

Economic and Fiscal Impact Analysis

Attachment to STD 399

SAFER CONSUMER PRODUCTS REGULATIONS – Listing Motor Vehicle Tires Containing N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine (6PPD) as a Priority Product

Department of Toxic Substances Control reference number: R-2022-04R

This document details the background of the economic and fiscal impacts of the Department of Toxic Substances Control's (DTSC) proposed regulation to amend the California Code of Regulations, title 22, section 69511, Priority Product List – General, and adopt section 69511.7, Motor Vehicle Tires Containing N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine (6PPD).

Note: This document only includes sections of the Form 399 for which an explanation could not fit in the space provided. As such, the section headings and titles are intentionally written to match the corresponding sections of the form and may not be in consecutive order.

Summary: DTSC prepared this economic impact analysis to support the designation of *Motor Vehicle Tires Containing N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine (6PPD)* as a Priority Product under the Safer Consumer Products (SCP) regulations (Chapter 55 of Division 4.5 of Title 22 of the California Code of Regulations (commencing with section 69501)). For the purposes of this regulation, “motor vehicle tires containing N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine (6PPD)” means a motor vehicle tire, as defined below, that contains the chemical N-(1,3-dimethylbutyl)-N'-phenyl-p-phenylenediamine (6PPD). “Tire” means any product that can be described or observed as a covering for a wheel, usually made of rubber reinforced with cords of nylon, fiberglass, or other material, whether filled with compressed gas (such as air or nitrogen), solid, or non-pneumatic (airless). “Motor vehicle tire” includes any tire, as defined above, that is intended for use on light duty vehicles (passenger cars, light trucks, vans, and sport utility vehicles); motorcycles; motor homes; medium- and heavy-duty trucks; buses; and trailers (including trailer coaches, park trailers, and semitrailers) and tire tread material: circular or linear precured tread and raw rubber for use in mold cure retreading of a tire.

DTSC has identified motor vehicle tires as a major source of human and ecological 6PPD and 6PPD-quinone exposure. 6PPD is a high-production volume chemical, one of its main uses being motor vehicle tires, where it is added at concentrations of 1 to 2% to protect the rubber from degradation by oxygen and ozone. 6PPD is used in nearly all

motor vehicle tires in California. 6PPD slowly migrates from the interior of the tire towards its surface over the lifetime of the tire, such that there is a constant supply of 6PPD and its oxidation products at the surface of the tire. By design, 6PPD is highly reactive and forms a number of reaction products when in contact with oxygen and ozone, including 6PPD-quinone.

Both 6PPD and 6PPD-quinone display hazard traits of concern according to the SCP regulations. 6PPD displays dermatotoxicity; hepatotoxicity; hematotoxicity; ocular toxicity; phytotoxicity; reproductive toxicity; and wildlife survival impairment; whereas 6PPD-quinone displays loss of genetic diversity and biodiversity, reactivity in biological systems, respiratory toxicity, and wildlife survival impairment (including to coho salmon, a threatened and endangered species in California).

In addition to impacts to other aquatic organisms, loss of coho salmon in California has significantly impacted California's Native American tribes. The loss of core traditional food sources for tribal communities can be tied to loss of culture, increased physical and mental health issues, and increased poverty. For instance, the human toll of the decline of salmon has been well-documented by the Karuk Tribe in the Klamath Basin: diabetes, heart disease, hypertension, and stroke, diseases that are strongly influenced by diet, have become more common in the Karuk since the decline of the salmon fishery, costing the Karuk an estimated \$1.9 million per year in health costs. Native American advocates assert that access to traditional food sources, such as salmon, helps to promote self-reliance among Indigenous peoples and is fundamentally important to protecting Native communities' health, well-being, economic resilience, and cultural heritage.

6PPD-quinone is also potentially toxic to other economically important species that are closely related to coho such as chinook salmon, steelhead, and the California golden trout. Additionally, 6PPD itself is known to be toxic to several aquatic invertebrates.

