TECHNIC® R50
RESORCINOL DIPPING RESIN

TECHNICAL DATA SHEET

Issue No 004/01

Revision Date 01.10.2022

Product
TECHNIC® R50

Classification
Resorcinol based Dipping Resin
50% Resorcinol Formaldehyde Resin in an aqueous solution

Composition
TECHNIC DIPPING RESINS-
TECHNIC R50 is an orange-red aqueous solution of a resorcinol formaldehyde condensation product containing 50% solids respectively. TECHNIC R50 are especially well suited for using RFL dip formulations since they are pre-reacted and dips made with these resins require no aging of the resin solution as with "in-situ" dips made from resorcinol. All three resins are identical in chemical composition and manufacturing procedure. They differ only in percent resin solids.
TECHNIC R50 is designed for use in resorcinol formaldehyde latex (RFL) dip formulations for the treating of organic fibers such as polyester, nylon, rayon or aramid. R50 can be used in place of resorcinol in RFL dip formulations without the need to age the resin solution as is required when using resorcinol.

Properties

Product	**R 50**
Physical Form	Liquid
Color	Orange-red
Resin Solids, %	50± 1
pH	01 – 02

Typical properties

Product	**R 50**
Free Resorcinol %	9 - 10
Viscosity,(cps at 25°C)	120
Specific Gravity at 25°C	1.17

Solubility

Product	**R 50**
Water	Complete
Alcohols	Complete
Ketones	Complete

Storage properties
TECHNIC R50 is acidic and must be stored and handled in acid resistant equipment. They are stable and will not polymerize during storage. At elevated temperatures precautions must be taken to prevent evaporation of water. Due to the high water content of TECHNIC R 50, freezing and separation may occur below 5°C. The very low viscosity of TECHNIC R 50 at low temperatures makes it ideal for automatic metering equipment. As the active matter concentration increases, viscosity increases.

Processing behavior - Dipping Systems
Polyester cords are widely used as reinforcing members in rubber compounds for the manufacture of pneumatic tires. Polyester exhibits desirable physical properties such as good dimensional stability, high modulus, good fatigue resistance and high strength. These properties have enabled polyester to be widely used as body ply fabric in bias, belted bias and radial passenger tires. Polyester has also found acceptance in industrial products such as conveyor belts, clutches, mechanical couplings and many other items requiring high dimensional stability and strength.

The relatively inert chemical structure, which gives polyester many of its desirable properties, contributes adversely to its ability to bond to natural rubber and natural/SBR compounds. The conventional single step RFL (Resorcinol-Formaldehyde-Latex) dip systems do not perform well with all polyesters or under the most demanding service conditions. A two- step dip expands the range of polyesters, which can be successfully treated.

This system consists of a first dip, or "pre-dip" of a low solids (approximately 5%) suspension of a caprolactam blocked isocyanate and a water-soluble epoxide, which is applied to the polyester feber. This "blocked" isocyanate dip is "unblocked" by heating the cord to approximately 200°C (428°F) thus allowing the isocyanate to react with the cord and epoxide. Caprolactam, the blocking agent, is liberated during

TECHNO WAXCHEM PVT. LTD.
5th Floor, Hitech Chambers, 84/1B, Topsia Road(S), Kolkata – 700 046, WB, India
Tel: +91 33 2285 1278 / 1279, 4004 8093 / 88094
Fax: +91 33 2285 1280. Email – info@twc.in. URL – www.twc.in

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this heating process. The second dip use in this system is a conventional type, or ammoniated RFL dip containing 20/23% solids. The RFL "cover dips" were originally developed by reacting resorcinol and formaldehyde to from the resin "in-situ". Next the resin solution was added to the latex to complete the dip. RFL dips prepared from TECHNIC R50 are well suited for use in fabric dipping operations since there is no "Resin Master" aging time required as with on RFL dip prepared from resorcinol. The "in-situ" dips prepared from resorcinol requires an aging time of 4-6 hours to allow the formation of the R-F resin before the latex is added .An additional 16-18 hour aging time for the completed dip is recommended before the "in-situ" dips are ready for use. With system using a preformed resin such as R50, the resin solution may be prepared and added to the latex immediately. These dips may be used as soon as the latex and resin solution have been mixed, however adhesion improves if the dip is allowed to age at least 12 hours before use

Handing precautions

All lines, storage tanks and processing equipment, which come in contact with these resins, should be constructed of acid-resistant material. TECHNIC DIPPING RESINS are stable at elevated temperatures; however, precautions must be taken to prevent evaporation of water and concentration of resin solids.
Refer MSDS for more details

Shipping, Handling and Storage Packaging

TECHNIC R50 are available in HDPE Drums, Steel Drums & IBC's.

Shelf Life

12 months from the date of manufacturing. Should store in cool and dry place.

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Note: Information in this publication is believed to be accurate and is given in good faith, but it is for the customer to satisfy itself of the suitability for its own particular purpose. TWPL gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded expected to the extent that lw prevents such exclusions.

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