Personal Care Products Council
Committed to Safety, Quality & Innovation

May 28, 2020

Via Electronic Mail
Joe Calavita
Manager, Consumer Products Implementation Division
California Air Resources Board
Sacramento, CA 95812-0806
joe.calavita@arb.ca.gov
csmrprod@arb.ca.gov

RE: Additional Comments on the Draft Proposed Amendments to ARB's Consumer Products Regulations

Dear Mr. Calavita

The Personal Care Products Council (PCPC) is submitting the following comments on the California Air Resources Board (CARB) draft proposed rule for Article 2 of its Consumer Products Regulation, which was introduced during CARB's "Public Webinar for Proposed Amendments to the Consumer Products Regulations" held on April 14, 2020.

Based in Washington, D.C., PCPC is the leading national trade association representing the cosmetic and personal care products industry. Founded in 1894, PCPC's more than 600 member companies manufacture, distribute, and supply the vast majority of finished personal care and OTC drug products marketed in the United States. As the makers of a diverse range of products that millions of consumers rely on every day, our member companies have a strong interest in the in the scope and applicability of this regulation.

INTRODUCTION

Since the inception of California's Consumer Product Regulations in 1989, PCPC and its members have provided thoughtful feedback on CARB's rulemaking proposals to help CARB advance its objectives which target the reduction of VOC's and ozone forming potential.

PCPC hopes that its comments will continue to advance a practical and effective regulatory framework that promotes sustainable innovation while respecting human health and the environment in the state of California and beyond.

CARB's current proposal seeks to establish or reduce VOC emission levels for personal care product categories and to make changes in other areas of importance to our member companies. The proposed levels pose significant formulation and efficacy challenges: companies must

ensure that any alternative formulation, which meets the proposed regulation, does not result in deleterious impacts to safety, product integrity, stability, efficacy, or consumer acceptability. In order to comply with new regulations, industry also tries to avoid the substitution of current ingredients with others which may be potentially more damaging to the environment.

In a document dated February 10, 2020, PCPC provided its initial comments on the draft proposal to CARB. In a spirit of cooperation and with a sincere desire to improve the proposed regulation, PCPC respectfully submits the following additional comments for your consideration.

VOC EMISSION LIMITS

I. HAIR FINISHING SPRAY

We appreciate the proposal from CARB that hair finishing sprays, more commonly known as hair sprays, will be allowed to maintain the practice of allowing some secondary styling claims to be made on products, as long as the primary purpose of the product is clearly stated as holding the styled hair in place. This is consistent with CARB's previous guidance outlined in its 2011 Advisory document.

The efficacy of a hair spray typically depends on the even application of a film former, or resin, to previously styled hair.

From a technology point of view, it is critical to ensure that the resin in the product is solubilized and can be sprayed out evenly to provide the thinnest and most even layer possible. Because of the need to cover the hair completely, a spray format, either pump or aerosol, is the optimal method for evenly distributing the resin.

a. Proposed VOC Limits: 50% by 2023 and 45% by 2029

The results of the 2013-2015 product surveys compiled by CARB show that, of the 1165 hair finishing products reported, there were 76 unique formulations with VOC levels at or below 45%. As reported by CARB, the average VOC content was 38% for the 26 aerosols in this group and 19% for the remaining 50 pump spray formulas.

PCPC members have confirmed that VOC levels of 40-45% are currently marketed only for flexible hold hair sprays, which typically use less resin and contain more water than higher hold products. Medium/high hold hair sprays use greater levels of resin, and consumers expect them to dry quickly to immediately lock the hair style in place.

Since some of the low resin, flexible hold products already meet the 45% standard, industry focus has been on evaluating the ways that medium/high hold products can meet 50% and ultimately 45% VOC levels while maintaining consumer acceptability.

As discussed in our earlier comments, several options exist for evaluating the potential for adopting such low VOC standards for the medium/high hold hair sprays. Unfortunately, each option, while theoretically providing an avenue to achieve the VOC standard, also may give rise to serious problems of product safety, efficacy, and consumer acceptability. All these issues need to be addressed.