Given this potential for significant and widespread adverse impacts, the presence of 6PPD in tires and associated release of 6PPD-quinone to the aquatic environment represent a threat to California's aquatic resources and the tribal communities that rely on them, may interfere with California's ability to reuse and recycle tires, and may require expensive special handling of stormwater runoff to mitigate adverse impacts.

Findings: DTSC determined that there are up to four manufacturers of motor vehicle tires containing 6PPD¹ that could be impacted by this proposed regulation. DTSC estimates that costs could range from **\$451,840** to **\$1,219,840** for California-based manufacturers to fulfill the DTSC regulatory requirements.

This economic impact assessment is based on the assumption that manufacturers of motor vehicle tires containing 6PPD will comply fully with the DTSC regulations by submitting Priority Product Notifications and AA Reports to DTSC by the dates specified in regulation as this is the most fiscally conservative compliance pathway.

Manufacturers of motor vehicle tires containing 6PPD that do not submit AA Reports may comply with the regulation in one of several ways. They may: 1) remove 6PPD from their tires, 2) replace 6PPD with a different chemical that meets certain regulatory requirements for those products, or 3) stop selling tires containing 6PPD in California.² If a manufacturer fails to comply with the regulation and DTSC provides notice of this noncompliance, the requirements for importers, retailers, or assemblers, as applicable, call for importers to cease placing the product into the stream of commerce in California and for retailers and assemblers to cease ordering the product.

Background: Following the designation of motor vehicle tires containing 6PPD as a Priority Product, manufacturers must submit a Priority Product Notification and may conduct an AA to determine if there are any safer alternatives to the use of 6PPD in motor vehicle tires. In lieu of submitting an AA Report, a manufacturer could also remove 6PPD from motor vehicle tires, replace 6PPD in its products, or stop selling their motor vehicle tires containing 6PPD in California. If manufacturers of Priority Products cannot be identified or contacted in a reasonable manner, DTSC traces the supply chain to identify a responsible entity in the next tier of commerce. Other responsible entities may include importers, assemblers, or retailers, in descending order of responsibility.³

In general, the AA is a two-stage process that takes into account many facets of product manufacturing, including process engineering, environmental management, financial analysis, and research and development. The AA also examines other product characteristics, such as use and end-of-life management. In the first stage of the AA process, manufacturers are required to identify the legal, functional, and performance requirements of the Priority Product and the Chemical of Concern and use this information to identify an array of alternatives to consider. When the first stage is

¹ The DTSC SCP program considers a business “California-based” if the business is incorporated or headquartered in California or employs over 50 percent of its employees in California.

² See California Code of Regulations, title 22, section 69505.2.

³ See California Code of Regulations, title 22, section 69501.2.

completed, the manufacturer documents the findings in a Preliminary AA Report and submits this report to DTSC. During the second stage of the AA process, the manufacturer compares the Priority Product with possible alternatives using a more in-depth analysis and considers additional factors, including life cycle and economic impacts. This information is submitted to DTSC in the Final AA Report.

If a manufacturer determines there are no functionally acceptable or technically feasible alternatives to the use of the Chemical of Concern in the Priority Product, it may submit an Abridged AA Report in lieu of submitting the Preliminary and Final AA Reports required by the two-stage process. The Abridged AA process requires manufacturers to document their screening of potential alternatives. Because the Abridged AA process allows for the continued sale and use of the Priority Product, Abridged AA Reports must include an implementation plan to carry out the following Regulatory Responses, which require:

- Providing product safety information to consumers, including information on chemical hazards, safe handling and disposal procedures, and other information needed to protect public health or the environment; and
- Advancing green chemistry and green engineering principles, including initiating research and development projects or funding challenge grants to design safer alternatives or improve performance, lower cost, or increase market penetration of existing safer alternatives.

