

Introduction

Revonox® 310 is a phenol-free anti-oxidant system composed of phosphate and dialkyl hydroxylamine. This synergistic anti-oxidant package is superb in protecting polymers from color change when exposed to heat, UV light, nitrogen oxides and gamma radiation. Unlike traditional antioxidant, it does not generate pink color nor deposit yellowing during processing and storage (see below example). In addition, it is FDA approved for indirect food contact.

Applications

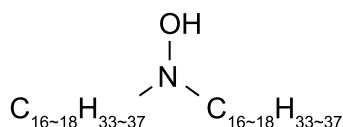
Due to Revonox® 310's superb performance on color maintenance regardless polymer type, it is highly recommended for applications where color performance is the most critical factor. Other than that, it is also recommended for the following applications:

1. PP fibers and non-woven for carpets and drapes
2. Bi-axial oriented polypropylene film (BOPP)
3. Thermoplastics olefins (TPO) molding for automobiles parts
4. Gas-assisted injection moldings
5. Systems require phenol-free
6. Long-term heat stability (at 100- 150 °C)
7. System exposure to gamma radiation.

Chemical Information

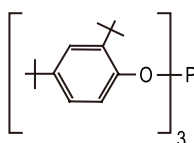
Structure

50% of Revonox 420



CAS No. 143925-92-2

50% of Deox 68



CAS No. 31570-04-4

Physical Data

Odor : Odorless
Bulk density : 0.4612 g/cm³
Specific gravity : 0.88 @ 20 °C

Specification

Appearance : White to off-white powder
Melting point : 85 °C min.
Volatile : 0.5% max.

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

Acetone : <0.5
Toluene : <15
Ethyl Acetate : < 2
Dichloromethane : <18
Hexane : < 5
Water : <0.01

Packaging

20 Kg net / Carton box

Performance Data

PP^a Polymer Melt Flow Stability

Extrusion pass ^b	1	2	3	4	5	ΔMFR ^c
Control (MFI = 5.5)	9.78	16.60	27.20	42.80	---	33.02
REVONOX 310	6.43	7.90	10.47	14.84	18.22	11.79

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

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

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

PP^a Polymer Color Stability



No stabilizer



Revonox 310

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

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