January 30, 2026

Robin Christensen
Deputy Director
Safer Consumer Products Program
California Department of Toxic Substances Control
1001 I Street
Sacramento, CA 95814-2828

Re: *Background Document on DTSC's Microplastics in Consumer Products Research (November 2025)*

Submitted via website at: https://calsafer.dtsc.ca.gov/workflows/comment/

Dear Deputy Director Christensen:

The American Coatings Association ("ACA") appreciates the opportunity to comment regarding DTSC's background document identifying consumer products for possible listing as priority products for microplastic pollution under the *Safer Consumer Products Program*. The Association's membership represents 90% of the U.S. paint and coatings industry. ACA appreciates DTSC's willingness to interact with stakeholders during this process. We are optimistic that through continued involvement with the public and stakeholder community, DTSC will advance a science-based, risk-based approach to understanding microplastic pollution and its sources.

I. Introduction

Paint and coatings products contribute directly to sustainability by providing resistance and durability to products upon application. Paint and coatings offer vital functions for infrastructure, consumer goods and industrial applications; contribute to a safe and healthy environment for communities; and add color and protection to buildings, homes and a variety of goods and machinery. Coatings applications include protection of critical water delivery systems, bridges, buildings and other socially valuable infrastructure. Applications include reflective coatings enhancing building energy efficiency, EV battery coatings, bridge paints, solar-panel coatings, etc.

In November 2025, DTSC published a *Background Document* intended to summarize DTSC's "preliminary research on microplastics in select consumer products, which fall under DTSC's current Work Plan product category of products that

contain or generate microplastics,"[1] identifying *water based interior wall-paint* while noting the possibility of selecting paint for regulation under *the Safer Consumer Products Program*. ACA does not agree with this assessment.

DTSC should not select paint as a priority product under the *Safer Consumer Products Program*. The paint industry typically does not add microplastics to water-based interior wall paint. Dried paint film also is not a "microplastic," and scientific literature does not identify paint as a significant contributor to microplastic pollution. A mitigating factor here is the 13-year-old PaintCare program which provides California consumers with easy, convenient and free paint collection locations which alleviates significant concerns related to improper disposal of paint. International precedent in the EU demonstrates that there is no need to restrict paint for microplastic pollution, and that alternatives to latex paint are not viable and could lead to other health and environmental impacts, i.e., regrettable substitutes.

Clearly, DTSC should not select paint as a priority product. The *Safer Consumer Products Program* is not the appropriate regulatory program to address DTSC's concerns related to microplastic pollution. Chemical identification is critical to the program's efficacy and procedural requirements. "Microplastics" are not a discreet chemical or grouping of chemicals. Rather, they are a general grouping of materials with varying molecular identities. Failure to clearly identify chemicals as required undermines the *Safer Consumer Products* product selection process, alternatives analysis, and possible regulation. The importance of this should not be minimized. The failure to provide clear chemical identification deprives industry and the public of the opportunity to provide optimal comment on a narrow set of issues related to hazards, beneficial uses, alternatives, etc. Chemical identification must occur prior to product selection to preserve the procedural requirements of the program, preserving optimal public engagement and the quality of information available to the agency informing product selection.

Further, we disagree with the conclusions made in the *Background Document* including:

> Humans and aquatic life can be exposed to MPs from washing paint application tools down the drain and improper disposal of paint. MPs shed from dried paint can contaminate indoor air and household dust.[2]

[1] Department of Toxic Substances Control, *Background Document on DTSC's Microplastics in Consumer Products Research* (November 2025), p. 1, available online at: https://dtsc.ca.gov/wp-content/uploads/sites/31/2025/11/Background-Document-on-DTSCs-Microplastics-in-Consumer-Products-Research.pdf

[2] DTSC, *Background Document on DTSC's Microplastics in Consumer Products Research* (November 2025) at p. 8.

DTSC also identifies the following issues for comment in relation to interior paint:

- Whether manufacturers are developing non-plastic alternatives to primary microplastics in paints.
- Obstacles to replacing primary microplastics in paints.
- Whether paints can be formulated with non-plastic alternatives to primary microplastics (e.g., mineral, clay, or chalk paints) that can provide the same performance as microplastics-based interior paints.
- Types of paint (e.g., interior, exterior, road, or marine) that it would be feasible to switch to non-microplastics alternatives and still meet performance requirements.

In addition to *water-based interior wall paint* DTSC identifies: artificial turf, toys, laundry and dishwashing detergents, fabric softeners, baby bottles, plastic beverage bottles, plastic cling wraps and films, plastic candy wrappers, polystyrene foam foodware, single-use plastic tea bags, plastic film mulch and cellulose acetate cigarette filters.

For the reasons as detailed below, ACA strongly urges DTSC not to propose listing paint as a priority product for microplastic content under the Safer Consumer Products Program. These points are detailed in ACA's comment below organized into the following sections:

I. Introduction

II. Paint is not a source of microplastic pollution

a. Paint particles are not microplastics.
b. Studies do not establish a clear correlation between paint and microplastic pollution.
c. California's PaintCare program effectively lowers paint-related discharges.