The completion of a draft AA report sets in motion a comprehensive and iterative review and discussion process. Following receipt of an Abridged AA Report or Final AA Report, DTSC will invite the public to comment on the report. Manufacturers are required to address all public comments identified by DTSC. DTSC will then initiate a departmental review of the AA Report. DTSC must evaluate each report on its own merit, taking into consideration each manufacturer's unique conclusions and proposals. Because AA Reports and proposed Regulatory Responses they may include would address the manufacturers' specific business situations, DTSC cannot predetermine whether any Regulatory Response will be proposed by DTSC after the AA process is complete.

I. ECONOMIC IMPACT STATEMENT

The following information supplements statements in the Economic and Fiscal Impact Statement (STD 399) for the rulemaking proposal titled "Safer Consumer Products Regulations – Listing Motor Vehicle Tires Containing N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine (6PPD)." The section headings and numbers shown below correspond to sections in the Economic Impact Statement portion of the STD 399 that require additional information.

A) Estimated Private Sector Cost Impacts

3. Total Number of Businesses Impacted

Through internet research and consultation with industry representatives, DTSC estimates there are at most four California-based manufacturers of motor vehicle tires containing 6PPD that would be required to comply with this regulation. All of these manufacturers must submit Notifications and may prepare AA reports. Costs incurred by out-of-state businesses, however, fall outside the scope of the Economic Impact Analysis. The DTSC SCP program considers a business “California-based” if the business is incorporated or headquartered in California or employs over 50 percent of its employees in California.

Types of Businesses

These businesses are manufacturers of motor vehicle tires containing 6PPD that make and sell their products in California.

Number or Percentage of Total Businesses Impacted that are Small Businesses

Under California Rulemaking Law, Government Code section 11342.610, a small business is defined as being both independently owned and operated and not dominant in its field of operation. California Government Code 11346.3(b)(4) adds an additional criterion to the small business definition: a small business must have fewer than 100 employees. Many of the potentially impacted manufacturers are non-public companies and do not publish information about employment size, ownership, or management of their organizations. DTSC relied on the United States Census Bureau and Dun & Bradstreet Hoovers databases to provide estimates of employment size for each potentially impacted manufacturer. Based on this information and the limited information that is available on company websites, DTSC estimates that one of the four potentially impacted manufacturers is a small business.

4. Number of Businesses Created and Eliminated

DTSC determined that this proposal is unlikely to result in the elimination of any manufacturers of motor vehicle tires containing 6PPD. DTSC anticipates zero ongoing costs associated with this proposed regulation. DTSC expects that the one-time costs associated with the Priority Product Notifications and AA Reports are low enough for all potentially impacted manufacturers to comply without eliminating their businesses. Manufacturers can significantly reduce their individual costs of compliance by submitting a combined AA Report through a consortium.

The AA process requires manufacturers to provide DTSC with data and analysis to determine whether safer alternatives to the use of the Chemical of Concern in the Priority Product exist. DTSC reviews each AA Report on its own merits, taking into consideration each manufacturer's unique conclusions and proposals. Because each manufacturer's proposal will address its specific business situation, DTSC cannot predetermine the actions that manufacturers of motor vehicle tires containing 6PPD would need to take, either individually or collectively, to meet the goals of protecting the environment and advance green chemistry or green engineering principles. While it is impossible to accurately predict or quantify the full range of potential benefits associated with the implementation of this proposed regulation, DTSC anticipates that this proposed regulation could potentially lead to increased business opportunities in consulting services, chemical and material science research and support, product research and design and marketing.

6. Number of Jobs Created and Eliminated

Statewide job expansion could occur in consulting services, product research and design, chemical and material science research, and support and marketing.

B) Estimated Costs

DTSC estimates the costs to responsible entities to complete a Priority Product Notification, an Alternatives Analysis and Report to identify safer alternatives, and to respond to DTSC's Alternatives Analysis Report review, because these are the outcomes required by the proposed regulation.

Following the completion of the Alternatives Analysis, each responsible entity may elect to take one or more actions, which may include, but are not limited to, selecting an identified alternative to the Priority Product (for example, removing or replacing the Chemical of Concern in the Priority Product) or retaining the Priority Product. This decision may result in additional costs or cost savings to the responsible entity. The additional costs or cost savings associated with these decisions are not calculable because they are dependent on the specific factors relevant to each responsible entity's Alternatives Analysis. DTSC cannot predetermine the outcome of any Alternatives Analysis or the subsequent actions of any responsible entity.

