Hoses
- Rollers
- Other rubber to metal bonded components.

FURTHER INFORMATION

Cilbond 80ET is supplied in 10 litre, 25 litre and 200 litre containers. 250ml trial samples are also available.

This Cilbond grade has been formulated and manufactured using multiple sources of approved raw materials.

For more information on **Cilbond 80ET** or for details of our other products please visit www.kommerlinguk.com or e-mail cilbond@hbfuller.com

CILBOND® 12E
TECHNICAL DATA SHEET

CILBOND 12E **is a High-Performance Solvent-Based Primer for use under Cilbond Cover-Coat systems**

BENEFITS OF CILBOND 12E

BONDING CAPABILITIES:

Cilbond 12E primer gives excellent adhesion to metals, including mild steel, cast iron, phosphated steel, chromated steel, stainless steel, aluminium, brass, nickel, zinc, etc. and polar engineering thermoplastics, such as PPO, PPS, PES, PEEK, PET, PBT, nylons and thermoset plastics, such as UF, PF, RF, MF and GRP/FRP and epoxy resins.

Cilbond 12E is used under bonding agents such as **Cilbond 80ET** to bond a vast range of elastomers to metals and plastics during the moulding process – See also the **Cilbond 80ET** Technical Data Sheet.

Cilbond 12E may also be used as a One-Component vulcanising and post-vulcanising bonding agent for NR, SBR, CR, CSM and Vamac® G compounds.

IN-SERVICE BENEFITS:

As a Primer, **Cilbond 12E** has excellent resistance to extreme environments including fluids (for example, glycols and brake fluids) and high temperatures of up to 200ºC and low temperatures down to -50ºC.

The use of **Cilbond 12E** as a Primer under **Cilbond 24** gives bonds with the ultimate in environmental resistance and maintains the exceptional heat and fluid resistance (particularly glycol) associated with **Cilbond 24**.

When **Cilbond 12E** is used as a Primer under **Cilbond 80ET**, bonded components benefit from superior salt-spray and hot-fluid resistance.

Cilbond 12E may show improved heat resistance when used as a primer under **Cilbond 65W** for some grades of VMQ and FKM.

Cilbond 12E should be considered as a Primer under **Cilbond 10E** for superior heat resistance when bonding NBR and HNBR.

TYPICAL PHYSICAL PROPERTIES OF CILBOND 12E

Appearance	*Grey Liquid*
Viscosity - No 3 Zahn Cup @ 26°C	*17 seconds*
Viscosity - DIN 4Cup @ 26°C	*30 seconds*
Non-Volatile Solids	*24% by weight*
Specific Gravity @ 26°C	*0.98*
Flash Point (Abel Pensky)	*2°C*
Bonding Temperature Range	*130 - 235°C*
In-ServiceTemperature Resistance	*-50ºC - +200°C*
In-Service Environmental Resistance	*Salt-spray, water immersion, boiling water, steam up to 130ºC, hot oils, fuels, glycols and hydraulic fuels up to 180ºC*
Typical Coverage at 15 microns (dry)	*20 m² / Litre*
Shelf Life	*12 Months from Date of Manufacture*

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METAL SURFACE PREPARATION

For optimum bonding with **Cilbond 12E** all metal surfaces MUST be contaminant free.

Surfaces should preferably grit-blasted with 200–400µ chilled iron or alumina grit and ideally degreased after the grit-blasting process. Alternatively, proprietary phosphated surfaces may be used.

Cilbond 12E is particularly effective on zinc coatings and passivated zinc coatings.

For detailed recommendations on substrate preparation refer to **Information Sheet A1**.

APPLYING CILBOND 12E

AGITATION

Cilbond 12E contains materials which settle and so needs to be thoroughly stirred before use with an effective agitator.

BRUSHING

Application by brushing is normally undertaken without further dilution, but for coating large areas, dilute with ca. 10% of any of the recommended diluents (see below).

DIPPING

For Dip-coating we recommend diluting **Cilbond 12E** with fast drying solvents based on MIBK or MEK to a viscosity of 24-28 sec on a No 2 Zahn Cup or 18-24 sec on a DIN 4 cup or Ford 4 cup. This should give an even coating of components.
Typically, the addition of 5-10% of solvent should achieve the required viscosity.