III. Polymers in paint are not associated with health effects are encapsulated and not available for exposure.

IV. There are no alternatives to polymeric binders that provide comparable performance and many alternatives present heightened environmental and safety concerns.

a. *Latex paint offers stronger durability, shelf life and aesthetic choices compared to natural paint.*
b. *References in the DTSC report do not provide comparative information to assess alternatives.*
c. *Natural paints present environmental and safety considerations raising the possibility of regrettable substitution.*

V. DTSC questions and assertions addressing use of "microplastics" in paint and alternatives.

VI. The Safer Consumer Products Program is not the appropriate regulatory program to address concerns about microplastics in products, especially for paint.

a) *Microplastics are not a "chemical" under the Safer Consumer Products Program.*
b) *"Microplastics" do not meet the listing criteria for candidate chemicals.*
c) *Finished paint products do not meet DTSCs identified hazard characteristics of concern to meet listing criteria for candidate chemicals.*
d) *Risk mitigation strategies under the Safer Consumer Products Program would not effectively address concerns regarding microplastic pollution*

VII. Conclusion

ACA respectfully submits the following:

II. Paint is not a source of microplastic pollution.

ACA strongly recommends excluding paint from further consideration as a source of microplastic pollution under the *Safer Consumer Products Program*. As discussed below, paint particles and ingredients are not "plastic" or "microplastic;" and, in any case, paint is not a significant contributor to microplastic pollution in the environment. California consumers are typically good stewards of leftover paint, utilizing ACA's PaintCare program to manage any leftover product at the end of its life, diverting it from landfills and down-the-drain disposal. Further regulation is redundant, out of scope, and unnecessary.

a. Paint particles are not microplastics.

Note that:

1. Polymers used by the paint industry are not "plastic."
2. Dried paint film is a complex mixture that also is not a "plastic."
3. The polymer component of paint, once in a mixture, is not released or dispersed separately from the mixture.

Paint is a complex mixture of binders, pigments, dyes, extenders or fillers, and additives combined in a carrier phase (e.g. water or a solvent) that evaporates to form a paint film.[3] Polymer chemistries, such as acrylic polymers, alkyd polymers and epoxy polymers, serve as binding agents in paint. Binders are an essential component of all paint and coatings. Binders hold the pigments and all other ingredients in place, allowing for adhesion to a substrate and formation of a dry paint film. Without binders, other ingredients would simply fall off the substrate. Polymers are also used in paint as additives to obtain certain properties, such as soil resistance, corrosion resistance, paint weight reduction, etc.[4] Authoritative bodies in the EU and standard setting organizations have rejected the characterization of paint as "plastic." Most paint polymers are not synthetic polymer microparticles (or "microplastic") as the EU has defined it. The EU also included derogations from its definition of *synthetic polymer microparticle* exempting paint from the ban on SPM (synthetic polymer microparticles).

EU Regulation 2023/2055 (EU SPM Regulation) defines synthetic polymer microparticles:

> Synthetic polymer microparticles: polymers that are solid and which fulfil both of the following conditions:
> (a) are contained in particles and constitute at least 1 % by weight of those particles; or build a continuous surface coating on particles;
> (b) at least 1 % by weight of the particles referred to in point (a) fulfil either of the following conditions:
>
> > (i) all dimensions of the particles are equal to or less than 5 mm;
> > (ii) the length of the particles is equal to or less than 15 mm and their length to diameter ratio is greater than 3.
>
> The following polymers are excluded from this designation:

[3] For a description of the function of paint components, *See Annex to Background Document to RAC and SEAC Opinion on Intentionally Added Microplastics,* p. 366, available online at: https://echa.europa.eu/documents/10162/827ab66d-8f59-9076-e000-064274ba5b5e

[4] The EU RAC and SEAC provide an overview of polymer usage and critical function in paint starting at page 367 of the Annex; *Annex to Background Document, to the Opinion on the Annex XV dossier proposing restrictions on intentionally added microplastics*, page 367, *et. seq*., (ECHA/RAC/RES-O-0000006790-71-01/F, ECHA/SEAC/RES-O-0000006901-74-01/F), December 10, 2020, available online at: https://echa.europa.eu/documents/10162/827ab66d-8f59-9076-e000-064274ba5b5e

> (a) polymers that are the result of a polymerisation process that has taken place in nature, independently of the process through which they have been extracted, which are not chemically modified substances;
> (b) polymers that are degradable as proved in accordance with Appendix 15;
> (c) polymers that have a solubility greater than 2 g/L as proved in accordance with Appendix 16;
> (d) polymers that do not contain carbon atoms in their chemical structure.[5]

DTSC proposed a relatively simplified definition of "microplastic" under its *Safer Consumer Products Program* to provide flexibility when identifying products:

> "Microplastics" are plastics that are less than 5 millimeters (mm) in their longest dimension, inclusive of those materials that are intentionally manufactured at those dimensions or are generated by the fragmentation of larger plastics.[6]

ASTM D883-25 establishes common terminology and definitions associated with plastic. The standard excludes paint from the definition of plastic. ASTM D883-25 is an international standard that was developed in accordance with internationally recognized principles on standardization established in the *Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee*. The exclusion of paint also aligns with the approach taken in the EU, under the EU SPM regulation (EU Regulation 2023/2055).

ASTM D883 defines 'plastic(s)' as,

> *a material that contains as an essential ingredient one or more organic polymeric substances of large molecular weight, is solid in its finished state, and at some stage in its manufacture or processing into finished articles, can be shaped be flow…rubber, textiles, adhesives, and paint, which may in some cases meet this definition, are not considered plastics…*

The EU also included exemptions (derogations) for paint in its ban of SPM (synthetic polymer microparticles) in Regulation EU 2023/2055, considering difficulty in characterizing paint as a microplastic. Derogation 5(b) exempts

[5] EU Commission Regulation EU 2055/2025 (25 September 2023), Annex at p. 11, available online at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R2055

[6] DTSC, *Proposed Regulatory Text, Safer Consumer Products Regulations – Adding Microplastics to the Candidate Chemicals List*, Department of Toxic Substances Control reference number: R-2023-05R.

