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Manufactured by: - FINE ORGANICS INDUSTRIES

FYNOL – G

THICKENING AGENT

FYNOL – G IS AN ORGANIC THIXOTROPIC AGENT USED TO CONTROL THE RHEOLOGICAL PROPERTIES OF NON – AQUEOUS SYSTEM i.e. PAINT, PRINTING INKS, SURFACE COATING, ADHESIVES ETC.

FOR PROCESSING	FOR THE PRODUCT
EASY TO ADD AS POWDER	NO SATTILING
NO PREGEL	NO DROPPING
EASY TO DISPERSE	NO SAGGING
MULTIPURPOSE APPLICATIONS	EXCELLENT APPLICATIONS PROPERTIES
NO PROBLEMS WITH FORMULATION	EXCELLENT STORAGE STABILITY

APPLICATION

ALKYD ENAMELS	CAR PRIMERS	MAINTAINANCE PRIMERS
CAR PAINTS	BITUMINIOUS PAINTS	CYCLO – RUBBER PAINTS
EFFECT VARNISHES	SOLVENT FREE EPOXY SYSTEM	EPOXY PAINTS
PRIMERS	WOOD – PRESERVATIVE STAINS	(WITH SOLVENTS)
INDUSTRIAL VARNISHES (AIR & OVEN DRYING)	PUTTIES & SEALING COMPOUNDS	ADHESIVES & DISPERSION ADHESIVES
SYNTHETIC RESIN VARNISHES	NITROCELLULOSE & NITROSYNTHETIC LACQUERS	POLYESTER PAINTS & FILLERS
POLYURETHENE PAINTS	TRAFFIC PAINTS	PLASTISOLS & PLSTIGELS
STRUCTURAL PAINTS	ZINC DUST PRIMERS	ARCHITECHTURAL FINISHES
TRADE SALES 2INISHES	STAINS	CHLORINATED RUBBER PAINTS
CAULK & MASTICS	SEALANTS	AIR DRY INDUSTRIAL FINISHES
EPOXY SYSTEM	ROAD MARKING PAINTS	ANTIFOULING PAINTS
MAINTAINANCE PAINTS	COATING	LACQUERS
HAMMER FINISH PAINTS	DECORATIVE PAINTS	
TEXTURE & FLAMBOYANT FINISHES	COSMETICS & ADHESIVES	
	CAULKING COMPOUNDS	

GENERAL PROPERTIES OF FYNOL – G

- In general, **FYNOL – G** is insoluble in most organic liquids. It is non – yellowing and UN – reactive with paint vehicle and pigments. It will not detract from the durability; rate of drying, washability or other properties attributed to good finishes.
- FYNOL – G** possess 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 compounds.
- 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 levelling brush marks and other desirable properties.
- 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).
- THE MAXIMUM BENEFICIAL EFFECT OF FYNOL – G CAN BE OBTAINED SIMPLY BY ADDING IT AS PART OF THE PIGMENT GRIND.**
- FYNOL – G** will impart such desirable properties as thixotropic body pigment suspension, anti – sag, improved brushability and penetration control to a variety of protective coating.

FYNOL – G IS RECOMMENDED FOR:

- A) Processing in dispersion equipment, which does not develop heat (to max. 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 temperatures 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 get like particles may appear on return to room temperature (seeding).

The presence of some aromatic solvents lowers this upper temperature limit should this limit may 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 mixture till activation. Temperature of 40°C is achieved and all particles of **FYNOL – G** are dissolved 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 solvent	: 57°C – 74°C
Aromatic solvent	: 33°C – 49°C
Oxygenated solvent	: 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.

Tow low a processing temperature leads to incomplete rheological developed excessively high processing or storage temperature may partially solubilize the **FYNOL – G**. that leads to the loss of rheological structure and formation of soft gel particles upon cooled down.

DWELL TIME:

The length of time under optimum processing temperature is vary 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 minutes.

FOR BALL MILLS, 3 BALL MILLS AND SAND MILLS: -

See specific recommendations gives 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 “False Body”.

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

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

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

If viscosity measurements are 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 solvents based paints. **FYNOL – G** imparts an almost ideal balance between sag control and levelling.

It is particularly suited for high build system, such as chlorinated rubber. Typical use levels are 0.2 & 0.8 % 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 – 40°C.

FYNOL – G is suitable for following Medias: -

MEDIUM POLARITY MEDIA:	LOW POLARITY MEDIA:
DIBUTYL PHTHALATE	BENZENE
DIBUTYL PHTHALATE	TOLUENE
EPOXIES	XYLENE
POLYESTER	TURPENTINE
POLYAMIDE	DIPENTINE
POLYURETHANE	SOLVENT – NAPHTHA
TRICRESYL PHOSPHATE	STYRENE
ALKYDS	MINERAL OILS
OLEORESINOUS VARNISHES	ALIPHETIC 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 kind of alkyd resins including modified types such as styrenated alkyd, chlorinated rubber.
- b) Binder containing chlorine such as polyvinyl chloride, its copolymers & post – chlorinated products, as well as chlorinated polyurethane.
- c) Curable Epoxy coating including solvent free system.
- d) Epoxy Ester.
- e) Tar or Bitumen and their combinations.
- f) Two – component polyurethane system.

ADVANTAGES: -

FYNOL – G

- Shows good thixotropic, thickening and antissettling effect.
- Promotes pigment and filler suspension.
- Controls flow and levelling.
- Controls liquid penetration into porous surfaces.
- Provides sag slump Control.
- Provides excellent package stability.
- Does not react with Pigments OR Binders.
- Is easy to disperse.
- Reduction of sagging and dripping.
- Application of pigment floating, flooding and settling.
- Flow improvement.