- Simply reducing the amount of solvent (alcohol) in these products and increasing the amount of water is conceptually feasible, although the solvent level must still be adequate to solubilize the resin in medium/high hold formulations.
    - Additional water in the formulation could lead to unacceptable style retention / hold, longer dry times, and larger droplet sizes, leading to spotty coverage of the hair and potentially clogging of the valves and pumps. Consumer acceptability of such high resin products would be poor if any of these conditions occur, as the ability of the product to hold the hair in place would be significantly impaired.
    - Increasing amounts of water will lead to greater hydrolysis of the polymer/resin, significantly reducing the effectiveness of the hair spray to hold the hair in place.
    - Bulk susceptibility to microbiological issues will increase as water level increases.
    - As water level increases, manufacturers must ensure that there is not an increase in corrosion potential for aerosol containers.

- Increasing the level of non-VOC propellants such as hydrofluorocarbons, specifically HFC-152a, or compressed air represent additional potential routes to achieve the new VOC limits.
    - Compressed air propellants generally deliver coarser/larger droplet size sprays and can result in significantly poorer spray properties as the product is used. Even more critically, such systems may not provide enough pressure consistently to dispense all the product from the container. As our comments of February 10, 2020 indicated, the technology for this route for hair sprays is not currently viable.
    - Since compressed air, due to its very low mass, is given little weighting when calculating the VOC of a formulation, it is likely that the VOC of the remaining formulation ingredients will be significantly above the VOC limit for the category and thus not meet the regulations, either current or proposed (even though the VOC emitted/use may be significantly less than current products).
        - CARB has expressed a willingness to amend its rules to accommodate compressed air aerosols, but, to date, no proposal has been offered other than to submit proposals via an Innovative Product Exemption or Alternative Control Plan, both of which have significant bureaucratic requirements.
    - Increasing the use of HFC-152a is a likely scenario to reduce VOC emissions for aerosols, since HFC-152a is already in widespread use for this category. However,

such increases would have detrimental impacts on the environment due to increased global warming potential.

- Hair Sprays which are marketed in a pump spray format make up a small but significant part of the hair spray market. For a pump spray format, the proposed VOC standard will be more difficult to achieve than for aerosols, simply because there are no propellants which can be replaced with a non-VOC such as HFC-152a. Increasing the water content or adding LVP-VOC's to lower VOC will lead to many of the issues already described above.
    - Increased water poses an additional issue in some pump sprays, as the solubility of the resins is dependent on the solvents. A reduction in these solvents will lead to decreased solubility of the resin in the product, potentially causing clogging of the valves.

b. PCPC Conclusions and Recommendations

As only 1.2% of aerosol hair spray formulations (from the 2015 survey) currently would meet a 45% limit, and, according to PCPC membership, these are essentially all flexible hold, low resin formulations, PCPC members do not currently know of a viable method to provide a high hold, high resin product at a 45% VOC level that is also acceptable to consumers. The development of new, more soluble resins which provide the necessary hold will take considerably more time to develop and implement even if one is found.

Since CARB has copies of product labels and more comprehensive formulation information than is available to individual companies as a result of the confidential surveys, PCPC requests that a technology assessment be conducted to determine if there are any high hold formulations which could meet the 45% VOC limit.

PCPC acknowledges that CARB has stated that it will not split the hair spray category into a flexible and medium/high hold [or equivalent] categories. We thus recommend that CARB help companies meet the 2023 goal by lessening the bureaucratic load on those companies who wish to use an Alternative Control Plan to achieve the desired VOC savings, using combinations of flexible and higher hold hair spray technology. The focus for companies could then be placed on meeting the 45% requirement for 2029, which could require new technologies be made available.

Finally, CARB should formally issue guidance on ways to use compressed air propellants without incurring excessive compliance costs currently required by the alternative compliance mechanisms. PCPC welcomes the opportunity to engage with CARB on the technology and regulatory acceptability of such propellant systems.

II. NO RINSE SHAMPOO, HAIR SHINE, and TEMPORARY HAIR COLOR

a. Definitions

CARB has proposed new definitions for No Rinse (Dry) Shampoo, Hair Shine, and Temporary Hair Color. PCPC agrees with the modifications proposed, with one exception: stating that a dry shampoo is to be "removed" from the hair is technically incorrect. A more accurate statement is to say that the product is to be "subsequently brushed, combed, or toweled out".