> *synthetic polymer microparticles the physical properties of which are permanently modified during intended end use in such a way that the polymer no longer falls within the scope of this entry.*[7]

This derogates the film-forming polymer particles in paints since on drying the polymers become chemically bound in a solid matrix. That is, the EU has determined that it need not address the issue of whether paint polymers are microplastics, since they are clearly *not* microplastics once incorporated into a film-forming matrix.

Similarly, EU derogation 5(c) exempts paint by exempting:

> *synthetic polymer microparticles which are permanently incorporated into a solid matrix during intended end use.*[8]

The EU's determination under the SPM Regulation is recognized at page 22 of *Faber, et. al.*,[9] as DTSC has cited in the annex of its report. *Prasittisopin, et. al.*, also cited by DTSC, note uncertainty about whether ingredients in paint can be characterized as "plastic," concluding, "Further study is required to determine whether these and other components of paint should be categorized as microplastics."[10] As noted above, the EU has indicated that this issue is moot once ingredients are in a film-forming matrix. The paint film is not a "microplastic" or a "plastic."[11]

b. Studies do not establish a correlation between paint and microplastic pollution.

As noted by *Faber, et. al.,* cited in DTSC's report, several studies have attempted to estimate the contribution of paint to microplastic pollution. *Faber, et. al*. explains, "However, they (studies) cannot be used to draw quantitative conclusions as the sampling and analytical methodologies are not standardized and thus difficult to

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[7] *EU SPM Regulation* (Regulation EU 2023/2055), Derogation 5(b) at p. 12, available online at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R2055

[8] *EU SPM Regulation* (Regulation EU 2023/2055) Derogation 5(c) at p. 12, available online at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R2055

[9] *Faber, et. al., Paints and microplastics Exploring recent developments to minimize the use and release of microplastics in the Dutch paint value chain* (RIVM report 2021-0037, 2021), cited by DTSC, *Background Document on DTSC's Microplastics in Consumer Products Research* (November 2025), Annex listing number 117.

[10] *Prasittisopin, et. al.* (2023). *Microplastics in construction and built environment. Developments in the Built Environment.* Science Direct (22 June 2023) at p. 8, available online at: https://doi.org/10.1016/j.dibe.2023.100188; cited by DTSC, *Background Document on DTSC's Microplastics in Consumer Products Research* (November 2025), Annex listing number 118.

[11] Another EU body reached a similar conclusion, excluding paint from further consideration under a sustainability initiative. An EU panel of experts, convened under the *EU Ecodesign for Sustainable Products Program*, recently concluded that paint has low impact and low improvement potential compared to other products, when evaluating sustainability characteristics of products including association with microplastic pollution. The panel recommended excluding paint from the current workplan, noting that regulatory efforts would be better suited for textiles, tires and other products. See *the Discussion Document on ESPR and Energy Labeling Workplan (Feb. 2025),* available on the website of the *Group of Experts on Ecodesign for Sustainable Products and Energy Labeling*, available online at: https://ec.europa.eu/transparency/expert-groups-register/screen/meetings/consult?lang=en&meetingId=59861&fromExpertGroups=3969

compare."[12] That is, the contribution of paint to microplastic pollution is unknown. Studies attempting to quantify contribution by product typically have not addressed whether paint particles can be characterized as "microplastics."[13]

While not addressing how to characterize plastic and paint particles, RIVM (the Netherlands Department of Environment) published a study in 2024 in part to update a prior report by *Faber, et. al.*, cited by DTSC. The updated RIVM study ranks paint as a minor source of microplastic pollution in the environment. Significantly higher contributors include tire wear, pre-production pellets, *macroplastic* pollution, textiles, intentionally produced microparticles and packaging.[14]

c. California's PaintCare program effectively lowers paint-related discharges.

DTSC raises concerns about used paint being disposed down the drain as a primary source of microplastic pollution. Estimates of paint discharges likely vary greatly by location and local practices. Down the drain disposal in California is minimized by California's PaintCare program. California's Department of Resources Recycling and Recovery (CalRecycle) oversees the PaintCare program, which ensures that all California residents have convenient and free access to drop off locations for the management of leftover architectural paint in the state. This is a highly successful initiative supported by the American Coatings Association. Because of a large number of permanent collection sites for paint within the state, paint discharges in California are likely to be significantly lower than assumed discharges used in microplastics-related studies.[15]

PaintCare operates a well-established and accessible service that provides an easy, convenient and free alternative to improper disposal. In its most recent annual report evaluating 2024 program operation, PaintCare reports collecting a little over 3.5 million gallons of paint while facilitating 815 year-round sites for consumer drop-off of used paint. The program also collects paint from about 140 part-time drop-off sites. The program conducts a variety of outreach and advertising to raise awareness of free and

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[12] *Faber, et. al.,* p. 16. (*Faber, et. al., Paints and microplastics Exploring recent developments to minimize the use and release of microplastics in the Dutch paint value chain* (RIVM report 2021-0037, 2021), cited by DTSC, *Background Document on DTSC's Microplastics in Consumer Products Research* (November 2025), Annex listing number 117.)

[13] For example, *Faber, et. al.,* cited by DTSC, is a study by the Netherlands Department of Environment that does not address the issue of whether paint particles can be classified as "plastic" or "microplastic." *Prasittisopin, et. al.,* also cited by DTSC, notes uncertainty about whether ingredients in paint can be characterized as "plastic," concluding, "Further study is required to determine whether these and other components of paint should be categorised as microplastics."

