



Instrumental Polymer Technologies, LLC

Technical Data Sheet

QUICKSTAR™ 384 X

APPEARANCE.....CLEAR LIQUID
MOLECULAR WEIGHT RANGE.....600 TO 1,500g/mole
EQUIVALENT WEIGHT.....153g/equivalent
HYDROXYL FUNCTIONALITY.....6-8
VISCOSITY (100% SOLIDS AMBIENT).....5-15 POISE
DENSITY.....1.13 g/ml (9.40 lb/gal)
SOLUBILITY IN WATER.....COMPLETE

Description

QUICKSTAR™ 384 X is an aliphatic polycarbonate polyol synthesized into the shape of a spherical dendrimer. Though the interior core of QUICKSTAR™ 384 X is hydrophobic polycarbonate, its surface is high functionality hydroxyls which make the dendrimer completely soluble in water. QUICKSTAR™ 384 X is a small dendrimer so it is very low viscosity and has a low equivalent weight. The hydroxyls of the dendrimer are reactive for reactivity with isocyanates. However, the dendrimers are also alkaline and therefore coordinate with acidic functionality in coating films made from 1K PUDs or acrylic emulsions.

Applications

QUICKSTAR™ 384 X is particularly useful as a replacement to carbodiimides or aziridine for improving the strength, hardness and chemical resistance of one component acrylic latex emulsions if added at 3-10%. The alkaline but highly functional dendrimeric structure crosslinks with carboxylates via an acid/base interaction upon evaporation of tertiary amines to improve the properties of the coating.

In a similar manner, QUICKSTAR™ 384 X can also be used in water-borne two component urethane systems. Because of its hydroxyl functionality, it will also participate in the cure, as well as coordinate with carboxylates.

QUICKSTAR™ 384 X can also be used in 100% solids two component urethane systems to improve flow. In such a system, consider it as a replacement to small diols such as 1,4 butanediol.