F Y N O L - G

(THICKENING AGENT)

FYNOL-G IS AN ORGANIC THIXOTROPIC AGENT USED TO CONTROL THE RHEOLOGICAL PROPERTIES OF NON-AQUEOUS SYSTEMS i.e. PAINTS, PRINTING INKS, SURFACE COATINGS, ADHESIVES ETC;

FOR PROCESSING :

* EASY TO ADD AS POWDER
* NO PREGEL
* EASY TO DISPERSE
* MULTIPURPOSE APPLICATIONS
* NO PROBLEMS WITH FORMULATION

FOR THE PRODUCT :

* NO SETTLING
* NO DROPPING
* NO SAGGING
* EXCELLENT APPLICATION PROPERTIES
* EXCELLENT STORAGE STABILITY

APPLICATIONS

IN MANUFACTURING :

- ALKYD ENAMELS
- CAR PRIMERS
- MAINTENANCE PRIMERS
- CAR PAINTS
- BITUMINOUS PAINTS
- CYCLO-RUBBER PAINTS
- EFFECT VARNISHES
- SOLVENT FREE EPOXY SYSTEMS
- EPOXY PAINTS (WITH SOLVENTS)
- PRIMERS
- WOOD-PRESERVATIVE STAINS
- INDUSTRIAL VARNISHES (AIR & OVEN DRYING)
- PUTTIES & SEALING COMPOUNDS
- ADHESIVES & DISPERSION ADHESIVES
- SYNTHETIC RESIN VARNISHES
- NITROCELLULOSE & NITROSYNTHETIC LACQUERS
- PLASTISOLS & PLASTIGELS
- POLYESTER PAINTS & FILLERS
- POLYURETHANE PAINTS
- TRAFFIC PAINTS
- STRUCTURAL VARNISHES
- ZINC DUST PRIMERS
- ARCHITECTURAL FINISHES
- TRADE SALES FINISHES
- STAINS
- CAULK & MASTICS
- SEALANTS
- CHLORINATED RUBBER PAINTS
- EPOXY SYSTEMS
- ROAD MARKING PAINTS
- MAINTENANCE PAINTS
- COATINGS
- AIR DRY INDUSTRIAL FINISHES
- HAMMER FINISH PAINTS
- DECORATIVE PAINTS
- TEXTURE & FLAMBOYANT FINISHES
- COSMETICS & ADHESIVES
- ANTIFOULING PAINTS
- CAULKING COMPOUNDS
- LACQUERS

GENERAL PROPERTIES OF FYNOL-G

1. In general, FYNOL-G is insoluble in most organic liquids. It is non-yellowing and un-reactive with paint vehicles and pigments. It will not detract from the durability, rate of drying, washability or other properties attributed to good finishes.

2. FYNOL-G posses certain advantages over other thickeners in that it's ability to body organic liquids is not affected by impurities such as water, phenol, polar solvents and slightly basic or acidic components.

3. FYNOL-G will maintain uniform viscosity over long period of aging. This is in contrast to some thickeners, which continue to body a coating until poor flow properties result, or which thin out due to the effects of polar ingredients in the system. This leads to improper leveling, brush marks and other undesirable properties.

4. FYNOL-G is an easy replacement of Aluminium stearate. FYNOL-G can be used directly during grinding or can be made into gel form under high speed stirring (min. activation temperature is 35°C - 55°C).

5. THE MAXIMUM BENEFICIAL EFFECTS OF FYNOL-G CAN BE OBTAINED SIMPLY BY ADDING IT AS PART OF THE PIGMENT GRIND.

6. FYNOL-G will impart such desirable properties as thixotropic body pigment suspension, anti-sag, improved brushability and penetration control to a variety of protective coatings.

FYNOL-G is recommended for :

(A) Processing in dispersion equipment, which does not develop heat (to maximum of 55°C) and with aliphatic solvents.

(B) Processing in heat developing dispersion equipment.

FYNOL-G should be added at the beginning of the paint dispersing process preferably by premixing in Solvent/Binder for about 5 minutes before other components are added.

For optimum incorporation of FYNOL-G into a paint system, both a lower and upper processing temperature must be observed. A minimum temperature of about 35°C is necessary to properly build the thixotropic structure.

These temperature limits are

50°C - 80°C for aliphatic solvent systems

35°C - 55°C for aromatic, oxygenated & ester type solvent systems.

If a temperature of about 55°C is exceeded, soft gel like particles may appear on return to room temperature (seeding).

The presence of some aromatic solvents lowers this upper temperature limit ; should this limit be exceeded, the formation of particles can be prevented by a mild continuous stirring on the cool down to 45°C or below.