[14] Quick, J.T.K., et. al., *Emission of Microplastics to Water, Soil, and Air What can we do about it?* RIVM report 2024-0106, see p. 12, "Overview of Emissions from All Sources," available online at: https://www.rivm.nl/bibliotheek/rapporten/2024-0106.pdf.

[15] CalRecycle's Paint Recycling plans are available on its website at: https://calrecycle.ca.gov/paint/program/ Annual reports addressing PaintCare implementation in California are available on PaintCare's website at: https://www.paintcare.org/states/california/.

convenient options for consumers to appropriately dispose of their leftover and unwanted paint. It also facilitates a large-volume on-site collection service of used paint. Common users of this service include contractors, builders, property managers, academic institutions, and homeowners. In parts of Los Angeles and San Bernardino counties, PaintCare also provided pick-up services to those with at least 50 gallons of PaintCare products, lower than the usual minimum of 100 gallons. These lower volume pick-up services are reported as part of the total 1,052 pickups in 2024.[16]

ACA strongly recommends that DTSC exclude paint from consideration under the *Safer Consumer Products Program*. Challenges related to characterization of paint particles as "plastic" and challenges related to quantification of paint-related discharges indicate that pursuing regulation of paint particles or ingredients as microplastics would not effectively control microplastic pollution in the environment. International precedent in the EU excluding paint from microplastic-related regulatory programs supports that paint should not be included within DTSC's regulatory agenda. Regulation of paint as a "microplastic" would be misguided and unnecessary.

III. Polymers in paint are not associated with health effects since they are not available for exposure.

DTSC indicates concerns related to health effects as a reason for listing microplastics as a candidate chemical.[17] Any dispersed paint degradant or discharges would not cause health effects associated with exposure to plastic particles due, in part, to paint not being a "plastic" or "microplastic." Another consideration is that the polymer component of paint remains embedded in a paint matrix minimizing exposure. This principle has been recognized by California's OEHHA (Office of Environmental Health Hazard Assessment) and IARC (International Agency for Research on Cancer).

A key consideration for hazard classification is the "availability for exposure," presented by particulates when "bound" in a wetted-paint or coatings mixture. Given the published findings of IARC and California's OEHHA, the "availability for exposure" factor has resulted in clear moderating statements on carcinogen classifications. IARC's monographs, for example, include the following mitigating statement for carbon black and titanium dioxide as present in paints and coatings:

> FOR CARBON BLACK
>
> "Operators in user industries who handle fluffy or pelleted carbon black during rubber, ***paint and ink production are expected to have significantly lower exposures to carbon black than workers in carbon***

[16] California's Paint Stewardship Program, 2024 Annual Report, available online at: https://www.paintcare.org/wp-content/uploads/docs/ca-annual-report-2024-updated.pdf

[17] DTSC, *Technical Document for the Proposal to Add Microplastics to the Candidate Chemicals List* (DTSC Document No. R2023-05R-Ra).

black production. Other workers in user industries who handle it occasionally have little opportunity for exposure.

And further…

> ***"End-users of these products (rubber, ink or paint) are unlikely to be exposed to airborne carbon black particles, which are bound within the product matrix."***
>
> "Many workers were exposed to carbon black in bound matrices such as paint or rubber. It is probable that workers exposed to carbon black in this study were exposed to lower levels than those in other studies."
> FOR TITANIUM DIOXIDE
>
> ***"No significant exposure to primary particles of titanium dioxide is thought to occur during the use of products in which titanium dioxide is bound to other materials, such as in paints."***[18]

California's OEHHA issued similar language for classification under California's *Safe Drinking Water and Toxic Enforcement Act (Prop. 65)*, when issuing a Safe Use Determination for crystalline silica.

> "Most of the crystalline silica particles in the paints were above respirable size (10 µm) and partitioned out of the respirable paint aerosol when the aerosol was generated. This is the likely reason for the lack of crystalline silica detection in respirable wet paint aerosol under these testing conditions. Since NPCA (now ACA) took a reasonable approach in its effort to measure crystalline silica from the spraying activity, i.e., the pooling of filters, ***OEHHA believes the wet aerosol portion of the exposure may be much less toxicologically significant than that produced from the dusts that result from sanding.***
>
> A number of factors may tend to increase or decrease estimates of exposure relative to the approach used to develop the exposure levels described above. ***We believe, on the whole, that the assumptions made are likely to have resulted in overestimates of exposure levels from the average use of interior flat latex paint."*** [19]

[18] IARC Monograph on Carbon Black and Titanium Dioxide, available online at: http://monographs.iarc.fr/ENG/Monographs/vol93/index.php

[19] OEHHA "Safe Use Determination for Crystalline Silica, available online at: http://www.oehha.org/prop65/CRNR_notices/safe_use/sylicasud2.html

Considering these authoritative findings, based on the lack of exposure and risk associated with particles integrated in a wetted mixture, it is not appropriate to identify paint as a source of hazardous microplastic pollution.

IV. Alternatives to polymeric binders lack comparable performance and present other environmental and safety concerns.

DTSC seeks additional information about alternatives to polymeric binders used in architectural paint. DTSC requests information about, "Whether paints can be formulated with non-plastic alternatives to primary microplastics (e.g., mineral, clay, or chalk paints) that can provide the same performance as microplastics-based interior paints."[20] As described above, scientific and regulatory literature does not support the characterization of paint components and products as "plastic."