1.a. Small Business Costs

DTSC estimates that it will take each manufacturer of motor vehicle tires containing 6PPD a maximum of 16 hours at \$60/hour to complete a Priority Product Notification, or a total of \$960. DTSC estimates that the cost to each manufacturer for the Priority Product Notification, AA report, and responding to DTSC's AA report review will be

\$112,960 to \$182,960 for an Abridged AA (Table 1a), and \$139,960 to \$304,960 for a two-stage AA (Table 1b), regardless of manufacturer size. Feedback from the author of one AA submitted to DTSC confirms that this estimate is reasonable.

DTSC expects costs to individual manufacturers to be lower if they form a consortium and submit a combined AA. Adopted Safer Consumer Product regulations and those well into the development pipeline confirm the prevalence of collaborative approaches to authoring AAs. These are one-time notification and reporting requirements that manufacturers are expected to complete within one year of adoption of the proposed regulation; therefore, there are no ongoing costs. One out of the four impacted California businesses is a small business; however, each business size will incur the same costs of regulatory compliance.

Table 1a: Estimated Total Costs to Manufacturers - Abridged AA

Manufacturer AA-Related Tasks	Individual Manufacturer Cost Range	CA Industry-Wide Cost Range
Priority Product Notification	\$960 - \$960	\$3,840 - \$3,840
AA	\$100,000 - \$150,000	\$400,000 - \$600,000
Respond to Reviews of AA	\$12,000 - \$32,000	\$48,000 - \$128,000
Combined Tasks	\$112,960 - \$182,960	\$451,840 - \$731,840

Table 1b: Estimated Total Costs to Manufacturers - Two-stage AA

Manufacturer AA-Related Tasks	Individual Manufacturer Cost Range	CA Industry-Wide Cost Range
Priority Product Notification	\$960 - \$960	\$3,840 - \$3,840
AA	\$120,000 - \$250,000	\$480,000 - \$1,000,000
Respond to Reviews of AA	\$19,000 - \$54,000	\$76,000 - \$216,000
Combined Tasks	\$139,960 - \$304,960	\$559,840 - \$1,219,840

1.b. Typical Business Costs

See section '1.a.', which immediately precedes this section. DTSC estimates that costs for each business will be the same regardless of size.

1.c. Individual Costs

There are no anticipated costs to individuals.

3. Reporting Requirement Costs

There are no annual ongoing reporting costs because Priority Product Notifications, Abridged AA Reports, and two-stage AA Reports are one-time reporting requirements.

5. Federal Regulations

The SCP program established a unique approach to regulating chemicals of concern in consumer products that allows DTSC to take a precautionary approach to protecting people and the environment when other regulatory programs or protective standards are lacking. There are no equivalent federal regulations that require product manufacturers to determine if the chemical in their product is necessary and if there is a safer alternative, and to take steps to protect the environment. This proposed regulation is an important effort to protect California's wildlife from harmful exposures to 6PPD from tires. Furthermore, this proposed regulation is an important supplement to current research, legislative, and regulatory activities related to 6PPD at the federal level and in other states.

C) Estimated Benefits

A reduction in exposure to 6PPD could benefit the health of California's wildlife. These improvements will in turn benefit tribal economies by potentially reducing the amount of resources spent on efforts to preserve impacted wildlife species. Reducing the threat from 6PPD and 6PPD-quinone may help the coho population rebound. Native communities' health, well-being, economic resilience, and preservation of their cultural heritage may benefit from larger salmon populations. A full description of the potential adverse impacts of 6PPD and factors related to potential exposure to 6PPD is presented in DTSC (2021) *Product-Chemical Profile for Motor Vehicle Tires Containing 6PPD*, a reference listed in the Initial Statement of Reasons.

