REVONOX® 420

PRODUCT DATASHEET

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Introduction

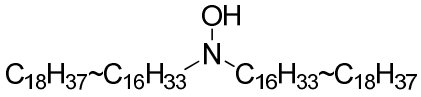
Revonox® 420 is a hydroxylamine based, phenol-free antioxidant. It is a very powerful melt processing stabilizer with excellent color maintenance, high compatibility, low volatility and better storage stability at elevated temperature. Its outstanding performance over conventional hindered phenolic antioxidant systems is particularly pronounced in the inhibition of gas fading discoloration. Its performance can be further optimized when used in combination with phosphite type antioxidants. Revonox® 420 is especially suitable for the applications in polypropylene fiber, automotive TPO as well as polyolefins where low color and low gas fading discoloration are important.

Applications

Revonox® 420 is highly recommended for the use in conjunction with phosphate stabilizers such as Deox 68 and Deox 604. This combination can be applied as a high efficient melt processing stabilizer system in polypropylene fiber applications, automotive TPO. The use levels of Revonox® 420 range between 0.05% and 0.15% are recommended for protection. It depends on the substrate and performance requirements of the final application.

Chemical Information

Structure



Chemical Name

Oxidized bis(hydrogenated tallow alkyl) amines

CAS No.

143925-92-2

Molecular formula

$C_{36}H_{75}NO$

Molecular weight

538

Physical Data

Odor	:	Odorless
Specific gravity	:	0.95 @ 25 °C
Vapor pressure	:	1E-10 hPa @ 25 °C

Specification

Appearance	:	White free-flowing powder
Color (Yi)	:	12.0 max.
Melting point (DSC)	:	90 °C min.
Volatile	:	0.5% max.

Solubility (g in 100ml solvent @ 25 °C)

Heptane	:	< 0.1
Ethyl acetate	:	< 0.1
MEK	:	< 0.1
Toluene	:	< 0.1
Water	:	Insoluble

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Performance Data

- PP[a] Polymer Melt Flow Stability

Extrusion pass[b]	Control (MFI = 5.5)	Revonox® 420	Revonox® 420 / Deox 68[c]
1	9.78	6.66	6.43
2	16.60	8.68	7.90
3	27.20	11.39	10.47
4	42.80	16.06	14.84
5	-	19.45	18.22
ΔMFR[d]	33.02	12.79	11.79

a: Polymer: PP (homo, MFI = 5.5)

b: Processing condition: Multiple extrusion, twin screw extruder (Φ = 35 mm, L/D = 36)

c: 0.1 phr Revonox® 420 and 0.1 phr Deox 68

d: Melt flow rate is measured by weight every 10 minutes at 230 °C and 2.16 kg pressure

- PP[a] Polymer Color Stability[b]

0.1 phr Phenolic AO + 0.1 phr Deox 68

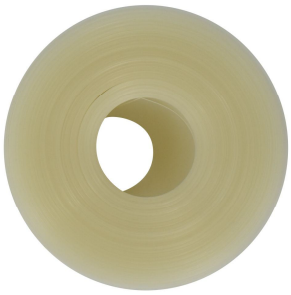
0.1 phr Revonox® 420 + 0.1 phr Deox 68

a: Polymer: PP (homo, MFI = 5.5)

b: Test condition: Oven ageing at 150 °C for 6 days in recirculation air oven

- BOPP Film Synergy Effect

1,000 ppm Revonox® 420 + Deox 10 + Deox 68



1,500 ppm Deox 10 + Deox 68