Noting this objection, ACA members provided information comparing natural mineral-based paints (including clay, chalk, and milk/casein paints) to modern low or zero VOC latex paints (waterborne synthetic polymer paints). The composition of latex paint generally affords inherent performance advantages affecting durability, stain/cuff resistance and shelf-life relative to these properties inherently resulting from the composition of mineral-based paints. The composition of latex paint generally allows greater options for tinting, color and sheen. The difference in composition between natural and latex paints raise varying sets of environmental concerns. Natural paint requires increased resource use from more frequent recoating, increased packaging use and transport-related emissions. Natural paints also raise safety concerns from increased spoilage. Natural, mineral paints also have a significantly higher pH to maintain shelf-life, raising concerns for skin sensitization.

a. The composition of latex paint generally offers stronger durability, shelf life and aesthetic choices compared to natural paint.

Latex, architectural paint provide superior durability and resistance to chipping, abrasion, and moisture. Latex paint forms a durable, relatively non-porous film, providing strong resistance to stains, scuffs, and everyday soiling. Many premium latex interior paints are explicitly marketed as "scrubbable" or stain-resistant, meaning dried spills (like crayon, wine, etc.) can be cleaned off with mild detergent without damaging the paint. The acrylic polymers in latex create a sealed surface that inhibits deep absorption of contaminants. Additionally, latex finishes (especially in mid-sheen like eggshell or satin) tend to resist burnish or scuff marks from shoes or furniture; any marks usually remain superficial and can be wiped off. Paint formulators use standardized testing to measure durability, such as ASTM D2486 (scrubbing resistance) or ISO 11998 (wet abrasion class). A manufacturer of a top-tier latex paint would manufacture so paint survives hundreds or thousands of scrub cycles before showing wear.

[20] DTSC, *Background Document on DTSC's Microplastic in Consumer Products Research* (November 2025), p.12.

By comparison, natural, mineral paints (including chalk and clay paints) form a soft, porous film since they lack a polymer binder. Their porous, matte surfaces readily absorb liquids and oils. For example, clay-based wall paint can stain on contact with grease, and stains cannot be fully washed out without damaging or removing the paint. Chalk paint on a kitchen cabinet would likely pick up fingerprints and food splatters if left unsealed. Moreover, scuff marks on these paints can't be simply wiped away – the scuff may remove or burnish the matte finish. Manufacturers of milk and chalk paints often warn that a protective topcoat is necessary in kitchens, bathrooms, or children's rooms to guard against moisture and stains. Without such protection, even a damp cloth can lift the color while trying to clean a spot.

Natural, mineral paints have significantly lower shelf-life and are subject to more frequent spoilage. One practical advantage of latex paints is their relatively long shelf-life in storage. Unopened cans of latex paint can remain usable for up to about 10 years when properly stored, and *opened* cans can last around 2–5 years sealed tightly between uses. Clay and chalk paints can last up to 5 years if unopened and 1-2 years after opening. Milk paint can be stored as a powder, but must be used immediately after mixing, sometimes spoiling within hours.

Latex paints offer a wide array of color and sheen options. With tinting frequently offered at the point of sale, color choices and variations within a color design are infinite. Natural paints are significantly limited in color and sheen. They are usually used for niche markets seeking a "vintage" color effect. Chalk paint, for example, provides a "chalky" effect as the name suggests. Natural paints are limited to a matte finish. They are usually used in niche markets that desire a natural, matte aesthetic. Natural paints cannot provide a gloss or even a satin finish. The chemistry that would create a sheen (more binder, less absorbent filler) would move it toward a conventional paint. Chalk and clay paints are almost always flat. If a sheen is desired, a separate clear topcoat (e.g. a gloss polymer varnish or a wax buffed to a slight sheen) must be applied on top, effectively creating a different finish layer.

b. References in the DTSC report do not provide comparative information to assess alternatives.

ACA also cautions against using marketing statements to identify alternatives to latex paint. Environmental marketing statements are regulated by the Federal Trade Commission, as described in the FTC's Green Guides.[21] The FTC allows claims that a paint is "free of" a chemical (e.g. "plastic free") if it meets FTC's trace level of emissions test within six hours after application.[22] Although the FTC has not addressed

[21] *See generally* Federal Trade Commission, *Environmentally Friendly Products – FTC's Green Guides* website, available online at: https://www.ftc.gov/news-events/topics/truth-advertising/green-guides

[22] This is explained in consent orders issued by the FTC in actions related to paint companies. Consent orders and related explanation are available through an online FTC press release, *Paint Companies Settle FTC Charges*

the issue of microplastics, a manufacturer could interpret FTC's Green Guides to allow a "plastic free" statement if chemical paint *emissions* do not contain plastic. DTSC should note that such interpretation would raise concerns about whether *microplastic emissions* are *chemical emissions* under FTC's guidance. Further, as noted in Section II above, the characterization of paint particles and polymers as "plastic" is not clearly supported by the weight of scientific evidence. As such, a manufacturer may truthfully label latex paint as "plastic free."

c. *Natural paints present environmental and safety considerations raising the possibility of regrettable substitution*.

Other than performance differences, natural paints can also present an alternative set of environmental and safety concerns, due to high pH (associated with skin sensitization), spoilage (associated with exposure to hazardous mold and bacteria) and more frequent repainting (associated with increased resource use, transport and production related emissions and packaging waste). Decreased performance also reduces the overall protection provided to surfaces.

