

**RIGHT TO PRACTICE SEARCH**

2-[2-Hydroxy-3,5-di-(a,a-dimethylbenzyl)phenyl]-2H-benzotriazole (a.k.a. Tinuvin 234)

By:

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## Scope and Methodology.

### *The accused material.*

The accused material is 2-[2-Hydroxy-3,5-di-(a,a-dimethylbenzyl)phenyl]-2H-benzotriazole, otherwise known as Tinuvin® 234, otherwise known by the CAS number [70321-86-7].

### *Scope*

This report is intended to establish the right to sell the accused material in the United States, and is therefore restricted to establishing that right with regard to U.S. patents that are currently in force.

### *Methodology*

The database used for this search was the USPTO web site. The original compound patent 4,226,763 was used as a link on the USPTO database to patents that reference it.

The claims of a patent describe that which is actually owned by the inventor or assignee. The claims for the patents that were found were examined for ownership of any compound, composition or process that would prevent or place restrictions on the accused material being sold in the United States by any company that has no patent claims on this material or its compositions or processes.

## Summary of Findings.

### *Product*

The original compound patent (U.S. 4,226,763) has expired. This material may be sold in the USA subject to restrictions placed on the composition that it is to be used in by several active patents.

U.S. 4,226,763 also contains claims for compositions of the accused material plus many synthetic organic polymers. Note that although these compositions have expired also, many patents exist for compositions that include specialized blends of the accused material with other stabilizers in more narrowly specified polymers. These claims are detailed in the attached table, and should be regarded as applications into which the accused product cannot be sold.

### *Process*

The original process patents (U.S. 4,041,044, and U.S. 4,275,004) have expired. It is now possible to sell the accused material made by the processes that are described in these

patents.

Note that other process patents exist that are current and describe processes that should not be used for commercial manufacture of the accused product. However the compound is sourced, a vendor should ensure that the process used to manufacture it is not covered by one of these patents. *It is important to note that a product made outside of the USA and imported into the USA must not be made by a process that is covered by a US patent.*

## Discussion

### *Product*

The original (now expired) Dexter patent, U.S. 4,226,763, claimed the composition of the material. It also claimed compositions that comprise material subject to light induced deterioration, and also such material being synthetic organic polymer.

If the term “comprising” in these claims is read the way it is normally intended by the USPTO, then other materials could be added to the composition without affecting the validity of the claims with respect to the expanded composition. (The additional components would actually be narrower in scope than the claim). For example, a hindered amine could be added (to produce a polymer + UV absorber + hindered amine) without affecting the validity of the claim.

The USPTO has seen fit to allow a number of other patents that contain composition claims to other, more specific, compositions not contained in the Dexter patent. These are summarized below, where some fringe applications (such as compositions comprising candlewax) have been omitted. I have listed the broadest (i.e. the first) claim in the patent. The intended user of this report should satisfy him or herself that other claims in the patents are not being infringed by a direct reading of the patent.

Note that in this table, if a list of items appears after the word “comprising” or “comprises” then all of those items must appear in an accused product for it to be infringing. Note also that not all of the patents listed here are assigned to Ciba. Where the claims seem to be clear enough to read, I have simply copied and pasted the claim from the USPTO web site directly into the table.

Number	Broadest Claim
4,902,734	<p>A thermosetting, acid-curable enamel coating composition, stabilized against discoloration, degradation and light sensitivity resulting from contact with a copper or copper alloy substrate, which comprises</p> <p>(a) an acid-curable thermosetting resin which is selected from the group of thermosetting resins consisting of melamine-acrylic resins, melamine-polyester resins, and melamine-alkyd resins;</p> <p>(b) an acidic catalyst, suitable for curing said thermosetting resin, which is an aryl sulfonic acid;</p> <p>(c) an ultraviolet light-absorber which is a 2-(2-hydroxyphenyl)-2H-benzotriazole; and</p> <p>(d) a triazole which is benzotriazole or tolutriazole.</p> <p><b><i>Note that all of the components (a) through (d) above must be present.</i></b></p>
5,810,889	<p>An aqueous textile treatment composition.</p>
6,228,911	<p>A composition, which comprises a) a styrene, .alpha.-methylstyrene or p-methylstyrene homo- or copolymer, b) a bromine-containing flame retardant, c) a UV absorber, d) a sterically hindered amine and e) an epoxidised fatty acid.</p> <p><b><i>Again, all of the above must be present, so this is a flame retardant composition.</i></b></p>
5,990,208	<p>A composition stabilized against the adverse effects of heat and light which comprises</p> <p>(a) a blend of polycarbonate and a second polymer selected from the group consisting of the polyesters, styrenic copolymers, rubbers and vinyl chloride polymers or copolymers; and</p> <p>(b) an effective stabilizing amount of a mixture of a non-basic hindered amine which is</p> <p>1,3,5-tris {N-cyclohexyl-N-[2-(3,3,5,5-tetramethylpiperazin-2-on-1-yl)ethy l] amino}-s-triazine; or</p> <p>1,3,5-tris {N-cyclohexyl-N-[2-(3,3,4,5,5-pentamethylpiperazin-2-on-1-yl)et hy l]amino}-s-triazine; and</p> <p>a UV absorber selected from the group consisting of a benzotriazole, an O-hydroxyphenyl-s-triazine or a benzophenone.</p>