PCPC also agrees that dry conditioners should be excluded from the Dry Shampoo definition, as the consumer benefits of a conditioner are not the same as those of a shampoo. While CARB states that dry conditioners making styling claims would cause the product to be regulated as a styling product, there are claims for dry conditioners which would not lead to the product being classified as a styling product. PCPC welcomes the opportunity to continue a dialogue with CARB for this relatively small category.

b. Proposed VOC Limits:

- **Dry Shampoo: 55% VOC limit by 2023 and 45% by 2029;**
- **Hair Shine and Temporary Hair Color: 45% by 2029**

To meet the proposed VOC standards, PCPC still forecasts significant challenges in meeting the 2023 standard for dry shampoo and the 45% standard for dry shampoo, hair shine, and temporary hair color products by 2029. These valid concerns are detailed in the February 10, 2020, PCPC letter to CARB. In its April 14, 2020, webinar, CARB stated that it will be "continuing technical discussions with stakeholders".

PCPC, which appreciates that CARB recognized that there may be potential technical issues for both categories, welcomes the invitation and will work proactively with CARB to develop mutually agreeable standards.

III. PERSONAL FRAGRANCE PRODUCTS < 20% FRAGRANCE (PFP)

The PFP category includes wide range of consumer products including body sprays, deodorant body sprays, aftershaves, fragrance mists, and fine fragrances. As such, compliance with CARB's proposed VOC limits for this category will be more difficult for certain types of products than others. Many of these products, especially those with iconic, signature fragrances, have been marketed for many years with relatively few changes in the products and their olfactory profiles.

The three main components of most personal fragrance products are fragrance compounds, ethanol, and water. The primary purpose of products in this category is to provide a scent to the

consumer using it. In the case of many PFP's, especially fine fragrances, providing a consumer desirable scent is their sole purpose and their unique identity of each brand.

a. Proposed VOC Limits for all PFP's~~:~~

- **PFP with 10% or less Fragrance: 68% VOC limit by 2023 and 50% by 2027**
- **PFP with more than 10% Fragrance: 75% by 2027**

1. <u>FINE FRAGRANCES</u>

Fine fragrance products, typically called Eau de Toilette (EDP), Eau de Cologne (EDP), and Perfume, would find compliance with the proposed limits to be challenging because any reformulation to lower the current ethanol level would significantly detract from the quality and olfactory character of the products, many of which are iconic brands and formulas which have been on the market sometimes for decades without significant formula modifications.

PCPC appreciates that CARB has expressed a willingness to preserve the viability of these iconic products so valuable to consumers and the retailers which market them, and we hope that ongoing discussions will result in a viable solution for fine fragrance products.

Categorizing personal fragrance products simply on the basis of a fragrance concentration does not adequately define the purpose of these products. While fragrance mists, body sprays and after shaves are usually formulated with 2-4%, and sometimes up to 8 % fragrance, given their type of exposure (face or full body) and style, fine fragrances contain a wide range of complex fragrance compounds, with levels in the product varying from 3 to more than 20%. The potency and identity of a fragrance compound depend from the ingredients and their combinations, and not solely from their actual concentration in the finished product.

Requiring fine fragrances to lower the VOC levels will significantly change the sensory character of the products to such an extent that some companies may halt distribution and sale of these iconic, consumer desirable products. The February 10, 2020 letter to CARB outlines many of these concerns.

a) Fragrance Threshold Level

The currently proposed 10% cutoff for the Personal Fragrance Product category would still force many iconic fine fragrance products formulated with 3-10% fragrance to make such significant formulation changes that the product which consumers desire is no longer available. The 10% limit also represents a very significant limitation for future creations and innovations.

Many marketers of fine fragrances have concluded that a 5% threshold for the VOC limit on PFP's would be a far better cut-off, since the majority of fine fragrance products currently on the market have fragrance levels of > 5%. A threshold of $\leq$ 5% would still ensure that the majority

of body sprays, mists and after shaves, representing about 78.5% of the PFP market, would be subject to the new 2023 VOC limit, which must remain at ≥68%.

b) "Frame Formulation" Concept

While reducing the fragrance threshold is more acceptable than the 10% proposed by CARB, the use of a frame formulation concept, which integrates quantitative and qualitative criteria, would prove to be the best way to distinguish fine fragrances from other personal fragrance products.