SPRAYING

For Spray-coating we recommend diluting **Cilbond 12E** with any of the recommended diluents, though xylene and glycol ether esters are usually preferred.
A viscosity of 16-24 seconds on a No 2 Zahn Cup or 13-20 sec on Din 4 Cup, or Ford 4 Cup is recommended. As a guide, 15 - 25% of solvent is generally required to achieve an acceptable finish.
Cilbond 12E is normally sprayed through a 1.0 - 1.5 mm nozzle using a 0.5 - 1.5 bar fluid pressure and an air pressure of 1.5 bar, ideally using an HVLP spray system. Excessive air pressure can cause fibrillation (cob-webbing), even with diluted product.

DILUTION

Irrespective of the diluent used, it is vital that the bonding agent is stirred whilst solvent is added to ensure a homogeneous mix, so that a uniform film thickness will result on application. For continuous dipping or spraying it is recommended that constant stirring is undertaken, especially if the product has been diluted.
Recommended diluents include: *Xylene, Toluene, Ketones (such as MIBK or MEK), Methyl Proxitol Acetate or other Glycol Ether Esters.*

COATING THICKNESS

When used as a Primer use a dry coating thickness of at least **10 microns**.
When used as a One-coat system use a dry coating thickness of at least **15-20 microns**.

UNIFORM COATINGS

The key to successful bonding with **Cilbond 12E** is uniform coatings at the optimum film thickness. At the viscosities suggested above, a satisfactory film thickness should result. However, laboratory tests are always advised to assess the practical film thickness for production conditions.

DRYING

After applying **Cilbond 12E**, components should be left for 40-60 minutes at 25°C to dry. Pre-warming or drying the coated parts in an oven at 60°C will speed up drying.

STORAGE

Coated parts may be stored for long periods of time (several weeks) provided they are protected from dust, oil mists, mould release over-spray and moisture.

WHERE TO USE CILBOND 12E

Cilbond 12E is used in the manufacture of:

- High-performance Engine and Suspension Mounts (including Hydromounts)
- TVD's and other Couplings
- Bushes
- Hoses
- Belts
- Rollers
- Pump Linings
- Tank Linings
- Door and Window Seals
- Seals and Gaskets
- General rubber goods demanding a Heat and Dynamic Fatigue Resistant Bond

PACKAGING

Cilbond 12E is supplied in 10L, 25L and 200L containers. 250ml trial samples are also available upon request.

FURTHER INFORMATION

This Cilbond grade has been formulated and manufactured using multiple sources of approved raw materials.

For more information on **Cilbond 12E,** or for details of our other products please visit www.kommerlinguk.com or e-mail cilbond@hbfuller.com

CILBOND® 49SF
TECHNICAL DATA SHEET

CILBOND 49SF **is a One-Component Solvent-Based Bonding Agent for Castable Polyurethane Elastomers and Thermoplastic Polyurethane Elastomers (PU and TPU).**

BENEFITS OF CILBOND 49SF

BONDING CAPABILITIES:

Cilbond 49SF is a one coat bonding system for PU and TPU to all metals during the curing process.

Cilbond 49SF will also bond PU's and TPU's to epoxies and fibreglass reinforced plastics, polyamides and other engineering thermoplastics, such as Hytrel®, PBT, PET, PPS, PPO, PEEK, PES, etc.

IN-SERVICE BENEFITS:

Cilbond 49SF exhibits good resistance to static and dynamic fatigue and bonds survive in fluids such as fuels, oils including all types of lubricants, glycols, inks, lacquers, paints and many cleaning solvents, though for a maximum resistance to aggressive solvents, the use of **Cilbond 49SF** and **Cilcure B** is recommended – see below. *(Cilcure B is a liquid form of diphenylmethane diisocyanate with a selected functionality and is used to improve the environmental resistance of bonded parts).*

Cilbond 49SF has good hot and cold water resistance, as illustrated by tests where polyether/MbOCA or polyester/Ethacure cured compounds bonded to mild steel showed 100% rubber tear when peel tested after total immersion for 28 days in water at 80°C.
Bonds made with **Cilbond 49SF** are impact resistant and not brittle down to at least -40°C.

