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# Irganox<sup>®</sup> 1098

## Phenolic primary antioxidant for processing and long-term thermal stabilization

### Characterization

Irganox 1098, a sterically hindered phenolic antioxidant, is an efficient, non-discoloring stabilizer for organic substrates such as plastics, synthetic fibers, adhesives, and elastomers, and is particularly effective in polyamide polymers and fibers.

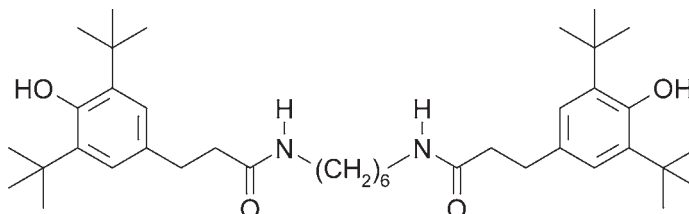
### Chemical name

N,N'-hexane-1,6-diylbis(3-(3,5-di-tert.-butyl-4-hydroxyphenyl)propionamide))

### CAS number

23128-74-7

### Chemical formula



### Molecular weight

637 g/mol

### Applications

Irganox 1098 is especially suited for the stabilization of polyamide molded parts, fibers, and films. Its use is also recommended in other polymers such as polyacetals, polyesters, polyurethanes, adhesives, elastomers as well as other organic substrates.

### Features/benefits

Irganox 1098 provides excellent processing and long-term thermal stability as well as excellent initial resin color. The product is superior to copper-based systems used as stabilizers for polyamides with respect to color and resistance to extraction. It has excellent compatibility with polyamides and other substrates and low volatility.

### Product forms

Irganox 1098  
Irganox 1098 ED

white to off-white powder  
white to off-white granules

**Guidelines for use**

Irganox 1098 is recommended for use in polyamide molded articles, fibers, and films at concentrations of 0.05 % – 1.0 % depending on the polymer type, method of incorporation, application, and degree of stability required. It is easily dispersed into the polymer by conventional extrusion compounding techniques.

The product may be incorporated during the polyamide polymerization at concentrations of 0.05 % – 0.2 % to provide protection of polymer color properties in subsequent fabrication, spinning, or finishing operations. When Irganox 1098 is incorporated prior to or during the polyamide polymerization, reaction conditions and chain terminator concentration may require adjustment to compensate for the presence of the antioxidant.

Suggested use concentrations for Irganox 1098 in polyacetals, polyesters, polyurethanes, saturated and unsaturated rubbers range from 0.05 % – 0.5 % depending on the substrate and the stability required.

The product can be used in combination with other additives, such as costabilizers (e. g. phosphites, thioethers, hydroxylamines), light stabilizers (e. g. UV absorbers, hindered amines), and other functional stabilizers. The effectiveness of blends of Irganox 1098 with Irgafos 168 (Irganox B 1171) is particularly noteworthy. Performance data for Irganox 1098 alone and in combination with other additives are available in a variety of substrates.

**Physical properties**

|                          |              |
|--------------------------|--------------|
| Melting range            | 156 – 161 °C |
| Flashpoint               | 282 °C       |
| Vapor pressure (20 °C)   | 1.3 E-12 Pa  |
| Specific gravity (20 °C) | 1.04 g/ml    |

**Solubility (20 °C)**

|                               | <b>g/100 g solution</b> |
|-------------------------------|-------------------------|
| Acetone                       | 2                       |
| Benzene                       | 0.01                    |
| 80 % Caprolactam + 20 % Water | 3                       |
| Chloroform                    | 6                       |
| Ethyl acetate                 | 1                       |
| Hexane                        | 0.01                    |
| Methanol                      | 6                       |
| Water                         | 0.01                    |

**Solubility (90 °C)**

|                              | <b>g/100 g solution</b> |
|------------------------------|-------------------------|
| Caprolactam                  | > 2                     |
| 95 % Caprolactam + 5 % Water | > 20                    |

**Volatility (TGA, air at 20 °C/min)**

|                                 |        |
|---------------------------------|--------|
| Temperature at 1 % weight loss  | 280 °C |
| Temperature at 10 % weight loss | 340 °C |

**Health & Safety**

Irganox 1098 exhibits a very low order of oral toxicity and does not present any abnormal problems in its handling or general use.

Detailed information on handling and any precautions to be observed in the use of the product(s) described in this leaflet can be found in our relevant health and safety information sheet.

**Note**

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September 2010