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PVC HEAT STABILIZERS

## **APPLICATION GUIDE FOR MLA GROUP'S PRODUCTS**

Application	Product	FOR MLA GROUP'S PR	Grades Used in Decreasing Order
industry			of Price
Rubber products / Tyres / tubes / footwear etc	Precipitated silica	As a reinforcing agent to increase the strength	NK-3/NK-2/NK-5/NK-70
	China clay	As a non – reinforcing filler to decrease the cost	Tulsi052/3star/2star
	Aluminium silicate	As a semi-reinforcing filler to increase strength (less than silica) and make production faster due to faster curing rate	NK-20HS / Super Special (12.5 Kgs) /Commercial super(20Kgs) / General grade(25Kgs).
	Zinc stearate	As a lubricant and curative in EVA products and as a anti- tack and mould release agent in natural rubber	DLI / LM / MFLOW10 / MFLOW20
	Talc / Barytes	As fillers to reduce cost	Talc5SSW / 5SW, Barytes 1 <sup>st</sup> grade/ Off colour.
EVA footwear / Raxeen / Leathercloth / upholstery	ADC ( azodica- rbonamide ) blowing or foaming agent	In EVA footwear to give sponge effect In raxeens / leathercloth / upholstery etc to give sponge / cushion effect by releasing gas during processing which gets trapped in the polymer creating foam / sponge	F2 for Eva & PVC. AC 5145/ AC 5200 & NC 7500 for Foam Board. AC and NC are used in combination.
	ZINC OXIDE ACTIVE	As an activator for rubber vulcanization/curing Tranparent rubber	T-150 / AH90 / RT70 / RT2 / RT4
Paints	Levigated china clay / kaolin	As a white filler to reduce cost, our TUSLI range of clays is the whitest clay / kaolin worldwide	Tulsi 053 / Tulsi 052/ 3Star / 2Star.
	Talc /	As fillers to reduce cost	Talc 5SSW /5SW
	Barytes /	We produce very finely	Calcite-Microcal WPS
	Calcite /	ground minerals with	Dolomite-Microcal ECO

	Dolomite	controlled particle size	
	Calcined clay	As a partial substitute of costly white pigment titanium dioxide	Tulsi 069HT Tulsi 555.
	Aluminium Silicate/ sodium aluminium silicate	As a partial substitute of costly white pigment titanium dioxide. However this product gives better whiteness than calcined clay and also matting effect additionally	NK-20HS ( can replace 30 % approx in matt emulsion paints )
	Zinc stearate	As a thickener / body filler in "sanding sealers "which are special type of putty made for providing finish to wooden furniture etc.	DLI-SS DLI-SS15 MFLOW 30 SS MFLOW 50 SS
	Aluminium Stearate	To provide anti-settling properties in solvent based paints so that fillers do not settle down at the bottom of the container during storage	Super (P) General (G) High Alumina (T).
	Calcium Stearate	To provide water repellance to cement paints	Cast- D CS-MFLOW-30 CS-MFLOW 50.
	Precipitated Silica	As a matting agent to reduce the gloss	NK-370 HS / NK- 3HS.
Plastics ( filler masterbatches , colour masterbatches	Zinc stearate	In plastic compounds as a lubricant, dispersing agent and release agent ( non PVC )	DLI / LM / MFLOW10/20/30
, compounds, plastisols etc), fittings, film, sheets, engineering plastics etc	Calcium stearate	In PVC plastic compounds as a lubricant In big resin manufacturing petrochemical plants making HDPE / LDPE / PVC etc as a acid scavenger and lubricant	For Petro DLI – TS / DLI For compounding – DLI / D/ MFLOW 10/20/30.
	Talc Calcite/ dolomite / clay	As a filler in transparent PP compounds to reduce cost. In different types of compounds as fillers to reduce cost	Talc 5SSW / 5SW Calcite – WPS Dolomite – ECO Clay – 053 / 052

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	Precipitated silica	As a matting agent, anti- sticking agent and strength improver	NK-3HS/NK-30ABL
	Calcium zinc non toxic stabilizer	For heat stability in processing of compounds made for cable and pipe industry etc	Cable. For 70 to 90 degree C – CZ-835 For 90 to 105 degree C – CZ-55 For 105 to 125 degree C- CZ-75 For Pipe : CZ-RP-40 For Transparent & higher stability – CZ-TRP-1 Other grades available on request.
	Aluminium stearate	Used as a lubricant in polyamide / nylon compounding	Aluminium Stearate P/G/T
	Magnesium stearate	Used in ABS / PS and Polyamide compoundings	TCH / ECO
	Barium Stearate	Used as a stabilizer in transparent compounds and for scratch resistance in PVC compounds	Barium Stearate.
PVC pipes ( rigid / unplasticized type / cables etc )	TBLS DBLS LS	Tribasic lead sulphate Dibasic lead stearate Lead stearate Above are used as heat stabilizers while processing of PVC items so that they do not get burnt / degraded due to high temperatures used in processing	TBLS / TBLS – A DBLS ( 1st and 2nd grade ) LS ( 1st and 2nd grade )
	One packs	These are combinations of above and other additives such as anti-oxidants all put together in one product which provides ease of handling , function is same as above, to provide heat stability to PVC	Powders: PP – 4/3/2/1. Flakes: LPF 4NI/ 35NI/ 318R/ 15AG/ 15/ 8
	PE Wax	Flakes used in rigid PVC pipes with excellent results Used as a lubricant / release agent / anti slip agent in masterbatches and other engineering plastics	PE-7

