CILBOND® R-7300W

Development Product

PROVISIONAL TECHNICAL DATA SHEET

CILBOND R-7300W **is a High-Performance One-Component Water-Based Bonding Agent for Rubber Compounds to Metal and Plastic Substrates.**

BENEFITS OF CILBOND R-7300W

BONDING CAPABILITIES:

Cilbond R-7300W is a water based one-component bonding system developed to give high performance bonding with the following elastomers:-

- Natural Rubber (NR)
- Styrene Butadiene Rubber (SBR)
- Chloroprene Rubber (CR)
- Polybutadiene (BR)
- Synthetic Polyisoprene Rubber (IR)
- Nitrile Butadiene Rubber (NBR)
- EPDM
- Polyepichlorohydrin (ECO)
- Chlorosulphonated Polyethylene (CSM / ACSM)
- Polyacrylate Rubbers (ACM)
- Carboxylated NBR (XNBR)
- Hydrogentated NBR (HNBR)

IN-SERVICE AND PROCESSING BENEFITS:

- Exceptional boiling water resistance – NR / Steel parts passed 1000 hours in boiling water.
- Excellent salt-water resistance and is superior to many solvent-based systems, showing ≤ 1mm edge failure after >600 hours in 5% salt spray at 35°C, with a 30% extension of the test specimens
- Excellent resistance to glycols at temperatures up to 160ºC for up to 1000 hours
- **Cilbond R-7300W** contains no toxic heavy metals, yet produces bonds with excellent heat resistance, up to at least 200ºC.

TYPICAL PHYSICAL PROPERTIES OF CILBOND R-7300W

Appearance	*Dark Grey/Green Liquid*
Total Solids	*24% by weight*
Viscosity - DIN 4 Cup @ 26°C	*35 seconds*
Specific Gravity, 26°C	*1.10*
Recommended Dry Film Thickness	*15 – 25 microns*
Bonding Temperature Range	*130 - 220°C*
pH	*8.0*
Minimum Film Forming Temperature	*>20°C*
Volatile Organic Compound (VOC) Content	*<5%*
Typical Coverage	*15m² / Litre*
Shelf Life - Provisional	*9 Months from Date of Manufacture*

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bsi. ISO 9001 Quality Management
Certificate Number FM 647341

METAL SURFACE PREPARATION

Cilbond R-7300W must be applied to carefully prepared surfaces to be effective. Ideally, metal surfaces should be degreased and grit-blasted with 200 - 300-micron clean, sharp alumina for non-ferrous metals or chilled iron grit for ferrous metals. Degreasing after grit-blasting improves the environmental resistance of the bonds. Alternatively, a proprietary phosphate treatment on steel or aluminium may maximise corrosion resistance.

Care should be taken when grit-blasting plastics - For further recommendations on substrate preparation, refer to **Information Sheet A1**.

APPLYING CILBOND R-7300W

AGITATION

Cilbond R-7300W contains materials which settle and so thorough stirring before use and occasional stirring during use is essential. For large-scale production runs, continuous stirring is recommended. If foam / froth is produced, stir slowly until it has subsided.

BRUSHING

Cilbond R-7300W may be applied by brushing as delivered. Dilution with up to 15% deionised / distilled water may improve flow. Use steady brush strokes in one direction only and do not over-coat.

DIPPING / ROLLER-COATING / DOCTOR-BLADE

Dilute using the minimum amount (typically 5 - 15%) of deionised or distilled water to give a viscosity within the range of 18 - 26 seconds on a Zahn 2 cup, or 16 – 24 seconds on a DIN 4 or Ford 4 cup. Stir continuously and avoid frothing / foaming.

SPRAYING

Depending on the spray equipment being used, **Cilbond R-7300W** may be ready to spray as supplied and generally requires no further dilution.
If dilution is required, add up to ca. 10% diluent.

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.

Ideally, apply to substrates pre-heated to 40 - 50ºC.

DILUTION

Dilute **Cilbond R-7300W** with de-ionised or distilled water and stir during dilution. It is also possible to dilute with water/alcohol blends containing <10% ethyl alcohol.

DRYING

Thorough drying is essential especially on grit-blasted metals. It is recommended that **Cilbond R-7300W** is applied to pre-heated metal parts (at 40 - 50°C), or the metals are heated after coating in an oven at 50 - 60°C. This will ensure rapid and thorough drying and give maximum environmental resistance.

If applying to unheated metal parts, ensure the ambient temperature is above 25°C and humidity is less than 70%. Allow films to dry for at least 60 minutes.

FILM THICKNESS

The above recommendations should give a suitable dry coating thickness of 10–15 micron. For maximum environmental resistance, coating thickness should be >15 microns. For severe environments it is essential that coatings are of even thickness, fully wetted and fully coalesced. Coatings should also be void-free and completely dry.

STORAGE

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

STORAGE AND PACKAGING

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

Cilbond R-7300W should be stored / transported between 0°C and 30°C.

If stored above or below these temperatures, then we recommend validating the material to ensure it still meets end-use requirements.

If stored below -5°C, warm slowly and then stir with a high shear to form a smooth and homogenous mix.

If stored above 40°C, then cool as soon as possible, re-check that the product is with original specification and use with 1 month.

Cilbond R-7300W is free from lead and virtually free from solvent and is supplied in 10 litre, 25 litre containers and 200 litre stirrer drums. 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-7300W** or for details of our other products please visit www.kommerlinguk.com or e-mail cilbond@hbfuller.com