



March 22, 2021

Clerks' Office
California Air Resources Board
1001 I Street
Sacramento, California 95814
<https://www.arb.ca.gov/lispub/comm/bclist.php>

Re: Comments on Proposed Amendments to the California Consumer Products Regulation; Board Agenda Item # 21-2-1

Dear Board Members:

Honeywell International Inc. (Honeywell) appreciates the opportunity to submit comments on the Initial Statement of Reasons (ISOR) for the Consumer Products Regulation.

Honeywell is a global leader in providing technologies and innovations that can help the world solve its environmental and energy challenges. Our Fluorine Products business is a recognized leading innovator in the development of environmentally preferable fluorocarbons for use as aerosol propellants, solvents, refrigerants, foam blowing agents, and other uses. Since the 1990s, we have helped businesses replace ozone-depleting substances in these applications with alternatives that have less impact on the stratospheric ozone layer and climate change.

As relevant for these comments, Honeywell manufactures Solstice® HFO-1234ze(E) (CAS# 29118-24-9) that is already being used or can be used as an alternative to high-global warming potential (GWP) propellants and Solstice HFO-1233zd(E) (CAS #102687-65-0) as an alternative to VOC solvents in several of the products that would be affected by the amendments to the Consumer Products Regulation being discussed.

Honeywell has the following comments.

Proposed Category VOC limits

Honeywell commends the staff on their tireless work on developing the proposed VOC limits. At this time the VOC limits appear to be technologically feasible with the exception of the Personal Fragrance category, which has a technology review that will ultimately determine the feasibility of the VOC limits. Honeywell's VOC-exempt compound, Solstice® HFO-1234ze(E), provides aerosol product formulators with a beneficial tool to comply with the proposed limits.

Honeywell respectfully request the Board to direct staff to continue work on the exemption process for another environmentally preferable compound, Solstice® HFO-1233zd(E). Staff has worked diligently on this process, but the process was not finished in time for this Board Hearing.

Solstice HFO-1233zd(E) is VOC-exempt by US EPA, has an ultra low GWP (<1), and low Maximum Incremental Reactivity (MIR), which makes this compound an excellent candidate for manufacturers to use to comply with the new proposed VOC limits for Hairspray and Dry Shampoo products.



In order to meet the VOC reduction target, many formulators are considering using additional HFC-152a to lower ethanol in hairspray and hydrocarbons in dry shampoo. In this scenario, the VOC content decreases, but the greenhouse gas emissions would increase.

A better alternative is Solstice HFO-1233zd(E), which is a multi-functional solvent with a favorable environmental profile (low MIR). Solstice HFO-1233zd(E) is a technically viable solution in both hairspray and dry shampoo formulations to reduce the use of ethanol. Thus, granting Solstice HFO-1233zd(E) a VOC exemption would provide haircare formulators the ability to develop VOC compliant hairspray and dry shampoo formulations with minimal increased GWP emissions by significantly reducing the amount of HFC-152a that would be required.

Other Existing VOC limits

In addition, Solstice HFO-1233zd(E) could be used in place of toxic compounds in existing product categories, such as adhesives and aerosol contact cleaners.

Adhesives

In California currently there are no non-flammable, VOC compliant contact adhesive formulations available; only flammable formulations are available. However, there is a market need for a non-flammable, VOC compliant contact adhesive formulations. Exempting Solstice HFO-1233zd(E) from the VOC definition would give contact adhesive formulators the ability to sell a non-flammable, VOC compliant contact adhesive formulation in California.

Aerosol Contact Cleaners

General aerosol contact cleaners, and specifically aerosol contact cleaners for live electrical circuits, require a non-flammable, VOC-compliant, low toxicity formulation solution. If VOC-exempt by CARB, Solstice HFO-1233zd(E) would provide aerosol contact cleaner formulators the ability to sell a non-flammable, VOC compliant aerosol contact cleaner that has lower toxicity than existing options. CARB has granted application exemptions for the use of TCE, nPB, and/or PERC to be used for aerosol cleaning of live electrical circuits because other options such as Solstice HFO-1233zd(E) are not available due to the pending VOC exemption request.

Solstice HFO-1233zd(E) is VOC-exempt by US EPA and in Rule 102 in the South Coast Air Quality Management District. We urge CARB to move as quickly as possible to give formulators an additional option to meet tightening VOC requirements and market demand for environmentally preferable and non-flammable alternatives like Solstice HFO-1233zd(E).

Innovative Product Exemption IPE

Honeywell applauds the staff for considering an alternative pathway to reduce the use of GWP compounds to increase compliance flexibility. However, the Compressed Gas IPE provision currently being proposed in the Regulation is insufficient to provide a workable alternative pathway and can be improved.

Section 94511(c)(7)

This first criterion refers to propellant ingredients in the complying IPE product. This subsection describes the percent volume needed in the product is 50%. However, it is unclear as to how to calculate the 50% volume; would it be by percentage of the container or of the product? It is also not



clear if the 50% volume refers to all propellant ingredients as stated or is just for compressed gases, CO2 and nitrogen. It would help to include an example of how to calculate the propellant percent volume in the text, to provide clarity for the user.

Both section 94511(c)(3) & (4) would be made clearer by including example calculations so formulators could determine whether the provision would aid compliance.

In addition, staff states that there is a disincentive for Compressed Gases due to the weight calculation in the regulation. Honeywell believes the disincentive to use compressed gases in products is more due to the technical limitations of compressed gas compared to liquified gases. Liquified gases have a constant pressure throughout the life of the product compared to a sharp drop in pressure from compressed gases.

Reactivity IPE Provision

Honeywell requests the staff to consider the National Aerosol Association (NAA) proposal to add an additional IPE Provisional utilizing Reactivity. CARB has been a pioneer in the use of Reactivity for reducing ozone formation. CARB adopted a Reactivity Regulation on Aerosol Coatings and more recently adopted a provision to use Reactivity for Multi-purpose Lubricants. The use of Reactivity in Reducing Ozone Formation is sound science. Utilizing Reactivity with an IPE provision allows CARB to leverage the creativity of the Industry to meet mutual goals. Also, the IPE Provision allows CARB to ensure VOC reductions.

Honeywell requests that both types of IPE approaches be considered during a 15-day comment period.

Conclusion

Honeywell appreciates the staff work on this Regulation. We urge the Board to direct staff to continue working on the exemption for Solstice HFO-1233zd(E) and move it forward as quickly as possible.

Honeywell believes the IPE provisions are worthwhile and should be considered. Adding the Reactivity IPE Provision would improve flexibility for manufacturers and provide sound science for moving forward.

Honeywell looks forward to working with the staff during the 15-day comment period.

Thank you in advance for considering this proposal.

Sincerely,

A handwritten signature in cursive script that reads "Laura Reinhard".

Laura Reinhard
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