

KETJENFLEX MH in Nail lacquers

Nail lacquers form the largest group of manicure preparations worldwide. Being highly sophisticated formulations, the applied lacquers need to form a continuous film which is durable as well as being aesthetically pleasing.

Nitrocellulose (NC) based resins are widely used in nail lacquers. They are appreciated for their natural look, quick dry, ease of use and overall reasonable cost performance ratio. The strength and durability of the film formed is largely improved by the use of co or modifying resins. The most widely used type of modifying resin in nail enamels are sulfonamide based resins such as **KETJENFLEX MH**, which provides excellent color depth, gloss, flow and adhesion as well as good resistance. Addition of this resin permits an increase in solids without appreciably increasing lacquer viscosity.



Due to their high glass transition temperature Nitrocellulose resins need to be formulated using specific film forming agents and/or plasticizers. Plasticizers lower the glass transition temperature ensuring proper film formation.

In Table 1 below there are 3 examples of nail lacquers based on Nitrocellulose and **KETJENFLEX MH**. **KETJENFLEX 8** plasticizer is used to keep up the aesthetics of the film. **KETJENFLEX 12** is a common cost effective plasticizer for Nitrocellulose formulations. Typically these nail lacquers last 7 to 10 days nail wearing.

Table 1 Nail polish Guide Formulations				
	Classic Enamel	Clear Coat	Metallic	Remark
Component	wt%	wt%	wt%	
Nitrocellulose (75% in Eth.)	14.7	10.0	3.0	Resin
KETJENFLEX MH*	9.0	5.0	3.7	Film forming co- resin
KETJENFLEX 8	7.5		9.5	Exquisite plasticizer
KETJENFLEX 12		4.0	0.8	Plasticizer for NC
Butyl acetate	24.0	27.5	30.6	
Isopropyl alcohol	5.0	6.0	2.4	
Ethyl Acetate	21.0	17.5	8.5	
Propyl acetate	15.2			
Toluene		28.5	31.9	
Camphor		1.5	0.5	
Bentone 27	1.0		0.1	Anti-settling agent
Benzophenone-1	0.1			
Etocrylene	0.5			
Aluminium powder			9.0	Metallic pigment
Colorant	2.0			Color
Total	100	100	100	

*KETJENFLEX MH is a paste (mp: 60°C). KETJENFLEX MS-80 is the exact same product made available as 80% in BuAc.

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