As previously stated, personal fragrance products typically consist of fragrance, ethanol, and water; fine fragrances are further differentiated by containing <1.5% other ingredients in total. The identities of these 'other' ingredients are limited, strictly relating to colors and ingredients meant to solubilize, stabilize, impact the longevity of the fragrance or the color.

i. It is also a fact that, currently, fine fragrance products are always packed in glass or crystal and are not packaged as aerosols.

ii. Fine Fragrances are now solely labelled on pack and on-line as "parfum, perfume, Eau de Parfum, Eau de Toilette or Cologne" at the exclusion of any other statements of identity and make no claim other than related to the scent.

By incorporating these parameters into a formulation frame as a way to determine which personal fragrance products should stay with the current 75% VOC limit, CARB can ensure the ongoing market viability of these products without significantly compromising its VOC reduction goals.

c) Recommendations for Fine Fragrance Products

Marketers of fine fragrances propose two regulatory avenues for protecting the consumer acceptability of iconic EDT's, EDP's, and Perfumes while still achieving VOC reductions.

The adoption of a formulation framework is the preferred model, since it incorporates all the key elements which currently define a fine fragrance. The second proposed model is to lower the fragrance threshold from the proposed 10% for the new VOC limit and grandfather those existing fine fragrances with a fragrance level lower than the future regulatory threshold.

CARB should consider using a frame formulation proposal for precisely defining a fine fragrance and the VOC requirements associated with fine fragrances, and as a way to preserve the consumer acceptability of fine fragrances. This model would also provide for VOC reductions that are only slightly below those which a 10% fragrance threshold would deliver for 2023.

We understand from CARB that the model, if restricted to its quantitative aspect of "combined other ingredients" less or equal/more than 1.5%, would not always allow it to discriminate fine

fragrances from fragrance mists, as number of fragrance mists apparently meet these quantitative criteria.

As such, CARB could consider cumulative qualitative criteria, as outlined below, in addition to the quantitative criteria. Taken together, these quantitative and qualitative criteria represent quite a hurdle to pass for personal fragrance products other than fine fragrances which would want to try and meet them solely as a way to comply with the regulation. Incidentally, we also believe that these qualitative criteria could facilitate enforcement.

i. Frame Formulation Proposal

CARB should define hydroalcoholic fine fragrances (described and known as Parfum, Perfume, Eau de Parfum (EDP), Eau de Toilette (EDT), Cologne) as hydroalcoholic products containing ≤ 1.5% by weight of combined ingredients other than fragrance, ethanol and water and 3 to more than 20% by weight fragrance, and meeting the following requirements:

- Other than fragrance, ethanol and water, contain only a limited number of ingredients that provide color or provide benefits relating to the solubility, stability, longevity of the fragrance or colour and have no other purpose in the product (including UV filters, antioxidants, pH adjusters etc…),
- Are customarily applied in small quantity via direct application or via pump spray (not aerosol) to small surfaces of skin,
- Solely and uniquely labelled on pack and online as Parfum, Perfume, EDP, EDT, or Cologne (at the exclusion of any other designation),
- Making no claim other than related to the sole function which is to provide a scent.

In addition, all fine fragrances are currently packaged in glass or crystal containers, a fact which CARB needs to consider when agreeing a frame formulation.

By contrast, other Personal Fragrance Products (including deodorant body sprays, fragrance mists, body sprays, and after shaves) are products which typically contain ≥1.5% by weight of combined ingredients other than fragrance, ethanol and water and ≤8 % by weight fragrance, and

- May contain ingredients other than fragrance, ethanol and water that include colors, stabilizers, and ingredients such as emollients, humectants, skin conditioning agents, hair conditioning agents, deodorizing ingredients, shining, or glittering agents, as well as propellants (for aerosols), and

- Are labelled on pack and/or on-line solely with common statements of identity, including deodorant body sprays, body sprays, all over sprays, (fine) fragrance mists, after shaves, fragrance.
- In addition, Personal Fragrance products may utilize various packaging materials (not solely glass or crystal).

