

EPA shall promulgate final listing determinations for azo/benzidine, anthraquinone, and triarylmethane dye and pigment production wastes * * * The azo/benzidine listing determination shall include the following azo/benzidine dye and pigment classes: azo, monoazo, diazo, triazo, polyazo, azoic, benzidine, and pyrazolone. The anthraquinone listing determination shall include the following anthraquinone dye and pigment classes: anthraquinone and perylene. The triarylmethane listing determination shall include the following triarylmethane dye and pigment classes: triarylmethane and triphenylmethane.

Today's proposal applies only to certain organic dye and/or pigment production industries. The end-user markets for dyes and pigments, which include textiles, paper, leather, inks, paints, coatings, plastics, fibers, lacquers, varnishes, cosmetics, food items, and other low volume markets, are not within the scope of our listing determination. Similarly, we are not addressing wastes from the post-production formulation and packaging of dyes and/or pigments. Consistent with both HSWA Amendments of 1984 and the consent decree, EPA is only making proposed determinations on wastes from the production of the organic dyes and/or pigments at issue.

Facilities impacted by today's proposal manufacture a range of products. Some are exclusive dye manufacturers, while others produce exclusively pigments. Others produce both pigments and dyes, and many of these facilities produce other products that are not dyes or pigments. While the various trade associations have asserted over time that wastes from dye manufacture differs from wastes from pigment manufacture, we are not differentiating between the two types of products for the purposes of this proposal. Dyes and pigments commonly use similar raw materials, and pigments are often made by insolubilizing dyes. The mass loadings-based approach proposed today will only impact those facilities that generate wastes with significant levels of the K181 constituents, irrespective of whether they are associated with dyes, pigments or both processes. As a result, this notice uses the terminology "dyes and/or pigments" to refer to all of the facilities or processes potentially impacted by this proposal.

Products produced by the organic dyes and/or pigments industries that are included within the scope of this proposed rule are referred to as "dyes," "pigments" or "FD&C colorants." The consent decree covers three major chemical classes of organic dyes and pigments: azo/benzidine, anthraquinone, and triarylmethane. This

includes entities who manufacture azo, monoazo, diazo, triazo, polyazo, azoic, benzidine, and pyrazolone categories of the azo/benzidine class; anthraquinones and perylenes; and triarylmethane and triphenylmethane categories of the triarylmethane class.

Commenters on the previous proposed listing determinations for these wastes raised several questions about the range of products that would be associated with any listed wastes from the production of dyes and/or pigments. For the purposes of clarity, we are addressing those particular concerns in today's proposal. One commenter¹ stated that wastes from the manufacture of polymeric colorants should not be included in the proposed listings. The commenter noted that polymeric colorants are not classified as dyes or pigments by various authoritative sources and are not considered dyes or pigments by industry or end-users. Specifically, the commenter noted that (1) no polymeric colorant is listed in the worldwide dyes registry administered by the United Kingdom-based Royal Society of Dyers and Colourists, *i.e.*, the Colour Index; and (2) polymeric colorants do not appear to qualify as a conventional dye or pigment under the guidelines provided in Kirk-Othmer Encyclopedia of Chemical Technology (Fourth Edition). The commenter described polymeric colorants as polymers with much higher molecular weights (approximately 3,500) than either dyes or pigments (less than 500). The commenter also noted that in prior rulemakings (*e.g.*, carbamate rulemaking² and polymer exemption provisions under the Toxic Substances Control Act (TSCA)),³ EPA recognized the reduced toxicity associated with higher molecular weight molecules. The commenter further noted that producers of such products claim that the manufacturing process and end uses of polymeric colorants are different than dyes or pigments in that polymeric colorants must be non-staining. The dyes manufacturers' trade association, ETAD, noted in their comments that they do not classify polymeric colorants as dyes.⁴ We agree that polymeric colorants do not fall within the classes of products of interest to today's proposal. Wastes from production of polymeric colorants, therefore, are not

within the scope of today's proposed listing determination.

Several commenters⁵ stated that perylene and perinone pigments are misclassified as anthraquinones. They argue that although the Colour Index classifies perylenes and perinones as being subclasses of anthraquinone, these pigment classes are not structurally related to anthraquinones and are not derived from anthraquinone-based raw materials, and therefore, should be classified separately. While there may be a question as to whether perylenes should be classified as anthraquinones, we are proposing to retain wastes from the production of perylene products within the scope of today's proposed listing determination. The consent decree specifically requires us to assess perylene products, and therefore we must make listing determinations that cover any corresponding wastes, regardless of whether or not perylenes are properly classified as anthraquinones.

Regarding perinone pigments, while the Colour Index groups perinones under the broader classification of "Anthraquinones and Related Colouring Matters," we are persuaded by the commenters' arguments that these products are sufficiently dissimilar from anthraquinones. Perinones do not have the quinone-type structure that is distinctive of anthraquinones, but rather perinones are derivatives of naphthalene-1,4,5,8-tetracarboxylic acid.⁶ Therefore, we are not proposing that perinones be covered by today's proposed listing determination.

Commenters also stated that quinacridone pigments are not within the anthraquinone pigment category since they are quinonoid in type and carry Colour Index numbers outside of the anthraquinone category. We agree that these products are sufficiently dissimilar from anthraquinones. Quinacridones are classified as acridines, which have a nitrogen in the fused ring system.⁷ Therefore, we are not proposing to include their wastes

⁵ See comments on the 1994 proposal submitted by CDR, Bayer, and CPMA, and on the 1999 proposal submitted by CPMA, available in the docket for today's proposal.

⁶ For example, see the perinone pigment: C.I. Pigment Orange 43; in this case the pigment has only one carbon bound to an oxygen in a carbonyl group (instead of two in the typical anthraquinone) and this carbon is bonded to a nitrogen in an amide linkage (instead of a carbon in an anthraquinone).

⁷ For example, see the quinacridone pigment: C.I. Pigment Red 202; this pigment has only one carbonyl group (instead of two in the typical anthraquinone) and instead of another carbonyl moiety the molecule has a nitrogen in the typical acridine ring structure.

¹ See Milliken comments on 1994 and 1999 proposals, available in the docket for today's proposal.

² 60 FR 7824, 7830 (February 9, 1995).

³ 40 CFR 723.250.

⁴ See ETAD's comments on 1994 proposal, available in the docket for today's proposal.