DTSC cannot predetermine the alternatives that each manufacturer of motor vehicle tires containing 6PPD will propose; therefore, it is impossible to accurately predict or quantify the full range of potential benefits associated with their development. DTSC's process encourages the use of alternatives of least concern and prefers those that provide the greatest level of inherent protection. In general, economic benefits to California workers and business owners may include expanded employment opportunities in the fields of consulting and marketing. Additional benefits may accrue because of increased research and product development collaboration between

manufacturers and California-based research entities. Institutional and corporate financial support of chemical and material science programs focused on developing safer treatments could advance the field. These research initiatives could provide manufacturers with employees that are highly skilled in the research and design of products for newly emerging global markets.

D) Alternatives to the Regulation

DTSC's analysis found that no reasonable alternative to the selected alternative (the proposed regulation) would be either more effective in carrying out the purposes for which the action is proposed or less burdensome to affected private persons, and equally effective in achieving the purposes of the regulation in a manner that ensures full compliance with the law being implemented or made specific.

D.1. Alternatives Considered

DTSC considered the following alternatives to the proposed regulation:

Regulation: List motor vehicle tires containing 6PPD as a Priority Product:

This option was selected due to the adverse environmental impacts resulting from exposure to 6PPD used in manufacturing motor vehicle tires. This is the chosen alternative, because it is the only alternative effective in achieving the purposes of the regulation.

- 1) Alternative 1: List "motor vehicle tire tread containing 6PPD" as a Priority Product.

While 6PPD is found in tire tread, and tire tread is what is most likely to be worn off and deposited in the environment, 6PPD is found throughout the tire, especially in the sidewall. Similarly, 6PPD-quinone has been found in both the tire tread and the tire sidewall. As such, restricting the definition of the Priority Product to only include the tire tread would ignore the potential for exposure to 6PPD and 6PPD-quinone that originated in the sidewall or other parts of the tire. To meaningfully protect California's aquatic environment, DTSC decided to include the entire motor vehicle tire in its Priority Product designation.

- 2) Alternative 2: Narrow the definition of “motor vehicle tires” to include replacement, all-season tires intended for use on passenger cars.

All tires contain 6PPD and release tire wear particles to the environment, resulting in exposure of aquatic organisms to 6PPD and 6PPD-quinone. While there is great variety in the types of tires available, industry stakeholders have indicated that any alternatives to 6PPD found for replacement, all-season tires intended for use on passenger cars would work for all tires. DTSC has rejected this alternative because it would be less protective of California’s wildlife. Nevertheless, DTSC anticipates that only one Alternatives Analysis will be needed for all of the tires encompassed in the broader definition we have chosen for this regulation. The definition we have selected will help ensure that any available alternatives are adopted across the tire market, not just in replacement, all-season tires intended for use on passenger cars, and thus increase protection of California’s aquatic environment.

D.2. Costs of Alternatives

DTSC did not attempt to quantify costs associated with any of the Alternatives since none of the Alternatives would have yielded environmental benefits approximating the benefits provided by specifying motor vehicle tires containing 6PPD in the Priority Product designation. Alternative 1 fails to address important sources of 6PPD in tires beyond tire tread, and Alternative 2 unnecessarily narrows the scope of the product definition and limits the ability of DTSC to ensure the adoption of safer chemical alternatives across the full spectrum of tire types.

E) Major Regulations

DTSC estimates that regulatory costs to manufacturers of motor vehicle tires containing 6PPD will be less than the threshold amounts for a "major" regulation cited in Section 11346 of the Government Code and Section 57005 of the Health and Safety Code. Accordingly, DTSC is not required to prepare and submit for approval a "Standardized Regulatory Impact Assessment" because the estimated costs incurred by motor vehicle tires containing 6PPD will be less than \$50 million in the first year. Consequently, DTSC is not required to conduct macro-economic modeling for the proposed rulemaking pursuant to Section 11346 of the Government Code. Similarly, the estimated additional costs for the proposed regulation will be less than the \$10 million Cal/EPA-specific threshold pursuant to Section 57005 of the Health and Safety Code.

