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"Dutch Boy"
PLASTICIZER
NL F-21

*A New General Purpose Vinyl Plasticizer
With Unusually Low Volatility*



DUTCH BOY CHEMICALS

A Product Development of
NATIONAL LEAD COMPANY

J. 69-54

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NLI 115484

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"Dutch Boy" PLASTICIZER NL F-21

"DUTCH BOY" NL F-21 is a plasticizer for vinyl resins. It is a clear, light colored liquid, miscible with most organic liquids. In vinyl compounds, it can have efficient plasticizing action with low volatility and good heat and light stability.

Table of Properties

Form	liquid
Color (ASTM)	20
Odor	weak
Specific Gravity (25°C, 25°C)	0.985
Flash Point (°C)	22.2
Boiling Pt. at 1 mm. Hg.	60°C
Refractive Index (25°C)	1.398
Visk. Poise (25°C)	0.03
Free Point (°C)	240
Viscosity, centipoise (25°C)	65.2
Weight per gallon	8.2 lbs.

Application of NL F-21 in Vinyls

The principal merit of NL F-21 is its ability to reduce volatility of the plasticizer system without sacrifice of low temperature flexibility, softness or hard of the finished product. When used at the level of 20-25% of the plasticizer mix, NL F-21 accomplishes this improvement in properties without appreciable increase in raw material cost. It is normally used as a replacement with the common primary plasticizers, such as NL 1-20 (di-2-ethylhexyl phthalate) and NL 1-30 (dioctyl phthalate). The value of using NL F-21 is instantly ap-

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parent when considered in terms of reduced loss of valuable plasticizer by volatilization during processing, and of retention of flexibility during use of the finished product.

Uses of NL F-21

Automotive Film and Sheetings—NL F-21 is unequalled in the plasticizer field as an economic means of contributing permanent flexibility to vinyl plastic films while retaining good low temperature properties. It is ideal for use in films which economically is fabricated into raincoats, ponchos, camouflage cloths, ground cloths and "plyco" covers for automobiles. In all these applications, NL F-21 secures satisfactory flexibility in cold weather, and retention of properties during prolonged machine use. Its low light stability is as important as its low volatility in achieving this desirable outdoor performance.

Reduction of plasticizer loss by volatilization during extruding is a very important consideration in the manufacture of vinyl film, due to the large exposed surface area and the tendency toward use of higher processing temperatures. Reduction of this loss through use of 20-50% of NL F-21 will prove to be a very good investment, especially since other properties of the film will be equal or better.

NL F-21 makes an important contribution to heavy gauge sheeting for upholstery use by markedly increasing plasticizer permanence without detriment to low temperature flexibility. This is especially important in upholstery designed for back, seat and trunk use, where flexibility retention over long periods is mandatory.

Extended Products—NL F-21 imparts the same advantage of low volatility, without sacrifice in low temperature flexibility, to extruded tubing and tubing. This combination of properties may be used to advantage in garden hose, automotive tubing, cable jacketing and other products used outdoors.

Plastics—NL F-21 may be used to advantage to contribute permanence and low temperature flexibility retention to plastics and organics for cloth and metal coatings. It is also suggested for use in plastics for cloth molding of vinyl coverings and other real products used outdoors.

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