



RADIANT
CHEMICALS

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RHINAWAX - C

(Amide Wax for Non Aqueous Paints & Coatings)

PRODUCT SPECIFICATION

Air-Dry Paints And Varnishes :

- **Mirror-Backing Paints** : Upto ½% **RHINAWAX - C** powder incorporated with the pigment during grinding gives added moisture and salt spray resistance.
- **Flat Varnishes** : Incorporating ½% **RHINAWAX - C** powder in the paste grind with the regular flatting agent gives the varnish additional mar-resistance and prevents 'printing'. This is of particular interest for flat varnishes used for furniture articular interest for flat varnishes used for furniture finishes. **RHINAWAX - C** does not have a flatting effect by itself.
- **Printing Ink Varnishes** : ½% **RHINAWAX - C** powder prevents off-setting when incorporated during grinding.

Bake Finishes :

- **Finish Coats** : Mar-resistance is increased by the incorporation of ½% **RHINAWAX - C**. There is no adverse effect on the adhesion either to a base coat or to additional top-coats. In some instances, the addition of **RHINAWAX - C** permits a slight decrease in the amount of the melamine of urea used.
- **Lithographic Bake Varnishes** : Upto 2% **RHINAWAX - C** improves mar-resistance and acts as a lubricant for further metal forming operations. Although there is no loss of adhesion to the base coat at the higher concentrations of **RHINAWAX - C** top coating over this finish would require a reduction of **RHINAWAX - C** to about ½



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Phenol Formaldehyde Dispersion Resin Primers :

These primers containing maleic, maleic or phthalic resins, with free acid, have increased water and salt spray resistance as well as improved immersion resistance when upto 2% **RHINAWAX - C** is added. The presence of the above mentioned acidic resins permits the use of up to 2% **RHINAWAX - C** without loss of adhesion to metal base or of the top-coat to the primer.

Lacquers :

- **Sanding Sealers: RHINAWAX - C**, used in amounts varying from ½% to 5% improves the sanding characteristics of sanding sealers without reducing the integrity of the lacquer film. It also prevents this undercoat from being “lifted” by subsequent topcoats. **RHINAWAX - C** also prevents sanding papers from clogging.
- **Furniture Finish Flattening Agent** : The use of about 1% **RHINAWAX - C** in top-coat lacquers gives good transparency and optical flatness for transparent flat finishes. There is no settling seeding or flocculation as with most other flattening agents and although the solution is slightly cloudy, the finish is clear. **RHINAWAX - C** is also a good suspending agent for other flattening agents.

Methods Of Incorporating RHINAWAX - C Into Lacquer Sealers &Top Coats:

- **Hot Solvent Method** : **RHINAWAX - C** are dissolved in hot toluol which is added with rapid agitation to the nitrocellulose, wetted with cold toluol. The lacquer is then formulated further by addition of the regular plasticizers, solvents etc.



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Dispersion Method : **RHINAWAX - C** powder is added to the nitrocellulose alcohol solution which may be further wetted with a diluent. After through high speed mixing, the regular plasticizers and solvents are added with rapid agitation. This method of addition gives a shearing action, which disperses the **RHINAWAX - C** thoroughly in the lacquer.

Grind Method : **RHINAWAX - C** powder may be dispersed into the lacquer by the usual mill grinding techniques used with flattening agents and pigments. It can also be dispersed into the lacquer on a two or three roll mill in the presence of plasticizer. This latter method has been used with success for incorporating small amounts of **RHINAWAX - C** powder into such finishes as paper lacquers for slip effect, anti-mar etc.

Incorporation Of RHINAWAX - C Powder Into Solvents

RHINAWAX - C is often introduced into plastic compositions by means of a solvent carrier. **RHINAWAX - C** powder is then used in the form of a suspension. When **RHINAWAX - C** powder is stirred directly into the solvent the particles will often agglomerate and when this occurs, the wax will ball-up on the surface. To overcome this difficulty, it is suggested that the wax be pre-wetted with anhydrous (99%) isopropanol.

RHINAWAX - C behaves differently with various types of solvents Particular difficulty is encountered with toluol, xylol and other aromatics. Possibly because there is a degree of solubility of such solvents in the wax, or a surface absorption of the solvent on the wax, there is a tendency to form gels, which may occlude air. This may or may not be objectionable for further function, but when such objection is present, it is best to prevent the formation of the gel by change of procedure.



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The use of a ball-mill is then indicated in introducing the **RHINAWAX - C** powder into the solvent. Since internal friction will cause a sufficient rise in temperature to produce a gel, precautions must be taken to keep the temperature down. This can be accomplished by starting the operation with only half the solvent and, at times intervals, adding the balance of the solvent.

The desired concentration of the wax suspension can be determined by experiment, but it is suggested that a 10% to 15% concentration is about the best.

In ball-milling operations, a pre-wet with anhydrous (99%) isopropanol can help. Also in damp, humid weather, the electrostatic charges that may develop on the surface of wax particles may hold condensed moisture, which will prevent proper incorporation of the wax into the solvent. If pre-wetting does not give the desired end result, it is suggested that a simple drying operation be used to drive off the moisture. However, this is seldom necessary.

RHINAWAX - C Aqueous Dispersion Technique

<u>FORMULATION: -</u>	<u>%</u>
1. RHINAWAX - C POWDER	32.00
2. OLEIC ACID	1.60
3. AMMONIA (28%)	1.12
4. WATER	62.28
5. ISOPROPANOL (99%)	<u>3.00</u>
	<u>100.00</u>

Procedure : -

The water is heated to 70°C and held there with agitation. The Oleic Acid, ammonia, isopropanol and **RHINAWAX - C** powder is now added in that order as rapidly as



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possible, agitating enough to get efficient dispersion without forming excessive foam. As soon as all the ingredients have been added, the kettle cover is put on to prevent loss of volatiles and the batch is cooled to 50°C. With continued agitation to give a smooth consistency. A paddle is used to mix in any powder clinging to the sides of the kettle.

The material is unloaded carefully, so as to minimize foam, into open head unlined steel drums through several layers of cheesecloth and allowed to stand for at least one day.

Any crust of foam, which remains on the surface, is subsequently skimmed off.

ANALYSIS: -

Kettle test : Total solids : A 10.0 gm. Sample is heated carefully in a tared 125 ml. beaker on a hot plate (110-160°C). Until all volatiles have been evaporated off and the remaining solids are weighted by difference. Specifications 33% min.

Stock Sample Test : **Total Solids** : **As above.**

pH of a 10% solution : Specification 9.5 to 10.0

Dispersion may be made with RHINAWAX - C by first wetting down the Wax with some of the isopropanol.

If the dispersion is insufficiently stable, it can usually be improved by the addition of more ammonia.