A fine fragrance, as accepted by CARB, must meet all the conditions set forth in the agreed formulation framework.

ii. CARB should lower the fragrance threshold from 10%

CARB's data show that almost all products > 10% fragrance are EDP and EDT. It is appreciated that this threshold will help this fraction of the fine fragrance subcategory.

However, the same histogram, as well as data from fine fragrance companies, also shows that about half of the fine fragrances on the market today have ≤ 10% fragrance. Assuming CARB maintains its intention to regulate on the basis of a fragrance threshold, fine fragrance manufacturers conclude that reducing the threshold to 5% would avoid eliminating a good number of iconic products from the California market.

A fragrance threshold of 3% would in fact have the least impact on fine fragrances but potentially include many other PFP's, as the vast majority of body sprays and fragrance mists are around 2- 3% fragrance (see CARB histogram); manufacturers of fine fragrances have thus proposed to reduce the threshold to 5%. In fact, any decrease in the threshold from 10% fragrance will have an impact on the fine fragrance subcategory as a whole. In this context, it should be noted that the VOC reductions (tpd) between setting the fragrance threshold at 8, 7 or 6% fragrance are very similar. Furthermore at 6%, there are virtually no other products than the fine fragrances EDP and EDT.

PCPC recognizes that CARB does not want to establish a fragrance threshold that would encourage manufacturers of body sprays, fragrance mists, after shaves to significantly increase their fragrance content to avoid the lower VOC standards. However, PCPC notes that increasing the fragrance content is not only quite costly but also necessitates a complete reformulation, as solubility, olfactory characteristics, stability, safety assessment, ingredients other than fragrance, ethanol, and water will all change possibly for all products in the company's portfolio.

2. BODY SPRAYS, DEODORANT BODY SPRAYS, AFTERSHAVES AND FRAGRANCE MISTS

These products typically fall into the group of personal fragrance products with less than 10% fragrance as proposed by CARB. The current proposal is to reduce VOC to 68% by January 1, 2023 and to 50% by January 1, 2027. PCPC previously outlined in its comments of February 10, 2020 the issues which manufacturers will encounter in meeting the proposed VOC levels in these products, both for non-aerosols (majority of the market) and aerosol products (mainly in the body spray subcategory).

In evaluating the 2015 survey, it is apparent that there is only 9% of the market meeting the 68% criteria.

For non-aerosol products, as previously discussed with CARB, manufacturers cannot simply replace alcohol by water without encountering solubility, stability, safety, and olfactory characteristics issues. Every fragrance compound has its own technical "requirements" depending on the ingredients, their combination and their amount. This level of 68% VOC, hence alcohol, will require massive reformulation across thousands of products and may or may not be feasible for a number of them. Furthermore, PCPC is not aware of any company meeting the 50% VOC level among non-aerosols other than possibly on one or two products with a particular fragrance that "tolerates" such low level of alcohol. The 2015 Survey shows that the average sales weighted VOC for the entire category was over 69-70%.

For aerosol products, there is the potential to replace some of the VOC propellants with additional HFC-152a in order to meet the 68% VOC level, but this creates more greenhouse gas emissions and can significantly raise the cost of the formulation.

The California Clean Air Act requires that CARB ensures that each new standard is commercially and technically feasible. With essentially no products meeting the proposal 50% standard, we request that CARB provide industry some insight into how such a VOC level meets the requirement for commercially and technically feasible.

3. PCPC Conclusions and Recommendations

The comments submitted have focused on the difficulties in achieving the 2023 VOC standard for personal fragrance products. Significant reformulation work will need to occur to meet the lower VOC limit. Achieving the 2027 goal of 50% VOC is thus even more uncertain, as companies currently do not have the technology to deliver consumer acceptable products which meet this criterion.

- PCPC therefore requests that a comprehensive technical feasibility study for achieving a 50% VOC level for these products be shared with it, so that industry has the opportunity

to assess the hypotheses, assumptions, and conclusions used by CARB to formally agree this proposal.

