CILBOND® R-7290W

Water-Based Development Product

PROVISIONAL TECHNICAL DATA SHEET

CILBOND R-7290W **is a One-Component Water-Based Rubber to Metal Bonding Agent**

BENEFITS OF CILBOND R-7290W

BONDING CAPABILITIES:

Cilbond R-7290W is a one-component bonding system for adhering the following elastomers to metals and polar engineering plastics :-

- Natural Rubber (NR)
- Styrene Butadiene Rubber (SBR)
- Butyl Rubber (IIR)
- Ethylene Propylene Diene Terpolymer (EPDM)
- Nitrile Rubber (NBR and XNBR)
- Hydrogenated NBR (HNBR Sulphur or Peroxide cured)

IN-SERVICE BENEFITS:

Bonds made with **Cilbond R-7290W** are expected to survive the following environments:

- Boiling water
- Hot glycol tests at 160ºC for up to 250 hours without blisters or loss of adhesion
- Salt-spray tests on parts show ≤4mm edge fail after 250 hours in 5% salt solution at 35ºC and under a 30% extension
- Superior resistance to oils, fuels and transmission fluids at up to 160ºC
- Dry heat resistance to 170ºC for extended periods

PROCESSING BENEFITS:

- **Cilbond R-7290W** is easy to use and is suited to processes involving spray application.
- Coated parts may be stored for several weeks prior to moulding the elastomer, provided they are protected from contamination.

TYPICAL PHYSICAL PROPERTIES OF CILBOND R-7290W

Appearance	*Grey / Green Liquid*
Viscosity, Zahn 3 Cup @ 26°C	*25 seconds*
Non-Volatile Solids (2 hours at 105ºC)	*21% by weight*
Specific Gravity @ 26°C	*1.07*
Bonding Temperature Range	*130 - 180°C*
Minimum Film Forming Temperature	*20°C*
Open Time of Protected Dried Coatings	*3 weeks*
Typical Coverage	*18 m² / Litre*
Provisional Shelf Life	*6 months from date of manufacture*

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SUBSTRATE PREPARATION

For optimum bonding the substrate surface must be contaminant free. For elastomer bonding this means a solvent degrease, surface abrasion, followed by further degreasing.

With ferrous metals, grit blasting with chilled iron grit (200–300µ) and for non-ferrous metals with aluminium oxide grit, to a grey-white finish should yield excellent bonding surfaces. Degreasing prior to and after grit blasting is recommended. Proprietary phosphate conversion coatings are also recommended.

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

APPLYING CILBOND R-7290W

AGITATION

Stir **Cilbond R-7290W** gently, yet thoroughly before use. Avoid creating froth or foam. After mixing stir occasionally during use, as it is important that the system remains homogenous. For large-scale processes, continuous stirring is recommended.

BRUSHING

Cilbond R-7290W may be applied by brushing as delivered, but can be diluted with 5-15% deionised water to improve flow and wetting.
Two thin coats are preferred to one thick coat. Avoid over-brushing and ensure brushes are fully wetted with the bonding agent.

DIPPING

To dip apply, dilute with deionised water to a minimum viscosity of 18 seconds using a Zahn No.2 cup or 16 seconds using a DIN 4 / Ford 4 Cup.
Ensure the bonding agent forms a uniform film, which dries without blisters or trapped air.

SPRAYING

To spray apply, dilute with deionised water to a minimum viscosity of 18 seconds using a Zahn No.2 cup or 16 seconds using a DIN 4 / Ford 4 Cup.

A nozzle size of ca. 1.0 – 1.5 mm is recommended for most applications.

Use a fluid pressure of 0.5 - 1.0 bar and an air pressure of typically 1.5 – 3.0 bar, dependent on the fineness of the spray required. HVLP spray systems are recommended.
Ensure the bonding agent forms a uniform film, which dries without blisters or trapped air.

DILUTION

Cilbond R-7290W should be diluted with de-ionised or distilled water.

DRYING

To improve drying and film formation, we recommend that metals are pre-warmed to 40-50ºC before coating. If drying at room temperature, allow 30 - 60 minutes between coats, or force-dry at 40 - 60ºC to fully coalesce the film. It is important that the films are dried thoroughly and without porosity. It is recommended to avoid environments with a humidity of >>70% RH.

FILM THICKNESS

For best bonding and for maximum environmental resistance, aim for a dry coating thickness of 20 – 30 microns.

PRE-BAKING

Once dried, pre-bakes of up to 10 minutes at 155ºC are possible, but longer pre-bakes should be avoided.

STORAGE

Fully dried coated parts may be stored for several weeks, provided they are protected from dust, oil vapours and water.

WHERE TO USE CILBOND R-7290W

General-purpose rubber to metal bonded parts, where good environmental resistance is required.

Cilbond R-7290W is therefore recommended for :

- Engine and suspension mounts, including hydromounts
- TVDs, bushings and other couplings
- Stabiliser Bars
- Seals and gaskets
- Rollers
- Pump linings, including progressing cavity pump stators
- Tank linings
- Other rubber to metal bonded components

STORAGE AND PACKAGING

Cilbond R-7290W should be stored in a cool environment, ideally at 10-20ºC. It is a water-based product, so avoid freezing and ideally ensure it does not fall below 5°C.

If freezing does occur, warm slowly and then stir gently with a low-moderate shear stirrer.

Avoid transporting or storing at temperatures below 0ºC or above 35ºC.

Cilbond R-7290W will be available in 10 and 25 litre containers. 250ml trial samples are 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-7290W**, or for details of our other primers and bonding agents, please visit www.kommerlinguk.com or e-mail cilbond@hbfuller.com