

K.NOX 1098

Phenolic Primary Antioxidant for polyamides

CHEMICAL NAME

N,N'-hexane-1,6-diylbis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionamide] or N,N'-hexamethylene-bis-(3,5-di-tert-butyl-4-hydroxyphenyl)propionamide)

CAS NUMBER

23128-74-7

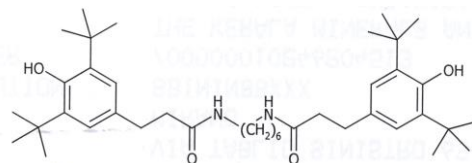
EINECS NUMBER

245-442-7

MOLECULAR FORMULA

C₄₀H₆₄N₂O₄

STRUCTURE



MOLECULAR WEIGHT

637 Dalton

CHARACTERIZATION

K.NOX 1098 - a sterically hindered phenolic antioxidant – acts as Radical Scavenger or, as commonly said, as Antioxidant for organic substrates such as thermoplastic resins, synthetic fibers, elastomers, hot-melt adhesives, but it is especially suited for the stabilization of aliphatic polyamide resins (PA6, PA66, PA12, etc), for which **K.NOX 1098** shows high compatibility. This fact is likely due to its $-(C=O)-NH-$ imide groups which “mimic” the same existing into the PA resins.

K.NOX 1098 protects polyamide molded parts, fibers, films and HMA against the thermo-oxidative degradation during processing and, above all, during long-term ageing under 150°C, avoiding the consequent loss of their mechanical and aesthetic properties. However, for service life above 150°C the traditional copper/iodide stabilizer systems show the best performance, but leaching in contact with water and heavy discoloration may occur. In all other cases **K.NOX 1098** remains the first choice non-discolouring protector for PA resins having good compatibility, high resistance to extraction and extremely low volatility.

CHEMICAL-PHYSICAL PROPERTIES

Appearance	White, tasteless free-flowing powder
Odour	odourless
Purity	≥ 98%
Melting range (capillary)	156 – 161°C
Volatiles (2h @ 105°C)	≤ 0,5%
Ash	≤ 0.1%
Transmittance % (solution of 10 g /100 ml toluene, 1 cm cell)	
@ 425 nm	≥ 97%
@ 500 nm	≥ 99%

Specific gravity @ 20°C	1.04 g/cm ³
Flash point	282 °C
Decomposition temperature	> 350°C
Volatility, % weight loss (TGA-analysis, heating rate 20°C/min in air)	
	1% at 280°C
	10% at 340°C
Solubility @ 20°C (g/100 ml solvent)	
Methylene chloride	63
Chloroform	6
Acetone	2
Toluene	60
Ethyl acetate	1.2
Hexane	0.01
Methanol	6
Water	0.01
80% Caprolactam+20% water	3

PACKAGING

K.NOX 1098 is supplied in 20/25 kg net plastic bag into a cardboard box.

TOXICOLOGY

Acute oral toxicity (LD50 rat) > 2000 mg/kg
 Acute Skin toxicity (LD50 rat) > 2000 mg/kg

FOOD CLEARANCE STATUS

K.NOX 1098 is approved by the EC for use in all polymers coming in contact with food with the indicated limitation (see Italian G.UN.125/31.05.2003, NoPM/Ref.59120, LMS 45 mg/kg).

STORAGE / HANDLING

K.NOX 1098 must be stored in a dry and ventilated cool place, in securely closed drums. Maximum recommended storage time under suitable condition (dry and cool): 5 years. Protect eyes and face and use gloves when handling the product. For detailed information on toxicity, storage and handling please refer to the relevant Material Safety Data Sheet.

APPLICATION

K.NOX 1098 is especially recommended for use in all PA resins compounding for injection molding, extrusion (fibers and films) and in HM adhesives preparation.

It can be used along with other additives like phosphite and thioester peroxide decomposers (as K.NOX 168 and K.NOX DSTDP respectively) and light stabilizer (UVAS as K.SORB 234, HALS as K.SORB 770 or 944).

K.NOX 1098 is suggested as well in POM, TPU, saturated elastomers.

ADDITION LEVELS

K.NOX 1098 is usually used in PA compounding (and also for the other above indicated polymers) at 0,25 – 1,00%., depending on type of polymer, presence of costabilizers and service life required.

The information submitted in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application, this data does not relieve processors from the responsibility of carrying out their own tests and experiments. Neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom K Chimica supply their own products to ensure that any proprietary rights or patents and existing laws and legislation are observed. The product has not been tested for, and is therefore not recommended for, uses for which prolonged contact with mucous membranes, abraded skin, or blood is intended; or for uses for which implantation within the human body is intended.