When **Cilbond 49SF** is used as a 2 part bonding agent with **Cilcure B**, it has specific benefits and uses, especially for lower temperature bonding and for exceptional resistance to aqueous conditions, such as boiling water and for long-term exposure to predominantly wet conditions. This system is also suited for higher heat resistance to 180°C and **Cilbond 49SF + Cilcure B** is probably more versatile when used as a primer under **Cilbond 49SF.**

PROCESSING BENEFITS:

Cilbond 49SF exhibits the capability to withstand long pre-bake cycles and with good control of metal preparation and bonding agent application and using extended pre-bake conditions (see below) the bonds can survive up to ca. 130°C in static and dynamic conditions.

TYPICAL PHYSICAL PROPERTIES OF CILBOND 49SF

Appearance	*Red Liquid*
Viscosity - No 3 Zahn Cup @ 26°C	*30 seconds*
Viscosity - Din 4 @ 26°C	*50 seconds*
Non-Volatile Solids	*24% by weight*
Specific Gravity, 26°C	*0.92*
Flash Point (Abel Pensky)	*-2°C*
Moulding Temperature Range	*70 - 205°C*
Optimum Dry Coating Thickness	*≥20 micron for maximum adhesion.* *≥25 micron for maximum corrosion resistance.*
Typical Coverage at 20µ dry coating thickness	*15m² / Litre*
Shelf Life	*24 Months from Date of Manufacture*

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WHERE TO USE CILBOND 49SF

Cilbond 49SF will bond castable and thermoplastic polyurethanes to metals and plastics at temperatures of 70°C or above, though best results are achieved at ≥85°C, particularly if the component is going to be subjected to a severe environment. It is especially suitable for use in dynamic conditions where hydrolytic stability is important.

When bonding MDI Quasi Prepolymer Systems and where the cast PU bond line may not reach much above 70°C, it is recommended that after applying the **Cilbond 49SF**, the coated metal parts are dried thoroughly and then pre-baked for an absolute minimum of 1 hr at 85°C - 100°C to ensure a good cement to metal bond.

For the bonding of PU to polyamides (Nylon), using **Cilbond 49SF**, refer to Cilbond Information Sheet B10.

END-USE APPLICATIONS OF CILBOND 49SF

End applications for products using Cilbond 49SF include :

- Rollers for the paper and textile industries
- Solid tyres
- Carriage wheels
- Dunnage
- Pipe linings and pipe coatings
- Reinforced screen decks
- Any product with an engineering bond between a PU elastomer and a metal or plastic substrate.

METAL SURFACE PREPARATION

Cilbond 49SF must be applied to carefully prepared surfaces for it to be effective. Surfaces should ideally be grit blasted with clean, filtered sharp alumina or steel grit (200-400µ), and solvent degreased. For cast PU's it is vital that when dealing with hard surfaces, such as case hardened steel, stainless steel and some grades of high carbon cast iron, that the grit is capable of giving a sharp surface.

Alternatively, surfaces may be phosphated using well-established proprietary procedures.

Good metal preparation is vital if the environment is continually wet such as sub sea situations and/or involves severe dynamic fatigue.

For detailed recommendations on substrate preparation refer to **Information Sheet A1**.

APPLYING CILBOND 49SF

BRUSHING

Application by brushing is normally undertaken without further dilution, but for coating large areas, dilution with MEK or the diluent blend shown below, improves flow and speed of application.

DIPPING

Dilute to a viscosity of 16-24 seconds using a Zahn No.2 cup at 25°C or 13-20 seconds using a Din 4 or Ford 4 Cup at 25°C using the diluent blend given below, or use MEK if a fast drying coating is required.

SPRAYING

We recommend an HVLP gun using 1.5 Bar air-pressure and a nozzle size of 1 - 1.5mm.

Dilute to 16-24 seconds on a Zahn No 2 cup or 13-20 seconds on a DIN 4 or Ford 4 cup at 25°C, using the diluent shown below. If fibrillation (cob webbing) occurs, use diluent containing more higher boiling solvent, such as MPA. **Cilbond Diluent 4000** is a suitable diluent for **Cilbond 49SF**.