	<i><b>This one should be read as a PC + another polymer + a HALS + a UV absorber.</b></i>
5,086,095	<p>A weather-resistance molded article formed of a polyacetal resin composition which comprises, based on the total weight of the compositions, a melt-blend of:</p> <p>(A) a polyacetal base resin;</p> <p>(B) between 0.01 to 5% by weight of a weather stabilizer which is at least one selected from the group consisting of benzotriazoles, benzophenones, aromatic benzoates, cyanoacrylates, oxalanilides and hindered amines;</p> <p>(C) between 1 to 40% by weight of an acrylic resin which is at least one resin selected from the group consisting of methyl methacrylate homopolymers or methyl methacrylate copolymers mainly comprised of methyl methacrylate; and</p> <p>(D) a fluoro resin which is one or more polymers selected from the group consisting of polytetrafluoroethylene, polyvinyl fluoride, polyvinylidene fluoride tetrafluoroethylene/hexafluoropropylene copolymer and tetrafluoroethylene/ethylene copolymer, and wherein</p> <p>said fluoro resin being present in an effective amount of between 1 to 20% by weight to enhance the acrylic resin's fluidity within said polyacetal base resin such that said acrylic resin is present in a localized region near a surface of the molded article, whereby weather-resistance of the molded article is improved.</p>
5,118,734	<p>A weather-resistant polyacetal molding composition comprising a polyacetal base resin consisting essentially of repeating oxymethylene units, and a weather-resistant effective amount of a stabilization package which includes (i) a weather stabilizer for the polyacetal base resin, (ii) an acrylic resin, and (iii) an oxyalkylene polymer which is at least one polymer selected from the group consisting of poly(ethylene oxide) and ethylene oxide/propylene oxide copolymers, and wherein said oxyalkylene polymer is compatible with said polyacetal base resin and said acrylic resin to facilitate migration to and localization at the surface of molded articles of said acrylic resin during a molding operation to form said molded articles from said molding composition, wherein said molding composition is rendered weather-resistant.</p>
5,380,774	<p>A nylon molding composition comprising a nylon base resin and a stabilization system which is present in said composition in an amount sufficient to achieve a color difference, as calculated in CIELab units under illuminant "D-65" according to ASTM Standard D-2244, of less</p>

	<p>than about 1.5 when exposed to 601.6 kJ/m.sup.2 irradiation in a Xenon arc weatherometer operated according to SAE J1885, and exhibiting at least about 75% surface gloss retention after irradiation, and wherein said stabilization system includes:</p> <p>(i) a hindered phenolic antioxidant in the form of tetrakis(methylene(3,5-di-tert-butyl-4-hydroxy-hydrocinnamate)) methane;</p> <p>(ii) a phosphate compound in the form of bis(2,4-di-t-butylphenyl) pentaerythritol diphosphite;</p> <p>(iii) a hindered amine light stabilizer in the form of bis(1,2,2,6,6-pentamethyl-4-piperidinyl)(3,5-di-t-butyl-4-hydroxybenzyl)butyl-propanedioate; and optionally</p> <p>(iv) a benzotriazole UV-light absorber in the form of 2-(3',5'-bis(1-methyl-1-phenylethyl)-2'-hydroxyphenyl benzotriazole.</p>
5,523,341	<p>A composition consisting essentially of</p> <p>(a) a polyoxymethylene,</p> <p>(b) 0.1-30 weight percent of a vinyl polymer containing oxazolyl-containing olefinic monomer units, and</p> <p>(c) 0.01-5 weight percent of at least one compound selected from the group consisting of UV absorbers, hindered amine light stabilizers, and mixtures thereof, with the weight percent ranges being based upon 100 parts by weight of the polyoxymethylene.</p> <p><i>Note that "consisting essentially of..." means that you must have all of the (three) elements recited, but can add another only if the addition does not affect the performance of the first three.</i></p>
5,907,026	<p>A composition comprising:</p> <p>(a) polycarbonate;</p> <p>(b) a cycloaliphatic polyester resin;</p> <p>(c) at least one of a benzotriazole, benzophenone, and triazine based UVA, said triazine based UVA having the formula ##STR6## wherein: R.sup.10 is --C.sub.1 -C.sub.10 alkyl, or C.sub.1-6 branched or straight chain alkyl-O-C.sub.10-15 straight chain alkyl; and</p>

	R.sup.11 and R.sup.12 independently represent a phenyl radical optionally substituted with up to two C.sub.1 -C.sub.4 alkyl substituents; and  (d) a catalyst quencher.

*Process*

The “accused process” was not defined for this report. However, subject to such definition, we note the following (Ciba assigned) unexpired patents for the process to make the accused product.

5,276,161

5,571,924

As was mentioned in the summary, the process by which the product is made should be compared against the claims in these patents.