	EBS / amide	Used as a bigh temperature	EBS
	wax	Used as a high temperature lubricant and release agent in engineering plastics	EBS
Cosmetics/ Toothpaste	levigated clay / kaolin / talc	As a filler to reduce cost in face packs, ointments, compacts, lipsticks, talcum powder etc	Clay : Tulsi 061 /060 /053 /052 Talc : 5SSW /5SW
	Zinc stearate	As a filler / lubricant / water repellent / anti fungal in talcum powder	DLI / LM
	Precipitated silica	As a free flow provider in talcum powder and other powder cosmetics. As a thickener and polishing agent in tooth paste	NK-3HS NK-4HS Powder & Granules.
	Sodium stearate	In gels of all kinds used as base in cosmetics formulations	NS
Detergents	Precipitated Silica	As a free flowing and anti- caking agent, it is used in premium grade detergents which have high content of liquid acid slurry, silica absorbs that and prevents cake formation and coats the detergent particles and keeps it free flowing. Our UNISIL NK-7 having 500 % absorption capacity is double than any other silica and we are the only mfrs of this product in the world	NK-7 NK 4HS NK 1 NK70 NK50
	Levigated clay / talcum / calcite / dolomite	As a filler to reduce cost	3-Star / 2-Star.
Pharmaceutic als	Levigated clay / kaolin	As an essential part of anti- diarroheal preparation	Tulsi- 077 / Tulsi-053
	Magnesium stearate	Used as a lubricant and mould release in tabletting	IP/ BP/ USP grades
	Calcium stearate/ Sodium stearate/ zinc stearate	Used for lubrication, shining, gel formation and many other purposes	IP/ BP/ USPgrades

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	Talc	Used as inert filler	IP/ BP/ USP grades
	Kaolin ( heavy/ light )	Used in anti diarrhoeal forulations and as a filler	IP/ BP/ USPgrades
	Hydrated calcium silicate	Used as an absorbent and free flow agent	IP/ BP/ USPgrades
	Zinc oxide	For its zinc content and as an antifungal in ointments	IP/ BP/ USPgrades
Pesticides	Precipitated silica	As a carrying agent to absorb the liquid medicine in the pesticide and convert it to powder form	NK-7 / NK4HS / NK-1 / NK-70.
	Hydrated calcium silicate	Same as above but it has alkaline pH	HCS
	Levigated clay / kaolin	As a filler to reduce cost. Our tusli grade being very pure chemically does not react with the medicine which is very costly and gives very good shelf life / storage life	Tulsi 052 /051/ 050/ 5-Star acidic/ 3- Star/ 2-Star.
Chemicals	Precipitated silica	To absorb the liquids and give free flow to any kind of powder preparation	NK-7 / NK4HS / NK-1 / NK-70
		To convert liquid to powder like certain anti-oxidants used in rubber	NK7 HCS NK-4HS
	China clay / talc etc	As fillers to reduce cost	Clay – Tulsi 052/ 051/ 050/ 5-Star acidic/ 3-Star/ 2-Star Talc – 5SSW /5SW
Table salt	Precipitated silica	Added 0.2 % -0.5 % to give free flow effect	NK – 7 NK – 4HS
Construction chemicals	Zinc stearate, calcium stearate, aluminium stearate, other stearates	As constituents in construction chemicals for imparting water proofing effect or for enhanced flow/ lubrication of concerete As dispersions to increase flowability of RMC	Zinc Stearates – MFLOW-30-SS Calcium Stearates – MFLOW-30 / MFLOW-50. Aluminium Stearate - T

	Microsilica pozzolanic filler	To increase the strength, workability, chemical resistance and reduce permeability of high strength concrete used in tunnels, bridges, high rise buildings etc	NK-55 MS : activateed micronized rich husk ash NK-32 MS : activated pozzolanic filler having high activity index
Ceramics	Levigated white clay	Used in glassy topcoat of wall tile for glazing as a filler to reduce cost and to aid fusion	TULSI 053 spl ( 94-96 % whiteness) TULSI 053 ( 92-93 % whiteness ) TUISI 052 ( 90-92 % whiteness )

(**Product range** : Precipitated Silica, Metallic Stearates (Zinc / Calcium / Aluminium / Barium / Cadmium / Magnesium), Micronized White China Clays, Talc, PVC Lead Stabilizers, CA-ZN Stabilizers, PE Wax, Plastic Lubricants, Zinc Oxide Active, ADC Foaming Agents etc)