- Because the technology needed to achieve a 50% VOC standard by 2027 is not fully known, PCPC requests that the implementation date, if the standard is confirmed, be delayed to 2031.

SUNSET OF 2% FRAGRANCE EXEMPTION BY 2027

In its February 10, 2020 letter, PCPC has requested that CARB withdraw the proposal to eliminate the 2% fragrance exemption for Article 2 of the Consumer Products regulation. We reiterate the comments made in that previous note, including the potential for unintended consequences. The VOC reductions to be realized from this proposal will be nearly inconsequential and may require significant resource to meet the new requirements.

There is a concern that the elimination of the exemption will create issues around confidential business information; at a minimum, fragrance companies will need to divulge additional information to companies, information which has long been considered as confidential business information. Such disclosures will likely require modification of current contracts and could negatively impact smaller companies.

PCPC also notes that the elimination of the fragrance exemption represents a further lowering of the VOC standard for all applicable product categories. Using the fact that CARB has previously concluded that only 25% of the fragrance will be counted as a VOC for personal products, the maximum VOC of a product will be reduced from those currently in effect only because a fragrance is now counted.

If a current hair spray product contains 2% fragrance now, elimination of the exemption effectively lowers the maximum VOC from 55% to 54.5% for the remainder of the formulation. While this is a relatively small decrease in the maximum VOC (0.9%), the impact on products with low VOC maxima could be devastating to the ability to formulate a product with a consumer desirable scent or to mask undesirable base odors. For a hair mousse, the effective VOC maximum could theoretically be reduced from 6% to 5.5%, effectively an 8.3% reduction in the VOC level if the fragrance level is 2%.

The 2% Exemption is thus an important tool in the formulation toolkit to deliver efficacious products to the market that meet consumers' needs. Without the exemption in place, products, as consumers know them today, may no longer be able to exist.

While the proposal to eliminate the fragrance exemption only applies to Article 2, there will be significant issues if there is an attempt to extend it to Article 1, where the current maximum VOC for deodorants is 0% and fragrance is an integral part of the efficacy of the product.

Perhaps most importantly, eliminating the 2% fragrance exemption will impact ***every*** regulated category. Yet, the only stakeholders that are participating in this rulemaking are those interested in the product categories subject to the current proposal. To be truly transparent and engage the regulated community, CARB needs to ensure all stakeholders are aware of the proposal to sunset the 2% exemption.

As the elimination of the fragrance exemption is a *de facto* lowering of the VOC maxima for virtually all Article 2 consumer products, and given the late stage of the rule development, PCPC recommends eliminating the proposal to sunset the exemption from this rulemaking. Rather, introduce it as a separate rulemaking – after this one is concluded and in effect – to allow all impacted parties to participate in the public engagement process.

Recently PCPC has become aware of a proposal by CARB to initiate a fragrance survey to fully evaluate all the economic and technical impacts of fragrances in products. PCPC supports this proposal and will work with its members to agree and accomplish the goals of the survey.

DEFINITION OF "LABEL"

PCPC opposes CARB's proposal to expand the definition of "label" beyond physical product label to include any claims "connected with the product's marketing". CARB would apply the most restrictive limit where there is any discrepancy between physical product label and any other marketing claims, *whether controlled directly or indirectly* by the company.

PCPC understands CARB's overall concern that products are increasingly marketed and sold over the internet and that the physical label may no longer be the primary source of consumer information. PCPC also understands that CARB is concerned that any potential inconsistencies between the product label and internet claims may result in an unintended emissions increase in the State of California due to potential off label uses; however, we disagree that manufacturer's be expected, expressly or implicitly, to control the claims and advertising practices of third party merchants. Further, in most instances, the purpose of a manufacturer's website is not limited to the State of California; manufacturers may lawfully communicate and advertise the benefits of their products to consumers outside the State of California. For these reasons, we propose that the draft definition be modified to ensure that manufacturers are not unduly held accountable for materials outside of their control or for claims or uses that were not intended for the California consumer. The following includes suggested language:

"Label" means any written, printed, or graphic matter affixed to, applied to, attached to, blown into, formed, molded into, embossed on, or appearing upon any consumer product or consumer product package, for purposes of branding, identifying, or giving information with respect to the product or to the contents of the package.

