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K.NOX 1010

HMW Phenolic Primary Antioxidant

(P) = POLVERE
(G) = GRANULARE

Technical Data Sheet

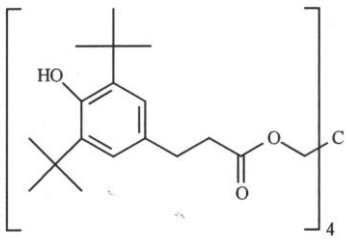
CHEMICAL NAME Pentaerythritol Tetrakis[3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate] or Tetrakis[methylene(3,5-di-tert-butyl-4-hydroxyhydrocinnamate)]methane

CAS NUMBER 6683-19-8

EINECS NUMBER 229-722-6

MOLECULAR FORMULA $C_{73}H_{108}O_{12}$

STRUCTURE



MOLECULAR WEIGHT 1178 Dalton

CHARACTERIZATION

K.NOX 1010 – a H.M.W. sterically hindered phenolic compound – acts as Radical Scavenger or, as commonly said, as Antioxidant for organic substrates such as thermoplastic resins, synthetic fibers, elastomers, coatings, adhesives, lubricants and waxes.

It protects these substrates against the thermo-oxidative degradation during processing and, above all, during long-term ageing, avoiding the consequent loss of their mechanical and aesthetic properties.

K.NOX 1010 is the first choice non-discolouring protector, having good compatibility with all polymers, high resistance to extraction and low volatility; it is odourless, tasteless and is approved in many Countries for polymers used in food contact application (information available upon request).

The efficiency of **K.NOX 1010** is enhanced by combination with secondary stabilizers (thioethers, phosphites, phosphonites), metal deactivators, acid neutralizers, epoxy resin (as filler surface modifier) in filled compounds.

Technical Data Sheet

PHYSICAL PROPERTIES

Appearance	White, odourless, tasteless free- flowing powder
Purity (HPLC)	≥ 98%
Melting range (capillary)	110-125°C
Volatiles (2h @ 105°C)	≤ 0,5%
Ash	≤ 0.1 %
Transmittance % (solution of 10 g /100 ml toluene, 1 cm cell)	
@ 425 nm	≥ 95%
@ 500 nm	≥ 97%
Specific gravity @ 20°C	1.15 g/cm3
Flash point	297 °C
Decomposition temperature	> 350°C
Solubility @ 20°C (g/100ml solvent)	
Methylene chloride	63
Chloroform	71
Acetone	47
Toluene	60
Ethyl acetate	47
Hexane	0.3
Methanol	0.9
Ethanol	1.5
Water	< 0.01

PACKAGING

K.NOX 1010 is supplied in 25 kg net plastic bags into a cardboard box.

TOXICOLOGY

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

STORAGE/HANDLING

K.NOX 1010 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 1010 is especially recommended for use in all types of polyolefines (omo and copolymers).
Its use is recommended as well in POM, PA, PUR, PES, PVC, HIPS, ABS, elastomers (IIR, SBS/SIS, latex, EPDM).
K.NOX 1010 is also largely used:
- In synthetic lubrificants for high temperature application
- In hot melt and solvent or water based adhesives
- In coatings against over bake yellowing.

ADDITION LEVELS

Taking into account the type of polymer, the type and amount of pigments, fillers, synergistic additives and the expected service life, **K.NOX 1010** should be used at 0.10 to 1.00 phr.
Extensive performance data of **K.NOX 1010** in various polymers and specific application areas are available upon request.