Within the prescribed temperature range, FYNOL-G should be subjected to as much shear as possible during processing. The more intense the dispersing or grinding action, the more pronounced and immediate the effect.

USE OF FYNOL-G IN VARNISH :

It is recommended to use FYNOL-G at the use level of 0.5 to 1.0% in varnish & mix in high speed mixer till activation temperature of 40°C is achieved and all particles of FYNOL-G are dissolved fully in media.

It is being used in Synthetic Varnish, High Gloss Varnish, Insulating Varnish, Clear Varnish, Copal Varnish etc.

RECOMMENDED PROCESSING TEMPERATURE RANGE FOR FYNOL-G WITH SPEED DISPERSING EQUIPMENT :

Aliphatic Solvents	: 57°C - 74°C
Aromatics Solvents	: 33°C - 49°C
Oxygenated Solvents	: not recommended

For FYNOL-G, it is best to process in the middle of the recommended process temperature ranges. This provides max. consistency & efficiency regardless of normal raw material variance, and assures that processing temperature will stay within the min. and max. limits.

Too low a processing temperature leads to incomplete rheology development. Excessively high processing or storage temperature may partially solubilize the FYNOL-G. This leads to the loss of rheological structure and formation of soft gel particles upon cool down.

DWELL TIME :

The length of time under optimum processing temperature is very important for all organic rheological additives like FYNOL-G.

High speed dispersion equipment requires the organic rheological additives to be within the recommended processing temperature aid with shear for 15 - 30 min.

For Ball Mills, 3 Ball Mills and Sand Mills :

See specific recommendations given at the end of this data.

FALSE BODY & VISCOSITY MEASUREMENT :

FYNOL-G will develop what appears to be an excessively high viscosity when the coating system containing FYNOL-G is cooled down without agitation. This excessively high viscosity is termed as “False Body”.

It is a temporary, permanently reversible low shear rate viscosity increase.

A hot batch allowed to cool down overnight without agitation will appear gelled the following day. Turning on the disperser and mixing for a few minutes will break the false body and bring the batch to its true viscosity.

False body can lead to errors in quality control viscosity measurements.

If viscosity measurement is delayed, false body can occur in the sample cup, leading to erroneously high viscosity measurements.

Mixing with a spatula will break down the false body and allow accurate viscosity measurements.

FYNOL-G is designed for aliphatic and aromatic solvent based paints. FYNOL-G imparts an almost ideal balance between sag control and leveling.

It is particularly suited for High build systems, such as chlorinated rubber. Typical use levels are 0.2% to 1% based on total system weight.

FYNOL-G may be used in Glycol ethers such as cellosolve or carbitol, if processing temperatures are within 30°C to 40°C.

FYNOL-G is suitable for following Medias :

MEDIUM POLARITY MEDIA	**LOW POLARITY MEDIA**
Dibutyl Phthalate	Benzene
Dioctyl Phthalate	Toluene
Epoxies	Xylene
Polyester	Turpentine
Polyamide	Dipentene
Polyurethane	Solvent-Naptha
Tricresyl Phosphate	Styrene
Alkyds	Mineral Oils
Oleoresinous Varnishes	Aliphatic Compounds
Vegetable Oils	Hexane
	Haptane
	Odorless White Spirit

RECOMMENDED LEVELS :

The optimum level of FYNOL-G will vary, depending on the type of the system involved.

In paints, a typical starting level of usage of FYNOL-G is 0.2% to 0.8% by the weight of the total composition.

In caulking compounds and mastics, between 0.2% to 2% is generally, required.

The following Binders are among the most important used in conjunction with FYNOL-G.

(a) All kinds of alkyd resins including modified types such as styrenated alkyds, chlorinated rubber.
(b) Binders containing chlorine such as polyvinyl chloride, its copolymers & post-chlorinated products, as well as chlorinated polyethylene.
(c) Curable Epoxy coatings including solvent free systems.
(d) Epoxy ester
(e) Tar or bitumen and their combinations
(f) Two component polyurethane systems.

ADVANTAGES :

FYNOL-G

* Shows good thixotropic, thickening and antisettling effect.
* Promotes pigment and filler suspension.
* Controls flow and leveling.
* Controls liquid penetration into porous surfaces.
* Provides sag and slump control.
* Provides excellent package stability.
* Does not react with pigments or binders.
* Is easy to disperse.
* Reduction of sagging and dripping
* Application of thick coatings
* Prevention of pigment floating, flooding and settling.
* Flow improvement

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