Faber, et. al., cited by DTSC, warns about regrettable substitution, noting that mineral-based paints, i.e. without polymers, may contain graphene substitutes.[23] *Faber, et. al*., explains that comparative analysis has not been conducted to avoid regrettable substitution, to conclude:

> *In addition to functionality, the environmental and health impacts, including potential microplastic emissions, of (alternative) paints and products should be researched further to avoid any regrettable substitution*.[24]

The EU also considered alternatives when evaluating paint for regulation under the EU Synthetic Polymer Microparticle Regulation (EU Regulation 2023/2055). When assessing alternative binders, the EU Risk Assessment Committee (RAC) considered solvent borne paints, distemper paints, linseed oil, egg tempera and others but ultimately concluded that alternatives presented other risks and non-optimal performance compared to existing polymeric binders.[25]

. . . (July 2017), available online at: https://www.ftc.gov/news-events/news/press-releases/2017/07/paint-companies-settle-ftc-charges-they-misled-consumers-claimed-products-are-emission-voc-free-safe

[23] *Faber, et. al.* at p. 28.

[24] *Faber, et.* al. at p. 39.

[25] The RAC and SEAC consider inefficacy of alternatives at page 380: Committee for Risk Assessment (RAC) and Committee for Socio-Economic Analysis (SEAC), *Annex to Background Document, to the Opinion on the Annex XV dossier proposing restrictions on intentionally added microplastics*, page 380, (ECHA/RAC/RES-O-0000006790-71-01/F, ECHA/SEAC/RES-O-0000006901-74-01/F), December 10, 2020, available online at: https://echa.europa.eu/documents/10162/827ab66d-8f59-9076-e000-064274ba5b5e

V. DTSC questions and assertions addressing use of "microplastics" in paint and alternatives.

Paint manufacturers do not add primary microplastics to water-based interior wall paint (or other types of paint, typically). DTSC poses questions to industry in its report assuming that paint manufacturers add primary microplastics to its products. As described above, the polymer components of paint typically are not "microplastic" or "plastic" with most paint polymers falling outside of the EU's definition of synthetic polymer microparticle and the international standard definition in ASTM D883. Paint polymers are also embedded in a paint film. They are not dispersed separately. Further, paint "flakes" or finished, dried paint is not a microplastic. There is little to no evidence that paint degradants pose any kind of concern for microplastic pollution.

In any case, a regulation against addition of "microplastics" in water-based architectural paint would either a) have no effect since companies are not adding microplastics; or b) effectively ban latex, architectural paint due to an overly vague and broad definition of "microplastics" encompassing all polymeric raw materials used in paint formulation. Considering the difficulty in identifying anything called "microplastics" as a raw material coupled with possible retroactive classification of paint degradants as secondary microplastics, paint manufacturers can only respond to DTSC's inquiries below noting that paint manufacturers do not add primary microplastics to their products:

ACA provides the following responses to DTSC's questions and points:

- DTSC: Whether manufacturers are developing non-plastic alternatives to primary microplastics in paints.

  RESPONSE: The paint industry does not add primary microplastics to its products.

- DTSC: Obstacles to replacing primary microplastics in paints.

  RESPONSE: The paint industry does not add primary microplastics to its products.

- DTSC: Whether paints can be formulated with non-plastic alternatives to primary microplastics (e.g., mineral, clay, or chalk paints) that can provide the same performance as microplastics-based interior paints.

  RESPONSE: The paint industry does not add primary microplastics or plastics to its products. As described above, modern latex architectural paint formulas provide high performance and wide aesthetic variety without significant environmental and safety concerns.

- DTSC: Types of paint (e.g., interior, exterior, road, or marine) that it would be feasible to switch to non-microplastics alternatives and still meet performance requirements.

  RESPONSE: The paint industry does not add primary microplastics to its products. This question is also beyond DTSC's defined product scope, defined as water-based interior wall paint. Regardless of paint type, the high-performance paints available today could not be manufactured without polymeric binders. These high-performance paints play a critical role in the protection and preservation of California's infrastructure, homes, and consumer products. It is difficult to fathom the detriment to California from lost environmental benefits, without the protection and preservation attributes of today's high-performance paints.

VI. The Safer Consumer Products Program is not the appropriate regulatory program to address concerns about microplastics in products, especially for paint.

DTSC's overly broad definition of "microplastics" goes beyond what is anticipated by the *Safer Consumer Products Program*, resulting in possible restriction of paint polymers, a critical raw material, without providing any clear environmental or public health benefit. When enacting California's *Green Chemistry Law,* the legislature established important procedural guardrails to guide DTSC towards addressing a hazardous chemical or groupings of similar chemicals with a clear chemical identity and specific toxicity endpoints. Clarity in chemical identification provides the public and industry with notice related to chemical use. By listing microplastics, a category of vaguely defined materials, as a chemical grouping, DTSC ignores the statute's procedural guardrails, indicating it will provide requisite specificity about chemicals at issue at later stages, after product selection. This approach is not supported by the regulations and lacks specificity of hazard identification to notify manufacturers and the public of candidate chemicals. Further, the listing does not provide product manufacturers with adequate notice regarding potential chemical use.

Paint manufacturers typically do not add microplastics to paint products. Dried paint also is not a microplastic, as noted in ASTM D883 and in derogations to the EU SPM Regulation. Because of the lack of clear identification of a chemical of concern, ACA encourages DTSC not to rush towards listing paint as a priority product. Instead, ACA recommends DTSC take the time to understand those sources of microplastic pollution that could be associated with toxicity. Without such tempered consideration, DTSC risks regulating materials that are not clearly sources of microplastic pollution in the environment.

a) Microplastics are not a "chemical" under the Safer Consumer Products Act

A "chemical" under the act can be a single substance or a mixture of substances provided that all substances at issue have a particular *molecular identity*. Consideration of *molecular identity* is critical because it provides clarity regarding the subject of regulatory controls, providing notice to the public and industry, while providing clarity regarding effective regulatory controls. In its *Initial Statements of Reasons* supporting its proposed definition of microplastics, DTSC has not identified a chemical with a *molecular identity* for listing as a candidate chemical. Instead, DTSC ignores chemical identification, focusing on explaining criteria for listing as a *candidate chemical*. A prerequisite to listing as a *candidate chemical* is being able to identify the chemical.

