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Uvinul® 4050

Low molecular weight hindered amine light stabilizer (HALS)

Characterization

Uvinul 4050 is a low molecular weight hindered amine light stabilizer (HALS) for applications demanding particularly high light stability. It provides excellent light stability for thick sections but can also be used for articles with a high surface area such as films and tapes.

Chemical name

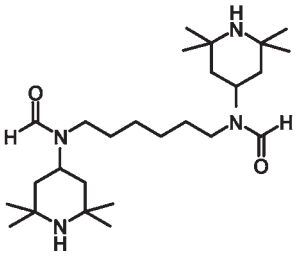
N,N'-bis(2,2,6,6-tetramethyl-4-piperidyl)-N,N'-diformylhexamethylenediamine

CAS number

124172-53-8

Structure

Uvinul 4050



Molecular weight

450 g/mol

Applications

Uvinul 4050 is recommended to be used in polystyrene, impact polystyrene, ABS, SAN, ASA, polypropylene, impact modified PP (TPO), EPDM, and in polyamides.

Due to its low volatility, Uvinul 4050 is unique for high temperature processes compared to other low molecular weight HALS

Features/benefits

Uvinul 4050 provides excellent light stability for thick sections and films in the recommended substrates. A special benefit of using Uvinul 4050 is the high light-stabilizing performance, particularly for styrenic polymers and PP to protect the surface. It has broad compatibility and can be easily dispersed. Uvinul 4050 can be used in plastic articles in contact with food.

Compared to UV absorbers, the low molecular weight HALS Uvinul 4050 is not dependent on the polymer's thickness. For this reason the use of Uvinul 4050 also provides good light stability in articles with a higher specific surface, e. g. films and tapes.

Uvinul 4050 can be used alone or combined with high molecular weight HALS, such as Chimassorb® or Uvinul HALS to achieve a synergistic performance.

Product forms

Code:	Uvinul 4050 FF
Appearance:	white to off white granules

Guidelines for use

The recommended concentrations range between 0.1 % and 0.5 %, depending on the substrate, processing conditions and application. The optimum level is substrate and application specific. Extensive performance data of Uvinul 4050 in various substrates and for various applications is available upon request.

Physical properties

Melting range	155 – 158 °C
Flashpoint	tbd
Specific gravity (25 °C)	1.08 g/cm^3
Vapor pressure (20 °C)	tbd Pa
Bulk density	Tbd g/l

Solubility (20 °C)	**% w/w**
Acetone	0.3
Chloroform	6.0
Ethyl acetate	0.3
n-Hexane	< 0.01
Methanol	11.0
Toluene	0.3
Water	0.5

Volatility	**Pure substance;**
Weight Loss (%)	**TGA, heating rate at 20 °C/min in air**
	Temperature °C
0	225
0	250
2	275
6.6	300

Handling & Safety

In accordance with good industrial practice, handle with care and avoid unnecessary personal contact. Avoid continuous or repetitive breathing of dust. Use only with adequate ventilation. Avoid contact with eyes. Avoid release to the environment. Avoid dust formation and ignition sources.

For more detailed information please refer to the material safety data sheet.

Note

November 2010

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