PHENODUR® PR 616/65B

Technical Datasheet

be ECOWISE™

PRELIMINARY PRODUCT INFORMATION

TYPE

Curable phenolic resin

FORM OF DELIVERY (f.o.d.)

65% in n-butanol (65B)

USES

In combination with high molecular weight epoxy resins for interior and exterior coatings of metal packaging containers employed in the food industry, for apparatus, vessels and pipelines. Usable in epoxy-free (= BADGE-free & BPA-NI) formulas with polyester resins. **Phenodur PR 616/65B intentionally does contain neither Bisphenol A nor Bisphenol F and has a very low content of free formaldehyde of < 0.1%.**

TENTATIVE PRODUCT DATA

Determined per batch:

Dynamic Viscosity DIN EN ISO 3219 dynamic viscosity (cone 1°/40 mm; shear rate 25 1/s; 23°C)	[mPa.s]	500 - 3000
Non-Volatile Matter, Microwave, PM 235 non-volatile matter (7:20 min; 135°C; 1 g)	[%]	63 - 67
Iodine Colour Number DIN 6162 iodine color number		≤ 30

Not continually determined:

Non-Volatile Matter DIN EN ISO 3251 non-volatile matter (1 h; 135°C; 2 g; B)	[%]	~65

PROPERTIES AND USES

PHENODUR PR 616 is preferably used as curing resin in combination with high molecular weight epoxide resins of type # 7 and/or of type # 9 or with polyester resins of our DUROFTAL product family to formulate interior can coating systems .Mixtures of PHENODUR PR 616 with polyester resins result to BADGE-free and BPA-NI can coating systems.

Can coating

After being stoved, combinations of 30 - 45% PHENODUR PR 616 and of 70 - 55% epoxy resin or polyester resin (based on solids in each case) yield highly flexible films with good adhesion and chemical resistance for the interior coating of cans, tubes and other packaging containers used in the food and luxury commodity industries. The addition of acid catalysts, e. g. up to 5% of CYCAT XK 406 N (based on solid resin) increases the reactivity of the lacquers and the adhesion (especially on aluminum) of the stoved films, as well as their hardness and resistance to sulfur compounds. The gold colouring can be intensified by adding 5 - 10% PHENODUR PR 308 or PHENODUR PR 309 (based on solids content).

Chemically resistant protective coatings

PHENODUR PR 616 can be used as sole binder for relatively brittle, highly resistant pigmented stoving enamels on rigid substrates, e. g. for chemically resistant interior linings for vessels, apparatus and pipelines. Polyvinyl butyral (PVB) grades in additions of only 5 - 25%, improve the film flexibility without impairing the resistance of the protective coatings to chemicals. In the case of multiple-coat paint applications as required for protective coatings of this type, the first coats are not fully cured initially, but only cured completely together with the last coat.

PROCESSING

Glycol ethers, esters, diacetone alcohol and ketones are suitable solvents/diluents for PHENODUR PR 616. This resin can be pigmented with inert pigments and fillers like titanium dioxide, iron oxide red talk and spars. Pigmented systems are preferably used in acid and alkaline resistant systems.

Stoving conditions

Depending on the form of use and required coating thickness, the stoving conditions are between 30 and 10 minutes at 180 - 220°C. The upper temperature limit where overstoving begins to occur and flexibility accordingly starts to decline is 220°C For thin films such as can coatings, conditions of 10 - 15 min/190 - 200°C are adequate, or 90 s/265°C (shock-drying). Good resistance to chemicals is obtained as from 190°C.

Catalysis

The addition of acidic catalysts increases the reactivity and the film hardness. At the same time, this catalysis improves the adhesion on aluminum and tinplate.

DISTINGUISHING FEATURES

PHENODUR PR 616 is a higher reactive modification of PR 612 with faster curing speed and improved chemical (sterilization) resistance and a lower free formaldehyde value of < 0.1% vs. < 0.5% for PR 612/80B.

STORAGE

At temperatures up to 25°C storage stability packed in original containers amounts to at least 365 days.

The expiration date may be extended and COA updated after QC testing of retained samples, only for material in allnex possession.

SAFETY AND HANDLING

Please consult the Safety Data Sheet (SDS) for safety, health, and environmental data available from allnex.