California's Safer Consumer Products Regulations define a chemical at 22 CCR § 69501.1[26]:

> "Chemical" means either of the following:
>
> 1. An organic or inorganic substance of a *particular molecular identity*, including any combination of such substances occurring, in whole or in part, as a result of a chemical reaction or occurring in nature, and any element, ion or uncombined radical, and any degradate, metabolite, or reaction product of a substance with a particular molecular identity; or
>
> 2. A chemical ingredient, which means a substance comprising one or more substances described in subparagraph 1.
>
> (italics added for emphasis)

Implementing regulations further specify an *inclusive* list of considerations defining *molecular identity*, requiring DTSC consider all listed characteristics rather than choosing one or a few. *Molecular identity* indicates consistency of the following characteristics:
1. Agglomeration state;
2. Bulk density;
3. Chemical composition, including surface coating;
4. Crystal structure;
5. Dispersability;
6. Molecular structure;
7. Particle density;
8. Particle size, size distribution, and surface area;
9. Physical form and shape, at room temperature and pressure;
10. Physicochemical properties;

[26] 22 CCR Section 69501.1 is available online at: https://govt.westlaw.com/calregs/Document/IAD7F28F45B6111EC9451000D3A7C4BC3?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)

11. Porosity;
12. Solubility in water and biologically relevant fluids;
13. Surface charge; and
14. Surface reactivity.[27]

DTSC provides no analysis or consideration of these factors. This is because "plastics" or "microplastics" do not have a discreet molecular structure, resulting in wide variability in physical characteristics of particles that may fall under consideration. Plastics, being a vaguely defined set of materials, do not meet this definition of a "chemical" since plastic materials have highly variable molecular identities.

b. "Microplastics" do not meet the listing criteria for candidate chemicals.

Microplastics comprise a broad range of materials with varying structures and properties. Products that may generate secondary microplastics consist of varying polymer chemistries, often with additives and other chemical ingredients. Due to this complexity, microplastics, as a general group of materials, do not meet the listing criteria for candidate chemicals. Variations within the category of microplastics emphasize the importance of scoping DTSC's definition to those demonstrably toxic materials whose use results in microplastics pollution. Since related science is still being developed to understand toxicity of microplastics, ACA recommends not proceeding with regulation of products under the *Safer Consumer Products Program*. In the alternative, DTSC should restrict chemical identification to *toxic* microplastics with a discreet molecular identity. These scoping limitations are critical to identifying those products associated with adverse impacts.

The listing criteria for candidate chemicals is described at 22 CCR § 69502.2(b), consists of:

- Adverse Impacts (hazard traits, toxicological impacts, aggregate effects, etc.).
- Consideration of impact on sensitive populations, habitats, species, etc.
- Potential for widespread adverse impacts.
- Potential exposures.

In its statement of reasons, DTSC identifies adverse impacts as environmental persistence, mobility and particle size and dimensions. These physical characteristics are not adverse impacts. They do not indicate toxicological effects or aggregate effects.

In certain instances, materials display extreme persistence and mobility, indicating increased potential for exposure. But even here, the toxicological impacts of extreme persistence and mobility are unknown. DTSC's interest in regulating microplastics as a

[27] 22 CCR Section 69501.1 is available online at: https://govt.westlaw.com/calregs/Document/IAD7F28F45B6111EC9451000D3A7C4BC3?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)

broad category is premature. At a minimum, the definition should be scoped to materials with extreme persistence and mobility, to prioritize products with potential for adverse impacts.

DTSC focuses further justification in its *Technical Document* and *Initial Statement of Reasons* on persistence and mobility of microplastics and exposure potential. Exposure potential is marked by presence in household dust, air and drinking water and presence in human placenta, infant feces and adult organ tissue. DTSC also cites a study noting plant intake of microplastic particles. Recognizing DTSC's concerns related to presence, ACA recommends taking the time to scope the definition of microplastics to emphasize particles associated with adverse impacts, being a specific toxicity endpoint.

c) *Finished paint products would not display DTSCs identified hazard characteristics of concern to meet listing criteria for candidate chemicals*.

Physical characteristics of a paint matrix vary from DTSC's "plastic" particle characterization, as noted in DTSC's analysis of candidate chemical listing criteria. Due to vague molecular identity, industry cannot identify paint ingredients that meet DTSC's candidate chemical listing criteria of persistence, mobility and exposure potential. Regardless, any formulated paint mixture if dispersed in the environment would not display the same degree of hazard.

Both OEHHA and IARC have determined that ingredients in a wetted paint matrix are not available for exposure, resulting in clear mitigating statements related to components in a paint mixture. See the discussion in Section III above. Paint should be excluded from further consideration based on this "mixture effect" alone since any restriction on paint would not address a clearly defined hazard.

d) *Risk mitigation strategies under the Safer Consumer Products Program would not effectively address concerns regarding microplastic pollution*.

