



ADVITROL® 100 & ADVITROL® 50

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General Description:

Advitrol 100 & Advitrol 50 are castor-based thixotropes suitable for a wide range of solvent systems. Compared to organoclays, castor-based thixotropes are significantly more thixotropic. This means that paints and coatings formulated with castor-based thixotropes exhibit shear-thinning that does not immediately rebuild upon removal of the shear forces. This type of rheology presents several advantages, mainly in application properties. It is often said that these coatings exhibit a “buttery” feel during brushing. These thixotropes also provide a good balance between sag and leveling and usually are more effective in pigment suspension when compared to organoclay gellants.

Advitrol 50 is a more easily dispersed form of Advitrol 100, but Advitrol 50 may be somewhat less efficient than Advitrol 100.

Typical Properties:

Advitrol® -100

Composition: Castor Oil Derivative

Density: 8.48 lbs/US gal (1.02 g/cm³)

Bulking Value: 0.118 US gal/lb

Particle Size 100%<32µm

Color/Form: White Powder

Incorporation Temperature Range: Aliphatic Solvents: 130°-180°F (55°-82°C)

Aromatic Solvents: 90°-120°F (32°-49°C)

Advitrol® -50

Composition: Inorganically Extended Castor Oil Derivative

Density: 12.2 lbs/US gal (1.46 g/cm³)

Bulking Value: 0.082 US gal/lb

Particle Size 100%<32µm

Color/Form: White Powder

Incorporation Temperature Range: Aliphatic Solvents: 130°-180°F (55°-82°C)

Aromatic Solvents: 90°-120°F (32°-49°C)

Applications:

Advitrol 100 & Advitrol 50 may be used in trade sales paints, industrial maintenance coatings, marine coatings, and product finishes. Advitrol 100 is especially useful in formulating high build epoxies and vinyls. Aliphatic, aromatic, and oxygenated solvents are all suitable for the Advitrol types. Note that as the KB Value of the solvent system increases, the incorporation temperature range narrows and the minimum and maximum incorporation temperatures decrease.

General Information:

All castor-based thixotropes are highly solvent/temperature sensitive. Advitrol 100 & Advitrol 50 are no exceptions. Care must always be exercised to strictly adhere to the operating temperature constraints imposed by each particular solvent system. Advitrol 100 & Advitrol 50 should be added at the beginning of the batch, preferably by mixing with the vehicle prior to the addition of pigments. This premixing is designed to disperse the Advitrol 100 & Advitrol 50 particles prior to the swelling of those particles when the batch reaches operating temperatures. Advitrol 100 & Advitrol 50 should not be added to batches already at operating temperature as swelling and agglomeration of the Advitrol particles may occur before those particles can be dispersed.

In order to fully activate the Advitrol 100 & Advitrol 50, the grind phase should be brought within the activation temperature range. This range is a function of the KB Value of the solvent system. For aliphatic systems 130°–180° F (55°-82°C) is a good approximation of this range. For aromatic systems the suggested range would be 90°-120°F (32°-49°C). It is mandatory that the formulator establish this temperature range for each particular solvent system. The middle of the activation temperature range is the preferred activation temperature. If the maximum activation temperature is exceeded, soft seeds will appear in the paint upon cooling to room temperature. Caution: This "seeding" may also occur if finished paint is stored in a manner that allows the paint to exceed maximum activation temperature during storage. This is a distinct possibility for aromatic systems in the South and West during summer months. Note that temperature readings in the center of the batch, near the disperser blade, may be quite higher than temperature readings taken at the top of the tank. The highest temperature in the batch must not exceed the maximum activation temperature. If the maximum activation temperature is exceeded, seeding may be avoided by agitating the batch during cool-down to the minimum activation temperature. Once seeding has occurred, the batches may be reworked by bringing the batch up to activation temperature and applying intensive shear. Sand milling or ball milling may be required.

Always avoid shocking systems containing Advitrol 100 or Advitrol 50. Examples of things to avoid are:

1. Adding cold let-down solvent to a hot grind paste.
2. Packaging hot batches in gallon cans and storing in a cold warehouse.

Batches should always be agitated during cool-down to avoid the formation of "false body". "False body" is a structure that is easily broken by shearing and will not recover. It can be responsible for erroneous viscosity readings.

Recommended Use Levels:

Advitrol 100 is typically used at levels of 3 to 12 pounds per hundred gallons, 0.2% to 0.8% by weight of the total formulation.

Advitrol 50 is typically used at levels of 4 to 18 pounds per hundred gallons 0.3% to 1.3% by weight of the total formulation.

For additional information or technical assistance contact Southern Clay Products, Inc. toll free at 800-324-2891.

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