



TYPE

Curable unplasticized phenolic resin

FORM OF DELIVERY (f.o.d.)

55 % in isobutanol / butanol (55IB/B)

USES

For coating the interior and exterior surfaces of packaging containers and cans; as high-adhesion, chemically resistant protective coatings for apparatus vessels, pipelines, etc.; for heat-curing phenolic/epoxide resin combinations.

PRODUCT DATA

Determined per batch

Dynamic Viscosity (Ubbelohde) DIN 53177

dynamic viscosity [mPa.s] 180 - 250
(23 °C)

Non-Volatile Matter DIN EN ISO 3251

non-volatile matter [%] 53 - 57
analogue DIN EN ISO 3251
(1 h; 135°C; 2 g; B)

Iodine Colour Number DIN 6162

iodine colour number <= 100

Not continually determined:

Density (Liquids) DIN EN ISO 2811-2

density [g/cm³] 0.99
approx.
(20 °C)

Flash Point DIN EN ISO 1523

flash point [°C] 34
approx.

DILUTABILITY

white spirit	●	ethyl acetate	●
xylene	●	butyl acetate	●
solvent naphtha	●	methoxypropyl acetate	●
acetone	●	methoxypropanol	●
methyl ethyl ketone	●	ethanol	●
methyl isobutyl ketone	●	butanol	●
cyclohexanon	●		
● = unlimited dilutability		⊙ = limited dilutability	
⊙ = substantial dilutability		○ = very limited or no dilutability	

COMPATIBILITY

% PHENODUR® PR 285	90	75	50	25	10
% other binder	10	25	50	75	90

Phenolic resins

PHENODUR® PR 217	●	●	●	●	●
PHENODUR® PR 308	●	●	●	●	●
PHENODUR® PR 373	●	○	○	●	●
PHENODUR® PR 401	●	●	●	●	●
PHENODUR® PR 722	●	●	●	●	●
PHENODUR® PR 897	○	○	○	○	○
PHENODUR® PR 515	●	●	●	●	●

Epoxy resins

Epoxy Resin "Type 1"	●	●	●	●	●
Epoxy Resin "Type 4"	●	●	●	●	●
Epoxy Resin "Type 7"	●	●	●	●	●
Epoxy Resin "Type 9"	●	●	●	●	●

Other binders

Poly Vinyl Buteral	●	●	●	●	●
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● = definite compatibility ○ = very limited or no compatibility

PROPERTIES AND USES

Can coating

After stoving, combinations of 20 - 40 % PHENODUR® PR 285 and 80 - 60 % Epoxy Resin "Type 7" or Epoxy Resin "Type 9" (each calculated on the solids content) yield high-adhesion, chemically resistant films with good flexibility for the internal and external coating of cans, tubes and other packaging containers used in the food and luxury commodity industries.

Chemically resistant protective coatings

PHENODUR® PR 285 can be used as sole binder in high resistant stoving enamels. The stoved films are comparatively brittle and can only be used on rigid substrates. Polyvinyl butyrals can be employed as plasticizing agents. The main products suitable for combination with epoxide resins is PHENODUR® PR 285. Since plastification reduces the general resistance of the stoving enamel coatings against chemicals, the mixing ratios have to be adjusted according to the resistance and film qualities required. Epoxide resin combinations with a predominant phenolic resin constituent have proved successful for coatings exposed to acid agents. Good film flexibility and resistance to alkalis are achieved by using rather large amounts of epoxide resin. Systems being employed for protective coatings of this type can be pigmented with inert fillers and pigments.

In multi layer coatings, the first coats applied are not fully cured, but dried at relatively low temperatures only. The coating system as a whole is cured together with the last coat applied (e. g. 30 min/180 - 210 °C). Coatings based on this principle are used for chemical resistant interior linings of vessels, apparatus and pipelines in the chemical and allied industries.



PROCESSING

Preparing the resin solution and diluents

The phenolic resin solutions are mixed with the other resin solutions at room temperature. Glycol ethers, esters, diacetone alcohol and higher ketones are suitable as solvents. Aromatic hydrocarbons can be used as thinners.

Stoving conditions

Depending on the application and film thickness, stoving condition lie between the limits of 30 to 10 minutes at 180 to 210 °C. Higher temperatures may cause a loss of flexibility. For relatively thin films, as applied for can coating, 10 to 15 min/190 - 200 °C is sufficient.

STORAGE

At temperatures up to 25°C storage stability packed in original containers amounts standard 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.

DISTINGUISHING FEATURES

In its reactivity PHENODUR® PR 285 resembles the PHENODUR® grades PR 217 and PR 401; it cures more rapidly than PHENODUR® PR 612 and PHENODUR® PR 897. Lacquers based on PHENODUR® PR 285 display the deepest gold shades of all Phenodur grades. The relatively low-viscosity resin PHENODUR® PR 285 gives coatings with a particularly high solids content. The PHENODUR® grades suitable for combination with epoxide resins are PR 217, PR 285, PR 401, PR 722 and PR 897.

SAFETY AND HANDLING

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

U.S. Environmental Protection Agency restrictions and requirements

The importation, processing or use of this product in the United States of America is subject to a Significant New Use Rule (SNUR) issued by the U.S. Environmental Protection Agency (US EPA). Among other conditions, the SNUR prohibits the predictable or purposeful release of the product to waters of the U.S. from manufacturing, processing or uses and imposes certain notice and recordkeeping requirements. Please see 40 CFR 721.5905 [or 40 CFR 721.5908 as applicable] for further information. This product may also be subject to export notification under TSCA Sec. 12(b).