Typically, dilute ca. 100 parts of **CILBOND 49SF** with 40-70 parts **Cilbond Diluent 4000**, by weight or volume, depending on the gun type, the nozzle size and pressures used.
If MEK is used as the main diluent, beware of chilling of the sprayed metal parts (due to rapid MEK evaporation) and subsequent condensation of water, which may lead to a micro porous film.

ROLLER COATING

Dilute to 35-45 seconds on a DIN 4 or Ford 4 cup at 25°C for most roller application processes. Dilution with a high boiling solvent like MPA may be necessary to achieve the best finish and to reduce the skinning of the bonding agent in the applicator.

DRYING

Dry each coat for at least 45 minutes and the final coat for at least 1 hour at room temperature (25°C). At temperatures below 20°C extend the drying time accordingly.
Forced drying may be used provided care is taken to prevent blistering of the films so we recommend temperatures below 60°C in the early stages of drying. Pre-warming the parts *before* coating will also aid drying (60ºC is recommended).

PRE-BAKING

Pre-baking is required to develop good bonding to the substrate, especially to metals. The minimum pre-bake is 1 hour at 100°C and a **typical recommended pre bake is 2 hours at 100-110°C**, though it is well established that longer pre-bakes (4-8 hrs at 100°C) do maximise bond strengths, percentage bond retention and especially the heat resistance of the bond and environmental resistance. The **Cilbond 49SF** coating should not be pre-baked for more than 48 hours at temperatures of ca. 100°C, 24 hours at 110°C or 16 hours at 130°C.

Pre-bakes at >130°C should be fully validated and very carefully controlled and especially with porous and hardened metals (particularly cast iron and cast aluminium) as de-gassing may affect the cement to metal bond.
As an alternative to extended pre-bakes, consider using **Cilbond 49SF+ Cilcure B** as a primer under **Cilbond 49SF – See separate section on page 5**.
Pre-bakes prior to TPU injection moulding are less sensitive to this problem, partly due to the high injection pressures and temperatures involved, which will re-bond the **Cilbond 49SF** to the metal.

COATING THICKNESS

For general-purpose applications use a dry coating thickness of **15 microns**.
For dynamic fatigue applications use a dry coating thickness of **≥20 microns**.
For severe environments use a dry coating thickness of **≥25 microns**.
Under these conditions it is possible to achieve bonds, which exhibit no sign of edge failure after 480 hours salt spray tests, especially with **Cilbond 49SF** + **Cilcure B**.

STORAGE

Coated parts may be stored for long periods of time (several weeks) provided they are protected from dust and moisture.

DILUENTS

The best diluent is the following blend, where parts are by weight:

86 parts	Methyl ethyl ketone (MEK)
7 parts	Methyl proxitol acetate (MPA)
7 parts	Ektapro (EEP), ethoxy ethyl propionate.

This solvent blend is available as **Cilbond Diluent 4000**. For many applications it is possible to dilute with low moisture content MEK, provided that the **Cilbond 49SF** is agitated whilst adding the MEK. If cob webbing occurs on spraying, additions of **Cilbond Diluent 4000,** or mixtures of MEK and high boiling ethers and/or esters, such as MPA will reduce it.

ADDITIONAL INFORMATION

With certain polyurethane systems, especially those plasticised by polar plasticisers, there is the possibility of the plasticiser in the polyurethane solvating the **Cilbond 49SF** prior to gelation of the PU. This may exhibit itself as an observation of staining of the PU by the red dye in the **Cilbond 49SF** or at worst some failure at the PU to cement bond.

For such systems, we strongly recommend the maximum pre-bake prior to casting. If this fails to give good bonding, use **Cilbond 49SF + Cilcure B**

WHEN TO USE CILBOND 49SF + CILCURE B

If bond line temperatures are likely to be below 70ºC, or if a pre-bake of the coated substrates is not feasible, or if the in-service environment is extreme, then consider the use of **Cilbond 48** (see separate Technical Data Sheet) or **Cilbond 49SF** + **Cilcure B**.

Applications for **Cilbond 49SF+ Cilcure B** include low-temperature casting or spraying of PU's, the rotational casting of small and medium sized rollers and applications involving dynamic fatigue at temperatures of ≥140°C.

