

Technical Data Sheet

Rev. 2 - Data rev. 02/2015

K.SORB 622

High Molecular Weight Hindered Amine Light (and thermal) Stabilizer for polymers

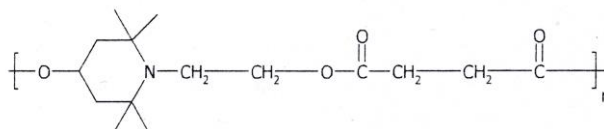
CHEMICAL NAME

Butanedioic acid, dimethylester, polymer with 4-hydroxy-2,2,6,6-tetramethyl-1-piperidine ethanol

CAS NUMBER

65447-77-0

STRUCTURE



MOLECULAR WEIGHT

$M_n=3100-4000$

CHARACTERIZATION

K.SORB 622, is a "N-R" type HMW HALS which protects polymeric resins against the photo-oxidative degradation induced by the solar UV radiation. Due to its high molecular weight, **K.SORB 622**, is the light stabilizer of choice for all applications requiring low volatility and minimal migration.

Moreover, **K.SORB 622** contributes significantly (along with the conventional Phenolic AOXS) to long-thermal stabilization of polyolefins and tackifier resins, especially in presence of carbon black, at temperatures below 110°C.

K.SORB 622 's performance is highly superior to that of the classic UV absorbers. It is not influenced by pigments or fillers (if free of transition metals ions) and may be further enhanced by the synergistic combination with UV absorbers themselves (like K.SORB 81, 326, 234) and organophosphites (like K.NOX 168).

In addition **K.SORB 622** shows a powerful synergistic effect in combination not only with LMW HALS (like K.SORB 770) but, astonishingly, also with other HMW HALS (like K.SORB 944)

K.SORB 622 owns an inherent basicity lower than that of "N-H" and "N-CH₃" type HALS, however it does not own that of "N-OR" type HALS. Therefore, even if at some minor extent, K.SORB 622 too could be negatively influenced by compounds containing sulphur or halogens (like thioesters, halogenated FR additives or pigments) and by acid rains or substances. Such influence on processing, color and service life must be determined by preliminary lab tests.

**PHYSICAL
PROPERTIES**

Appearance	White to slightly yellow powder or small granules
Melting range	50° - 70°C
Volatiles (2h @ 105°C)	≤ 0.5 %
Ash	≤ 0.1 %
Transmittance % (solution of 10 g /100 ml toluene, 1 cm cell)	
@ 425 nm	≥ 97.0 %
@ 500 nm	≥ 98.0 %
Specific gravity @ 20°C	1.22 g/cm ³
Vapour pressure @ 20°C	2.5 x 10 ⁻⁶ Pa
Flash point (DIN 51376)	> 250 °C
Volatility, % weight loss (TGA-analysis, heating rate 20°C/min in air)	
	~ 1% at 275°C
	~ 8% at 325°C
Solubility @ 20°C (g/100 ml solvent)	
Methylene Chloride	>40
Toluene	15
Chloroform	> 40
Methanol	0.05
Ethanol	0.08
Ethyl acetate	3
Acetone	4
Hexane	< 0.01
Water	< 0.01

PACKAGING

K.SORB 622 is supplied in 25 kg cardboard drums with inner PE bag

TOXICOLOGY

Acute oral toxicity (LD50 rat)	> 2000 mg/Kg
Skin irritation (rabbit)	Non-irritant
Eye irritation (rabbit)	Non-irritant

FOOD CLEARANCE

K.SORB 622 is approved by E.C. for use in all polymers coming into contact with food (see Directive 2002/72/CE, N.Rif.60800, LMS=30 mg/kg). For other countries information are available upon request.

STATUS

**STORAGE -
HANDLING**

K.SORB 622 must be stored in a dry and ventilated cool place, in securely closed drums. Maximum recommended Storage time under suitable condition (dry and cool): 2 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.SORB 622 is highly effective for use, particularly in pigmented systems, in polyolefins (PP, HDPE/LDPE/LLDPE, EVA, TPO) and also in POM, PA, PMMA, PU, TS powders for coatings, UPES, plasticized PVC, TPE (SBS, SIS), HM adhesives, (PU, PET, PA) fibers.

ADDITION LEVELS

Taking into account the type of polymer, the type and amount of pigments, fillers, synergistic additives and the expected service life, **K.SORB 622** should be used at 0,15 up 1%.
Extensive performance data of **K.SORB 622** in various polymers and specific application areas are available upon request.

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.