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Standard Terminology Relating to Hydrocarbon Resins¹

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1. Scope

1.1 The hydrocarbon resin industry continues to evolve from a source of replacement products for naturally-derived materials to industrial materials that have no naturally-derived counterparts. Along with this changing character of the industry, various manufacturing participants have introduced terms that have led to confusion among both manufacturers and consumers. This terminology standard is intended to alleviate that confusion and promote standard usage of terms in the hydrocarbon resin industry.

1.2 Resins derived principally from natural terpene fractions are under the jurisdiction of D01.34.

2. Terminology

2.1 Definitions:

C₅ aliphatic resin, *n*—a resin produced by the cationic polymerization of a low-boiling aliphatic steam-cracker fraction.

DISCUSSION—The principal monomers are typically cis- and trans-piperylene (1,3-pentadiene).

C₉ aromatic resin, *n*—a resin produced by the cationic polymerization of heavy aromatic steam-cracker or coal-tar fractions.

DISCUSSION—The C₉ designation is broad and may include styrene, indene, methylstyrenes, and methylindenes. Depending on the source of the C₉ fraction, it may also include coumarone and dicyclopentadiene.

cloud point, *n*—the temperature at which a defined liquid mixture, under controlled cooling, produces perceptible haze or cloudiness due to the formation of fine particles of an incompatible material.

dicyclopentadiene resin, *n*—a resin produced by the thermal polymerization of a concentrated dicyclopentadiene stream.

hydrogenated resin, *n*—a resin that has been subjected to some degree of reaction with hydrogen to decrease the level

of residual unsaturation.

natural resin, *n*—a resin of vegetable or animal origin.

DISCUSSION—This term includes rosins, wood extracts or paper manufacturing by-products, fossil resins, mined resin, secretion products from insects, and their main derivatives. In the context of hydrocarbon resins, this refers to mined bituminous resins.

polyterpene resin, *n*—a resin produced by the polymerization of terpene fractions or mixtures of terpenes obtained from naval stores, or paper pulp production, or citrus juice production, or combinations thereof.

DISCUSSION—Terpene fractions (turpentine oils) can be derived from gum turpentine, wood turpentine, or sulfate turpentine; citrus juice production yields a *d*-limonene fraction as an extract of the peel.

pure monomer resin, *n*—a resin produced by the polymerization of essentially pure compounds such as styrene, one of the methylstyrenes, or controlled mixtures of pure monomers.

re-mass, *v*—to form, during storage, massive blocks from particulate forms, such as flakes, pastilles, or powder.

DISCUSSION—Re-massing can occur with all resins but is influenced by storage temperature, and pressure, due to stacking; the lower softening point resins re-mass at lower temperatures. Particle size distribution can also have a significant effect.

reinforcing resin, *n*—a resin that associates with the aromatic blocks of block co-polymers and raises the upper service temperature of an adhesive blend.

synthetic hydrocarbon resin, *n*—a low molecular-weight thermoplastic polymer derived from steam-cracker fractions, coal-tar fractions, synthetic C₅ fractions (for example, 1,3-pentadiene), and pure unsaturated monomers.

DISCUSSION—Polymerization of these streams is carried out using a cationic catalyst or by a free radical process using heat and pressure. Physical forms range from viscous liquids to brittle solids. Colors range from colorless to dark brown.

tackifying resin, *n*—a resin, which when mixed with certain compatible polymers, imparts tack, under use conditions, to the finished formulation.

3. Keywords

hydrocarbon resin; terminology

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