The typical alternatives analysis and chemical substitution approach under *the Safer Consumer Products Program* is not an effective method of addressing microplastic pollution in the environment, unless narrowly tailored to products associated with the greatest amount of microplastic pollution. The Netherlands Ministry of Environment ranked effective regulatory strategies, from greatest potential to reduce microplastic pollution to the least potential as follows:[28]

- Restricting microplastic consumption (for instance by reducing single-use plastics, or by using alternative materials);

[28] Quick, J.T.K., et. al., *Emission of Microplastics to Water, Soil, and Air What can we do about it?* RIVM report 2024-0106, see p. 12, "Overview of Emissions from All Sources," available online at: https://www.rivm.nl/bibliotheek/rapporten/2024-0106.pdf.

- Increasing treatment of tyre wear in road runoff, specifically outside of urban areas;
- Reducing tyre wear (for instance by innovative tyre design or lowering mileage);
- Cleaning up macroplastics in the environment;
- Reducing pellet loss at industrial plants;
- Reducing plastic polymer use in technical textiles;
- Improved maintenance of technical textiles in order to reduce in use releases;
- Improved road cleaning to capture tyre wear;
- Preventing spillage of pellets during transport;
- Reducing polymer-based material use in agriculture, for instance by using more biodegradable plastics.

The ministry explains that the most effective methods would address the greatest contributors of microplastic pollution, identified in the Dutch and EU environments as tire wear, pre-production pellets and macroplastic pollution. Regulatory strategies related to paint are not even indicated as a low-ranking microplastic pollution mitigation strategy. Paint should be excluded from further consideration under the *Safer Consumer Products Program*.

RIVM's analysis also indicates that *the Safer Consumer Products Program* is not an effective regulatory program for the purpose of addressing microplastic pollution. Article 6 of implementing regulations provides chemical-specific regulatory responses that include product end-of-life management, consumer information, etc.[29] These requirements are designed to address a discreet chemical found in a product. While DTSC has not identified a clear molecular identity, regulatory responses in this program do not provide the flexibility required to develop an effective strategy to address microplastic pollution. Regulation under the *Safer Consumer Products Program* would not implement effective strategies RIVM identifies such as reducing single-use plastics, controlling and/or treating tire-wear road run off, reducing pellet-loss at industrial sites, etc.

VII. Conclusion

ACA strongly recommends that DTSC not propose listing paint as a priority product for microplastic pollution. Paint manufacturers typically do not add microplastics to waterborne, architectural paint, nor is dried paint film a "microplastic." Scientific literature does not identify paint as a significant source of microplastic pollution and any down-the-drain discharges are already minimized in the state due to California's PaintCare program. Please consider the following supporting points:

[29] Safer Consumer Products Program Regulations, 22 CCR §69506, available online at: https://govt.westlaw.com/calregs/Browse/Home/California/CaliforniaCodeofRegulations?guid=IAE83EEC05B6111EC9451000D3A7C4BC3&originationContext=documenttoc&transitionType=Default&contextData=(sc.Default)

- Scientific consensus does not indicate that paint ingredients or finished product can be classified as a "microplastic."
- Most paint polymers are not microplastics under the EU SPM Regulation or ASTM D883.
- ASTM D883-25 explicitly exempts paint from the definition of *plastic*.
- The EU also included exemptions (derogations) for paint in its ban of SPM (synthetic polymer microparticles) in Regulation EU 2023/2055.
- Studies have no clear consensus regarding degree of contribution to microplastic pollution from paint (assuming particles can be classified as "microplastic"), with the Netherlands Department of Environment estimating that paint is not a significant source of microplastic pollution.
- There is no scientific consensus or conclusive evidence that down-the-drain disposal of paint poses a concern for microplastic pollution. Down the drain disposal in California is minimized by California's PaintCare recycling program. Paint is not a significant source of microplastic pollution in the State.
- The EU RAC and SEAC further note the lack of alternatives, low potential for improvement and uncertainty regarding environmental impacts of restricting paint polymers as an SPM (synthetic polymer microparticle).
- A panel of experts under the *EU Ecodesign for Sustainable Products Program* concluded that paint has low impact and low improvement potential compared to other products when evaluating sustainability metrics, including those related to microplastic pollution.
- Polymers in paint are not available for exposure, so the polymer is not associated with health effects.
- The EU RAC and SEAC also conclude that alternatives to latex paint present other risks and non-optimal performance when compared to existing polymeric binders. This finding is echoed in *Faber, et. al.*, cited by DTSC.
- Marketing statements from manufacturers of "natural paint" fail to recognize critical functionality of polymeric binders affecting significant performance differences between low-VOC / VOC free latex paint and "natural paint."
- Marketing statements from manufacturers of "natural paint" fail to address environmental and safety concerns associated with "natural paint."

- DTSC has not identified a discreet chemical or molecular identity as required for listing under the *Safer Consumer Products Program*. This is a critical procedural step that impacts notice and DTSC's ability to develop effective regulations.
- Not all materials under consideration as "microplastic" meet the listing criteria for candidate chemicals.
- Paint and/or paint components do not meet the listing criteria as a "candidate chemical," in part due to the "mixture effect" reducing or eliminating hazard associated with a paint from that associated with individual components. Paint should be eliminated from further consideration on this basis alone.
- Microplastics in general are not suitable for restriction under the *Safer Consumer Products Program* since they do not have a discreet chemical identity. The *Safer Consumer Products Program* is intended to address harmful ingredients during product manufacture. Paint does not pose a significant concern for "microplastic" pollution during any stage of its lifecycle.
- When evaluating effective risk mitigation strategies, the Netherlands Department of Environment did not identify strategies related to paint as being effective since paint is not a significant contributor to microplastic pollution.

ACA appreciates the opportunity to comment on DTSC's *Background Document*. Please feel free to contact me if I can provide any additional information.

Respectfully submitted,

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