September 21, 2009

Clerk of the Board.
California Air Resources Board
1001 I Street
Sacramento, California 95814

Subject: Multipurpose Solvent and Paint Thinner Regulation

Dear Clerk of the Board,

The WM Barr and Company, Inc. ("Barr") appreciates the opportunity to comment on the rule development for Multi-Purpose Solvents and Paint Thinner.

Barr is a 100% employee-owned company that is a major supplier of Multi-purpose Solvents and Paint Thinners to the retail market and it has decades of experience with these products. Barr met with CARB staff on at least two occasions to share data with the agency and discuss this proposed regulation. We would like to thank the staff for its professionalism and the efforts it has made on this very difficult rulemaking. Our comments will focus on the following areas:

- The significant fire hazard that will result from forcing manufacturers to use Acetone;
- Potential for an increase in ozone due to Acetone use;
- The lack of consideration of Reactivity Regulation for this category;
- The lack of flexibility for the manufacturer to develop future products due to restrictions on aromatics;
- Staff does not provide information on technical feasibility of proposed 3% limit; and
- Definition correction.

I. Increased Fire Risk to Consumers

It is undisputed that this regulation will force manufacturers to substitute Acetone for non-exempt compounds in their formulations in order to meet the VOC limits. This will significantly lower the flashpoints of these products and this is significant for a number of reasons. Currently most Paint Thinners are combustible at worst, having flashpoints above 100F and in some cases the products exhibit no flashpoint (Barr's KS Pro Paint Thinner has no flashpoint, but is 35% VOC and thus non-compliant under the proposed regulation.).

A flashpoint is the temperature at which a chemical bursts into flames when exposed to an ignition source, such as a pilot light or electric motor. Conventional Paint Thinner has a flashpoint of 100-150F and will not catch fire unless the ambient temperatures reach those levels. So except for those rare days where the temperatures exceed 100F, the product will not catch

fire. In contrast, Acetone has a flashpoint of 5F or lower, and thus would burst into flames when exposed to a spark on even the coldest days of the year. The proposed regulation will subject thousands of California residents to this very real fire hazard. Barr conducted a pair of tests to compare the relative fire risks of Acetone and Paint Thinner. Videos of both of these tests are submitted along with these comments.

Test 1: In the first test Barr placed two small containers on a work bench and filled one with Acetone and the other with Paint Thinner. A candle sitting between the containers was then lit. The candle was intended to represent a constant ignition source (e.g. pilot light) that is often present when consumers use these products. Within seconds the Acetone vapors ignited and the container with Acetone was engulfed in flames. The container with Paint Thinner never ignited.

Test 2: In the second test Barr conducted an experiment where paint was thinned with conventional Paint Thinner and Acetone. Paint normally exhibits no fire hazard, even when thinned with normal paint thinner. However, when thinned with Acetone the paint becomes a flammable liquid, which the consumer in turn spreads over large areas. A flame was applied directly to the Paint Thinner-paint mixture, but no fire resulted. However, the paint thinned with Acetone burst into flames when the flame was applied to it. It should be noted this hazard may be unknown to the painter who may be unaware the paint was thinned with Acetone.

Given the susceptibility of many areas within the state to wildfires, one would think CARB staff would have erred on the side of caution and not gone forward with this proposed regulation. In addition to the risks of death and personal injury and the resulting property damage, such fires would result in emissions of particulates, and a huge release of green house gasses from the fires themselves.

Barr is not the only party concerned about this risk. State and local fire department representatives have communicated concerns to CARB staff about the likely increase in flammability of these products and increase in the volume of extremely flammable and flammable consumer products that will result. The response of CARB staff was to either ban extremely flammable thinners and solvents (which it does not have the authority to do) or in the alternative to require manufacturers to place a "hang tag" on their products to alert consumers that the product has been reformulated. The Consumer Product Safety Commission ("CPSC") has also expressed concerns over this rulemaking.

It is obvious that shifting from a product that will not catch fire under all but the most extremely hot temperatures, if at all, to one that is flammable any time the temperature is above zero will present a significant increase in fire hazards. CARB staff has apparently concluded this risk is an acceptable one in light of the improvement to air quality. However, this purported benefit is unlikely to result. Instead this proposed regulation could actually increase ozone.

II. Increased Ozone Potential

It is widely acknowledged that manufacturers will be forced to reformulate their products with Acetone. CARB staff assumes that the use of Acetone will have only beneficial effects on air quality (i.e. reduced ozone formation) because in 1995 EPA exempted it from the category of

volatile organic compounds ("VOCs"). This was done because of the relatively low reactivity of Acetone once it enters the atmosphere. However "reactivity" is only one variable influencing the capacity of a chemical to produce ozone in the atmosphere. Another equally significant variable for ozone formation is "volatility." It is significant because it is the chemical characteristic that determines how readily a material will evaporate so that it will enter the ambient air and thereby be available for the photochemical reaction creating ozone. Acetone is very volatile and can produce more ozone than a more reactive, but less volatile, chemical. That is exactly the scenario that will occur with respect to a significant use of Acetone solvents and thinners.