Label also includes any written or graphic matter associated with a consumer product within a manufacturer's saleable website for the purposes of branding, identifying or giving information with respect to the product or to the contents of the package. "Manufacturer's saleable website" refers to a website that is sponsored/supported by the manufacturer and where a product may be purchased and/or shipped to a consumer in the State of California.

MAXIMUM INCREMENTAL REACTIVITY (MIR)

As the focus of the current regulation is to reduce the ability of consumer products to form ground level ozone, PCPC recommends that CARB allow the use of MIR instead of strictly using VOC levels, when determining the ozone forming potential of a particular product category.

For products with high levels of ozone forming chemicals, replacing them with lower MIR chemicals can significantly reduce the ability of the product to form ground level ozone, even though technically the VOC levels are similar.

The use of Maximum Incremental Reactivity (MIR) values, already in place for some product categories, will allow greater formulation flexibility for manufacturers while achieving significant, meaningful reductions in the ozone levels that may not be possible just by reducing VOC levels.

As an example, ethanol has a significantly higher propensity to create ozone and smog; replacing some or all of this chemical in many personal care formulations, where possible, with a lower ozone-forming solvent will lead to significantly lower levels of smog created from those products.

METHOD 310

PCPC supports modifications to CARB's proposed changes to Method 310; these comments mirror those made by the Household and Commercial Products Association in its letter to CARB on May 19, 2020.

a. The draft definition of the term "compound" should be revised.

Industry supports the need for clear definitions of frequently used regulatory terms. As such the draft proposed definition of the term "compound" apparently excludes petroleum distillates, unknown or variable composition biological materials (UVCB's), as well as any chemical which consists of a group of similar moieties that are used as single ingredients in formulations. For example, a soap bar made of coconut oil consists of a spectrum of fatty acids of differing carbon chain lengths.

Like HCPA, PCPC recommends that CARB modify the definition of the term "compound" to include not only those identifiable by a single molecular structure but also those ingredients of a more complex nature.

b. Section 3.5.2 of Method 310 should reference ASTM D86-01 as an appropriate test method.

In agreement with HCPA, PCPC supports the continued use of ASTM D86-01 as a test method for determining the LVP-VOC status of a compound or mixture.

Currently, CARB uses several test methods, including ASTM D86-01, to determine the boiling point of a consumer product. ASTM D86-01 is an accepted test method used in conjunction with the 216^{o} C boiling point for determining if a compound or mixture is a VOC or an LVP-VOC.

Industry is uncertain about whether there is a reliable boiling point correlation between ASTM D86-01 and ASTM D2887-01. To only cite ASTM D2887-01 may thus result in changing the LVP-VOC status of some compounds or mixtures that are used to formulate consumer products.

CONCLUSIONS

While PCPC largely views CARB's proposals as positive steps toward meeting its VOC reduction target, there are several parts of the revised proposed regulation which will be difficult, indeed if possible, to achieve in the time frames given. PCPC is also concerned that, in the short term, industry will require significant increases in the use of hydrofluorocarbons, which will have a negative impact on the environment. We are committed to resolving the issues in a proactive manner with CARB staff.

To allow for increased flexibility for formulators and to allow for the end goal to be focused more on reducing ozone and smog, rather than strictly adhering to VOC levels, we encourage CARB to allow the use of reactivity models, or MIR, when significant improvements in ozone reduction can be demonstrated.

