CILBOND® R-7327
TECHNICAL DATA SHEET

CILBOND R-7327 is a high-performance one-component, rubber to substrate bonding agent

BENEFITS OF CILBOND R-7327

BONDING CAPABILITIES :

Cilbond R-7327 is a one-component bonding system developed to give high-performance bonding to metal and plastic substrates with the following elastomers:-

- Natural Rubber (NR)
- Natural Rubber SEV (NR)
- Natural Rubber EV (NR)
- WDK NR60H (NR)
- Styrene Butadiene Rubber (SBR)
- Ethylene/Ethyl Acrylate, Vamac® (AEM)
- Ethylene Propylene Diene Monomer (EPDM)

IN-SERVICE BENEFITS :

- Exceptional salt spray resistance as either a one-component system, 30% stressed components exceed 900-1000 hours salt-spray without signs of corrosion and ≤1mm edge failure with grit blasted mild steel parts.
- Exceptional dynamic and static fatigue resistance.
- Superior chemical resistance to: Petroleum spirit fuels, unleaded petrol, kerosene, fuel oils, mineral oils and synthetic ester turbo oil at high temperature, ethylene glycol and propylene glycol at high temperature, acids and alkali, hot water, including boiling water.
- Resistance to both mild acid and mild alkali media.
- Superior chemical resistance to petroleum spirit, unleaded petrol, kerosene, fuel oils, mineral oils and synthetic ester turbo oil and ethylene glycol/propylene glycol at high temperature, hot/boiling water, steam.

TYPICAL PHYSICAL PROPERTIES OF CILBOND R-7327 (Provisional)

Appearance	*Black Liquid*
Viscosity - Zahn 3 Cup @ 20°C	*20 seconds*
Non-Volatile Solids	*25% by weight*
Specific Gravity @ 26°C	*1.0*
Bonding Temperature Range	*120 - 230°C*
Recommended Dry Film Thickness	*min. 15 microns*
Typical Coverage @ 15 microns	*15 m² / Litre*
Shelf Life	*12 Months from Date of Manufacture*

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METAL SURFACE PREPARATION

For optimum bonding with **Cilbond R-7327**, all metal surfaces MUST be contaminant free. Grit-blasting (200-400µ grit), sandblasting or blasting with aluminium oxide to grey-white finish should yield excellent bonding surfaces with ferrous metals. All parts to be bonded should ideally be degreased to maximise environmental resistance.

Other methods of metal preparation, which will still give excellent bonds, include phosphate and chromate conversion coating, or acid and alkaline pre-treatments.

NOTE: - careful attention to all phases of metal preparation is the single most important factor in obtaining high quality bonds. For detailed recommendations on substrate preparation refer to **Information Sheet A1**.

APPLYING CILBOND R-7327

AGITATION

Stir thoroughly before use, preferably with a high-speed propeller type stirrer.

BRUSHING

Application by brushing is normally undertaken without further dilution, but for coating large areas dilute with 10-15% Toluene, Xylene or MEK.

Two thin coats are preferred to one thick coat.

DIPPING

For dip application of **Cilbond R-7327**, dilution is necessary to reduce the viscosity to a level where correct film formation may be achieved. Dilute with Xylene to the following viscosities :

Viscosity Guide @ 26ºC :-	DIN 4 Cup	: 18 - 24 sec
	Zahn Cup No 2	: 24 - 28 sec

At these viscosities **Cilbond R-7327** may require as much as 25-40 part of diluent to 100 parts of **Cilbond R-7327**. If faster drying and thicker coats are required, replace all or part of the diluent with MEK or MIBK. After dilution we recommend stirring on a continuous basis.

SPRAYING

For spray applications, Xylene is the preferred diluent, especially for reducing/eliminating cob webbing/fibre formation. Dilute to the following viscosities :

Viscosity Guide @ 26ºC :-	DIN 4 Cup	: 13 - 20 sec
	Zahn Cup No 2	: 16 - 24 sec

This may require as much as 30-50 part of diluent to 100 parts of **Cilbond R-7327**.

MEK/Xylene and MIBK/Xylene blends are particularly effective diluents for spraying, especially where automated rapid processing is employed.

Typically, use 1.5 - 2.0 bar air pressure with a fluid pressure of 0.5 - 1.0 bar, a nozzle size of 1.0 – 1.5mm when using an HVLP system, which is the preferred method of spray application. Note that excessive air pressure can cause fibrillation (cob-webbing).

APPLYING CILBOND R-7327 (Continued)

ROLLER COATING

The viscosity of **Cilbond R-7327** is close to that required for many roller coating applications, so little or no diluent is normally required. Fast drying solvents, such as MEK, are often the preferred for dilution.

DILUTION

Toluene and especially Xylene are the main diluents for **Cilbond R-7327**. Other diluents, which may be useful include MEK, and MIBK, MEK and MIBK are best used in solvent blends with Toluene or Xylene.
Regardless of which diluent is chosen, it is imperative that the cement be stirred vigorously whilst diluent is being added, otherwise gelation may result.

DRYING

At room temperature drying takes 30 - 45 minutes.
If the temperature is abnormally low, longer times will be required. Forced drying may be employed if desired to speed the operation. Large volumes of warm air will reduce the drying time to <<2 minutes and temperatures up to 50°C may be employed as necessary. Forced drying is a recommended process for **Cilbond R-7327**.

PRE-BAKING

Cilbond R-7327 exhibits excellent pre-bake resistance and though this is partly compound dependent, **Cilbond R-7327** can resist pre-bakes of 15-30 minutes at 160°C.

FILM THICKNESS

Irrespective of the method of application for the bonding agent, it is vital to lay down as uniform a film as possible to obtain optimum and uniform bond strength results.

We recommend the following :

General Purpose Bonding	: 15 – 25 microns (dry coating thickness)
Superior Environmental Resistance	: 25 – 35 microns (dry coating thickness)

In many cases, as for most so called one-coat systems, it is usually double applied.

MOULDING

Cilbond R-7327 resists wiping, and mould fouling and may be used with all moulding methods including compression, transfer, injection, and extrusion moulding. Temperatures required to affect a bond may vary from 120-230°C. Fully dried **Cilbond R-7327** show virtually no mould fouling or wiping/melt flow.

STORAGE

Coated parts may be stored for several weeks if protected from contamination by dust, oil mists, grease, and water.

ADDITIONAL INFORMATION

Cilbond R-7327 is suitable for high-performance bonding of Vamac® G, where in service temperatures may be very high.

Cilbond R-7327 is particularly effective for high temperature glycol resistant NR bonding, or for EPDM, in the manufacture of speciality hydro mounts and hydro bushes. **Cilbond R-7327** bonds will survive 1000hrs testing in glycol mixtures at 160°C with no loss of adhesion.

Cilbond R-7327 is highly effective in post vulcanisation bonding NR, SBR, and other elastomers, such as Vamac® G, even some EPDM's.

Cilbond R-7327 is suitable for bonding compounds based on sulphur or peroxide.

PACKAGING

Cilbond R-7327 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 R-7327** or for details of our other products please visit www.hbfuller.com/cilbond or e-mail cilbond@hbfuller.com

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