



Escoat® P-20 Solids Carbamate Release Coat

Overview

Escoat P-20 Solids is a non-silicone product especially produced and widely used for pressure sensitive labels, film and tapes. Its high degree of purity, quality and tight melting point range offers superior properties and performance to critical users. Escoat P-20 Solids is used on films with adhesives based on natural rubber, SBR, SIS, acrylic, etc. primarily for obtaining release in self wound tapes where tight peel is mandatory. Escoat® P-20 Solids is expected to give a peel strength 2-3 times the level expected from most silicone release agents. In addition, the non-stick properties of the Escoat P-20 Solids resin find use in a wide range of applications outside the pressure sensitive area.

Chemistry

Chemical Name:	Polyvinyl Octadecyl Carbamate
CAS Number:	36671-85-9
Chemical Structure:	Proprietary

Typical Properties

Product Form:	Solid
Melting Point:	97 – 110°C
Molecular Weight:	>60,000 g/mol

Solubility (at 20°C)

Chloroform	Yes
Trichloroethane	Yes
Tetrachloroethane	No
1,2-Dichloroethane	No
Benzene	Yes
Toluene	Yes
Xylene	Yes
Cyclohexane	No
THF	Slightly
1,4-Dioxane	No
DMSO	No
MEK	No
Ethyl Acetate	No
Isopropyl Alcohol	No
Sec-Butyl Alcohol	No

Solubility (at 50°C)

Chloroform	Yes
Trichloroethane	Yes
Tetrachloroethane	Yes
1,2-Dichloroethane	Yes
Benzene	Yes
Toluene	Yes
Xylene	Yes
Cyclohexane	Slightly
THF	Yes
1,4-Dioxane	Yes
DMSO	No
MEK	Slightly
Ethyl Acetate	No
Isopropyl Alcohol	No
Sec-butyl Alcohol	Slightly

Applications

Escoat P-20 Solids provides good release properties and prevents delamination or tearing when applied to the backing on the side opposite the adhesive. It has been extensively tested and is widely approved for use with pressure sensitive tapes such as polypropylene, polyester, polyethylene, cellophane, duct tapes and other substrates that require unwinding ease. Escoat P-20 Solids may also be used for foil and paper. When Escoat P-20 Solids is used as a release coat on paper, a barrier coat is recommended. Escoat P-20 Solids is particularly useful to give light release on so-called "easy peel" acrylics.

Good release properties can be obtained using as little as a 0.5 – 2.0% solids material in toluene and a very fine gravure roller. A smoothing bar after application is recommended. It is essential to keep the gravure roller clean at these low levels of application to ensure consistent application. Laboratory evaluations can be made with Meyer rods or other simple application methods where a consistent near monomolecular layer of Escoat P-20 can be put down.

Advantages

- The narrow melting point range ($\pm 5^{\circ}\text{C}$) assures consistent release properties.
- Release effects remain stable after oven aging.
- Cost efficient. Requires a lower quantity than silicone release coatings. 0.01 to 1.0 grams of Escoat[®] P-20 Solids for one square meter of film is sufficient. Excellent release can be obtained using between 0.5 - 2.0% solids material in toluene, depending on film, coating equipment and desired release levels. Only needs a near-monomolecular film.
- 100% dry powder.
- No fire hazard or special red-label storage area required for Escoat[®] P-20 Solids dry powder.
- One step dilution process. Properly diluted solution will not gel.
- Does not require high temperature processing that is typically needed for silicone coatings.

Guidelines for Use

Depending on type of tape film and type of pressure sensitive adhesive, the concentration of solid matter is determined by pre-testing. If a 0.5% weight solution is required, add 500 grams of Escoat P-20 Solids to 2 kgs of toluene. Raise temperature to 122 - 144°F with constant stirring until it becomes clear. Then add this solution to 97.5 kgs of toluene.

Mixing time at 10% solids in toluene at 122 - 144°F requires about 20 - 30 minutes. It takes 2 – 3 hours to dissolve Escoat P-20 Solids at 10% solids in toluene at 120°F.

The exact formulation to be used is dependent on the substrate, performance requirements, and other factors, and should be determined by the user based on testing to simulate actual conditions of use.

Storage

This product may be stored up to two years in a sealed container. Containers should be kept tightly closed and stored in a cool, dry place.

Safety

Please read and understand the Safety Data Sheet (SDS) prior to handling or using this product.

FDA Regulations

Escoat P-20 Solids (CAS # 36671-85-9) has been tested and approved for clearance for use in food contact applications. Please contact your Mayzo representative for complete details, including restrictions of use.

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