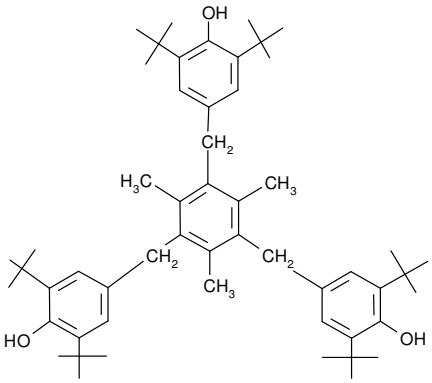
Edition 2/2

ALVINOX 100

Antioxidant

Chemical and physical characteristics(*)



Chemical Name	Phenol, 4,4',4" -[(2,4,6,-trimethyl-1,3,5-benzenetriyl)tris-(methylene)]tris 2,6-bis(1,1-dimethylethyl)-
Appearance	white powder
CAS #	1709-70-2
EINECS	216-971-0
Molecular Weight	775.2
Chemical Formula	$C_{54}H_{78}O_3$
Melting Point (°C)	240-245
Bulk Density (g/cc)	0.40-0.50
TGA, in N_2 at 20°C/min.	1% Wt. Loss 296°C 2% Wt. Loss 310°C 10% Wt. Loss 346°C
TGA, in Air at 20°C/min.	1% Wt. Loss 291°C 2% Wt. Loss 304°C 10% Wt. Loss 337°C
Solubility at 20°C (g/100 ml)	
Acetone	20
Methanol	0.15
Ethyl Acetate	33
n-Hexane	1.5
Toluene	36
Methylene Chloride	47
Water	0

(*)Typical values not qualified for quality control purpose

Properties

Alvinox 100 is highly efficient primary antioxidant for polymers. Its chemical structure includes three sterically hindered phenolic groups. It functions mainly as "radical scavenger"; it reacts efficiently with peroxy radicals, thus slowing down the chain reaction process which facilitates thermal oxidation.
Alvinox 100 either alone or combined with other antioxidants (commercialized under the trade name Alvipack) is highly efficient in a wide range of polymers such as:

- polyolefins and olefin copolymers (PP, HDPE, LDPE, LLDPE, EVA)
- polyamides
- polycarbonates
- styrenics (PS, ABS, IPS)
- adhesives
- elastomers

Applications

Alvinox 100 offers the following performance advantages:

- high long term heat stabilization
- low volatility and high thermal stability in the range of temperatures employed during processing and service life of polymers
- high compatibility with a wide range of polymers
- compatibility and synergism with a broad range of additives used in polymer formulations (in particular with secondary antioxidants);
- very low extractability when polymers are in contact with water as in water pipelines
- good dielectric properties in protection of electric and telecommunication cables

It is recommended that any application should be thoroughly investigated according to the specific conditions of use.
The concentration of Alvinox 100 to be used depends on polymer and processing conditions, on the required

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service life and formulation (presence of additives, pigments, fillers, etc.).

Usual additions level of Alvinox 100 are :

- in polypropylene (PP) for films and tapes the level is between 0.1 to 0.3% with synergistic combinations with secondary antioxidants such as Alvinox P
- in low density polyethylene (LDPE) the level is 0.025 to 0.10% in combination with a suitable metal deactivator
- in high density polyethylene (HDPE) the level is 0.2 to 0.4%

Toxicological information

LD_{50} (oral, rat) > 2000 mg/Kg
"Limit dose study with ALVINOX® 100"- June 2000
TNO Nutrition and Food Research, Zeist , The Netherlands.

Food contact applications

Alvinox 100 is regulated for indirect food contact applications. Specific information can be provided on request.

Transport, storage and handling

Labeling: product not classified as hazardous according to international transport regulation. May cause long-term adverse effects in the aquatic environment. Do not breathe dust and avoid contact with skin, eyes and mucous membranes. In case of contact, wash immediately with plenty of water. Store in the original closed container in a dry cool place. Avoid dust formation.

For further information please refer to safety data sheet.

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