POLYPLEX 490-14

Technical Datasheet

PRODUCT CODE: C240004/C240014

POLYPLEX 490-14 is a prepromoted, thixotropic, corrosion and high -temperature resistant unsaturated polyester resin, based on Terephthalic acid. This resin features a high molecular weight polymer which shows high crosslink density, and offers excellent solvent resistance and retention of physical properties at elevated temperatures. POLYPLEX 490-14 is a cost effective alternative to vinyl ester resins in many applications.

POLYPLEX 490-14 is based on a higher molecular weight, high crosslink density terephthalic polymer, which promotes high corrosion resistance and improved toughness properties compared to standard unsaturated polyester resins. Coupled with these properties the high heat distortion (HDT) of POLYPLEX 490-14 makes this resin ideal for use in high temperature, mildly corrosive service conditions and also allows for greater retention of its physical properties at these elevated temperatures. Based on these properties POLYPLEX 490-14 can therefore be used as a suitable, cost effective alternative to Vinyl Ester Resins in certain service conditions.

POLYPLEX 490-14 is a low exotherm variant in the Polyplex 490 series, which allows for thick wet on wet laminate construction for a typical composite Underground Storage Tanks (UST). A benefit of these higher build laminates is a significant reduction in processing times due to shorter waiting periods between fabrication stages. POLYPLEX 490-14 is a recognized component under UL1316 and is therefore suitable for use for single walled UST's or the inner and/or outer walls of secondary containment Type I or Type II UST's. Polyplex 490-14 is intended for filament winding applications.

FEATURES

- High molecular weight, high crosslink density terephthalic polyester
- High heat distortion temperature (HDT)
- Low exotherm version of Polyplex 490 series
- Excellent chemical resistance towards acids, salts and polar solvents
- Recognized component under UL1316

SUGGESTED USE

POLYPLEX 490-14 is particularly suited for spray-up, hand lay-up and filament winding applications. POLYPLEX 490-14 is suitable for use in the construction of FRP fuel storage tanks, and is UL approved as a recognized component under UL 1316.

TYPICAL LIQUID RESIN PROPERTIES

	Summer (240004)	Winter (C240014)
Reactivity @ 25°C, 1% w/w MEKP NR20 Catalyst (minutes)	40 – 45	30 - 35
Specific Gravity @ 25°C	1.10	
Stability in the Dark @ 20°C (months)	6	
Monomer Content (%)	48	
Viscosity @ 25°C Brookfield, LVT, Spindle 3, 60 rpm (centipoises)	500 – 600	400 - 500

Typical values: Based on materials tested in our laboratories, but varies from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

RELATED PRODUCTS

C240012 – Polyplex 490-12

TYPICAL CAST UNFILLED RESIN PROPERTIES

PROPERTY	TYPICAL VALUE	TEST DETAILS
Hardness	40	Barcol (GYZ 934-1) EN 59
Density	1.19	ISO R1183
Tensile Strength	60 MPa	ISO R527
Flexural Strength	115 MPa	ISO 178
Flexural Modulus	3.585 GPa	ISO 178
Elongation at break	2.0%	ISO R527
Heat Deflection	126 @ 1.82 MPa (° C)	ISO 175 (1.8 MPa)

Cast resin was prepared as laid down in BS 3532 using 1% MEKP. Cured at room temperature for sixteen hours then post cured for two hours at 80°C followed by two hours at 100°C.

RECOMMENDED CATALYST

We recommend using 1.5% MEKP NR20 for all general purpose applications.

STORAGE AND HANDLING

To ensure maximum stability and maintain optimum resin handling properties, polyester resins should be stored in closed containers, away from heat sources and sunlight. The resin should be stored away from all sources of ignition. Stored resin quantities should be kept to a reasonable minimum and used on a first in/first out stock rotation basis. Prolonged storage, or unfavourable storing conditions, may cause separation, therefore agitation of the resin before use is recommended.

STANDARD PACKAGING

Mild steel drums (225kg)

Always refer to the MSDS before use.