Cilbond 49SF+ Cilcure B is strongly recommended for applications that involve continuous use in aqueous environments. The resistance of PU to metal bonds made with **Cilbond 49SF+ Cilcure B** at a ratio of 100:10 and subjected to water at <50°C is predicted to be ≥ 20 years and the use of Cilbond 49SF as a cover coat is covered below.

Cilbond 49SF+ Cilcure B yields bonds capable of withstanding boiling water for up to 105°C for ≥200 hours.

Cilbond 49SF+ Cilcure B gives improved adhesion to many substrates; especially epoxy resins, such as FBE, GRP/FRP, glass, ceramics, etc.

Cilbond 49SF+ Cilcure B is recommended for highly plasticised PU systems and for systems where the curing agent could potentially solvate the bonding agent layer, such as trans CHDI/CHDM PU systems.

Cilbond 49SF+ Cilcure B or **Cilbond 49SF+ Cilcure B** as a primer under **Cilbond 49SF** produce bonds capable of withstanding temperature of up to 180°C

HOW TO USE CILBOND 49SF WITH CILCURE B

The standard mix ratio of **Cilbond 49SF** + **Cilcure B** is **100:10** by weight, but for some applications, it may be possible to use a mix ratio down to 100:5, especially for very fast cure 2 component PU's.

Cilbond 49SF (100 parts by weight) should be mixed with **Cilcure B** (10 parts by weight), preferably by adding the **Cilcure B** to the **Cilbond 49SF**, whilst stirring. Stir well until homogeneous. Allow to stand for a few minutes, stir again and it is then ready for use.

Ideally make up sufficient mix to last ca. 8 hours, which is the recommended pot life. Dispose of any material after this, especially if it has a gelatinous nature.

Apply this mixture following the same procedure as for **Cilbond 49SF**, except that a pre-bake is now not a definite requirement, though the dried parts must be brought up to the moulding temperature or to ≥50°C prior to casting the PU. If parts are dried at ≥70°C, then best bonding is achieved, even if the metals are at ≥50°C when the PU is cast.

A high temperature pre-bake is possible, but it must be stressed that long pre-bakes must be avoided, though the system will tolerate up to ca. 4 hours pre-bake at 100-110°C without any adverse effect on bonding.

Longer and higher temperature pre-bakes may be possible, depending on PU type, i.e. Vulkollan®. However this must be fully validated to ascertain reproducible results.

END USE APPLICATIONS OF CILBOND 49SF + CILCURE B

Applications benefiting from **Cilbond 49SF** + **Cilcure B** include:

- Low temperature applied spray coatings and any difficult to bond very fast curing PU.
- Low temperature casting of PU's, especially rotational casting of small and medium sized rollers and pipe, where some limited heat input is possible
- Applications required to withstand boiling water, hot water, where bonded items are continually in aqueous environments or where the bonds must survive up to 180°C.
- Applications where aggressive solvents are employed.

CILBOND 49SF + CILCURE B AS A PRIMER UNDER CILBOND 49SF

This combination is used for those applications where the benefits of **Cilbond 49SF** + **Cilcure B** as a primer can be combined with the long open time and pre-bake resistance of **Cilbond 49SF**, with the added advantage that this system gives bonds with the same heat resistance as **Cilbond 49SF**+ **Cilcure B** on its own.

A primer coat of **Cilbond 49SF** + **Cilcure B** is **100:10** by weight is applied to well prepared metals to give a minimum of 15µ dry coating thickness and dried for 1-2 hrs at ambient temperature or with gentle applied heat. A second coat of **Cilbond 49SF** is applied to give a total coating thickness of ≥25µ and dried thoroughly.

This system is now treated as though it was a dried coating of **Cilbond 49SF** to produce the bonded component and bond performance is equal to using **Cilbond 49SF** + **Cilcure B** at **100:10** by weight.

PACKAGING

Cilbond 49SF is supplied in 10 litre, 25 litre and 200 litre containers. 250ml trial samples are also available upon request.

FURTHER INFORMATION

This Cilbond grade has been formulated and manufactured using multiple sources of approved raw materials

For more information on **Cilbond 49SF** or for details of our other products please visit www.kommerlinguk.com or e-mail cilbond@hbfuller.com