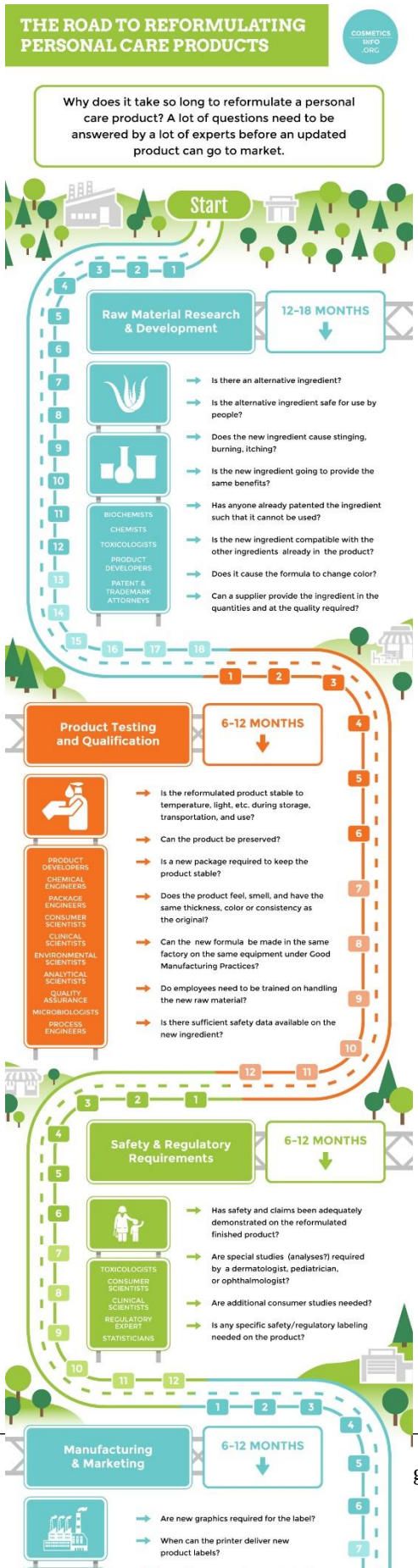
We remain committed to developing and marketing products which are safe, lower the impacts on the environment, and provide the benefits which consumers desire in our products.

Sincerely,

Thomas F. Myers
EVP-Legal & General Counsel
Personal Care Products Council

Cc: Ravi Ramalingam, CARB (Ravi.Ramalingam@arb.ca.gov)
Josh Berghouse, CARB (josh.berghouse@arb.ca.gov)

Link to PCPC Product Reformulation flowchart: https://cosmeticsinfo.org/product-reformulation


THE ROAD TO REFORMULATING PERSONAL CARE PRODUCTS
COSMETICS INFO .ORG
Why does it take so long to reformulate a personal care product? A lot of questions need to be answered by a lot of experts before an updated product can go to market.
Start
Raw Material Research & Development
12-18 MONTHS
Is there an alternative ingredient?
Is the alternative ingredient safe for use by people?
Does the new ingredient cause stinging, burning, itching?
Is the new ingredient going to provide the same benefits?
Has anyone already patented the ingredient such that it cannot be used?
Is the new ingredient compatible with the other ingredients already in the product?
Does it cause the formula to change color?
Can a supplier provide the ingredient in the quantities and at the quality required?
BIOCHEMISTS
CHEMISTS
TOXICOLOGISTS
PRODUCT DEVELOPERS
PATENT & TRADEMARK ATTORNEYS
Product Testing and Qualification
6-12 MONTHS
Is the reformulated product stable to temperature, light, etc. during storage, transportation, and use?
Can the product be preserved?
Is a new package required to keep the product stable?
Does the product feel, smell, and have the same thickness, color or consistency as the original?
Can the new formula be made in the same factory on the same equipment under Good Manufacturing Practices?
Do employees need to be trained on handling the new raw material?
Is there sufficient safety data available on the new ingredient?
PRODUCT DEVELOPERS
CHEMICAL ENGINEERS
PACKAGE ENGINEERS
CONSUMER SCIENTISTS
CLINICAL SCIENTISTS
ENVIRONMENTAL SCIENTISTS
ANALYTICAL SCIENTISTS
QUALITY ASSURANCE
MICROBIOLOGISTS
PROCESS ENGINEERS
Safety & Regulatory Requirements
6-12 MONTHS
Has safety and claims been adequately demonstrated on the reformulated finished product?
Are special studies (analyses?) required by a dermatologist, pediatrician, or ophthalmologist?
Are additional consumer studies needed?
Is any specific safety/regulatory labeling needed on the product?
TOXICOLOGISTS
CONSUMER SCIENTISTS
CLINICAL SCIENTISTS
REGULATORY EXPERT
STATISTICIANS
Manufacturing & Marketing
6-12 MONTHS
Are new graphics required for the label?
When can the printer deliver new product labels?