II. FISCAL IMPACT STATEMENT

The following information supplements statements in the Economic and Fiscal Impact Statement (STD 399) for the rulemaking proposal titled “Safer Consumer Products Regulations – Listing Motor Vehicle Tires Containing N-(1,3-Dimethylbutyl)-N'-phenyl-p-phenylenediamine (6PPD).” The section headings and numbers shown below correspond to sections in the Fiscal Impact Statement portion of the STD 399 that require additional information.

A) Fiscal Effect on Local Government

No fiscal impact exists.

B) Fiscal Effect on State Government

The DTSC Safer Consumer Products (SCP) Program estimates that the state fiscal impact of adopting this regulation will range from \$1,671,900 to \$6,008,000 Toxic Substances Control Account (TSCA) in DTSC staff costs for reviewing all Notifications, Abridged Alternatives Analysis (AA) Reports, and two-stage AA reports submitted by manufacturers (Table 2). This calculation uses job classification rates from the State of California Civil Service Pay Scale. Moreover, the costs are dependent on the complexity of the type of AA report submitted.

Table 2: Estimated Fiscal Cost to State Government

Number of Notifications and AAs	Low	High
Individual Notification and AA	\$33,438	\$120,160
Total (All Notifications and AAs)	\$1,671,900	\$6,008,000

DTSC estimates these one-time⁴ costs would be absorbed within DTSC’s existing budget. Existing DTSC staff and managers will perform the reviews, and no new personnel resources will be needed to complete these tasks. However, if actual workload exceeds expectations and SCP program capacity, the Program will initially issue Notices of Ongoing Review, as provided in the SCP regulations, to extend the AA review into subsequent fiscal years. Given substantial uncertainty as to the total number and breadth of AA submittals from 77 responsible entities located primarily outside California for this proposed regulation, Notices of Ongoing Review may only partially mitigate SCP’s resource shortfall. For instance, complex two-stage AAs may comprise

⁴ These activities will likely fall within FY 2022-23, depending on the precise timing of regulatory milestones.

the bulk of submittals. Should circumstances such as these dictate that SCP requires additional resources to complete required AA reviews, DTSC will pursue a staffing augmentation through the annual budget process.

Additionally, Table 2 reflects that SCP anticipates it is unlikely that all 77 responsible manufacturing entities will submit individual AAs. DTSC's SCP Program assumes, in the fiscal cost range estimates in Table 2, that the following groups will submit consortium AAs:

- 12 tire manufacturers are members of the United States Tire Manufacturers Association (USTMA)
- 9 tire manufacturers are members of the Retread Tire Association
- Two tire manufacturers are located in Southern California
- Three tire manufacturers are located in West-Central Oregon
- Three tire manufacturers are located in South-Western Pennsylvania
- Four tire manufacturers are located in the Nashville, Tennessee region

Based on these assumptions regarding consortium-based approaches to AA development, we estimate a maximum of 50 AAs will be submitted for this Priority Product.

Other manufacturers will likely form consortiums as well. The Program's experience with regulations for spray polyurethane foam containing methylene diphenyl diisocyanates and paint strippers containing methylene chloride provides evidence to support this assumption. Some responsible entities will simply fail to comply with AA requirements.⁵ These circumstances will drive down actual fiscal impacts.

Estimates include costs of review by a variety of technical staff including environmental scientists, toxicologists, engineers, economists, and attorneys. The primary sources of uncertainty in these estimates are as follows: the precise number of manufacturers of tires; how many manufacturers will form a consortium to submit a combined AA Report; the number of hours it will take DTSC to review an individual Notification, Abridged AA, or two-stage AA report; and whether any of the 77 identified entities are not manufacturers but assemblers (which would not be required to submit a Priority Product Notification or conduct an AA under DTSC regulations).

C) Fiscal Effect on Federal Funding of State Programs

No fiscal impact exists.

⁵ Failure to comply, of course, may result in an array of other difficult to estimate costs, such as legal enforcement.