Barr has conducted a scientific experiment and calculation to determine how Acetone compares with Paint Thinner in terms of ozone formation resulting from cleaning brushes. First, five brush cleanings were done with each of three different paint thinners now sold by Barr. For each of these cleanings there was a measurement of the amount of thinner that evaporated, thus entering the atmosphere to be available to react to produce ozone. Then Barr repeated the five brush cleanings with Acetone and measured the amount that evaporated. For Acetone, an average of 4.88 grams evaporated, resulting in formation of 2.0984 grams ozone. For Barr's Klean-Strip Paint Thinner, only an average of 0.26 grams evaporated, resulting in only 0.4732 grams ozone. For Barr's Klean-Strip Odorless Mineral Spirits, an average of 0.43 grams evaporated, resulting in formation of 0.3822 grams of ozone. For Barr's KS Pro thinner, an average of 0.44 grams evaporated, resulting in formation of 0.1364 grams of ozone

In summary, Acetone created 4 times more ozone than Barr's Klean-Strip Paint Thinner, 5.5 times more ozone than Barr's Klean-Strip Mineral Spirits and 15 times more ozone than Barr's Klean-Strip KS Pro Paint Thinner. . It should be noted that none of these Klean-Strip thinner products will comply with CARB's proposed 30% VOC limit, though Barr can reformulate its KS Pro Paint Thinner to meet the 30% limit, however no products can be reformulated to meet the 3% limit unless Acetone is used. Because all of these Barr products will not be allowed under CARB's proposed rule, the substitution of Acetone will result in a significant net increase in ozone formation.

The assumption that shifting to Acetone away from currently available products would necessarily be beneficial to reduce ozone formation is wrong. It is based on a thirteen year old EPA Acetone classification predicated solely on reactivity without regard to its volatility, and the Barr test proves that this assumption is erroneous in actual practice. The brush cleaning example used for the scientific analysis discussed above is significant because it represents a common use of Paint Thinner.

The purpose of CARB's proposed regulation is to reduce ozone formation. However the opposite will likely occur given that Barr and other manufacturers will be forced to use Acetone. When one couples this fact with the substantial increase in fire risk that consumers would be subjected to, it begs the question of how CARB staff can propose such a regulation. Barr strongly urges the Board to reject this proposed regulation.

8000 Centerview Parkway
Suite 400
Memphis TN 38016

III. Reactivity

CARB has been an agency at the forefront of VOC reduction strategies. In June of 2000 CARB adopted a Reactivity Regulation on Aerosol coatings. In that rulemaking CARB stated in Chapter II Background on Science of Volatile Organic Compound Photochemical Reactivity A. Introduction the following

"we have been successfully implementing mass-based VOC emission controls for aerosol coating products. To further refine the current regulatory approach, in this rulemaking Air Resources Board (ARB) staff is proposing to use photochemical reactivity as the basis for regulating emissions from aerosol coatings. We believe this control approach has the potential to provide more flexibility to manufacturers, and could lead to a more effective and cost efficient ozone control strategy.

It has been known for several decades that individual VOCs vary in the amount of ozone potentially formed once emitted into the air. This concept is referred to as "reactivity." In the current Aerosol Coatings Regulation, total VOC content is limited on a percent-by-weight basis, without consideration of the differences in VOC reactivity. However, the science of reactivity now allows us to more effectively control VOC emissions by targeting reductions from VOCs that have a higher potential to form ozone."

CARB staff and the board are well versed in the concept of Reactivity. However the staff has chosen not to use it with this rulemaking, despite the fact that it could ensure emission reductions and provide flexibility for manufacturers, while not subjecting consumers to increased fire risks.

The staff states that they are required to "achieve the maximum feasible reduction in VOC emissions." However, in chapter VIII page 100, the staff details how an aromatics restriction using the concept of Reactivity would "increase the ozone reduction benefits of the proposal." Thus a Reactivity regulation would ensure that the maximum feasible reduction is achieved.

In addition Chapter II describes the process for the development of the regulation. Under part B, there is a list of emission reduction opportunities listed 1 – 4. None of the listed opportunities detail a Reactivity regulation, even though significant amount of information was provided to the staff on Reactivity. Staff had requested specific speciated compound data during the 2008 survey update. This data was extremely time consuming for the manufacturers to submit. This data was not needed for a mass-based regulation. Also, during the rulemaking process WM Barr submitted significant data on a Reactivity Regulation. This Reactivity approach would create similar emission reductions to the current proposed mass based regulation, while ensuring emission reduction and an added benefit of providing flexibility for the manufacturer in formulating new products.

IV. Aromatic Restriction

The proposed restriction on "aromatics" is not necessary and adds additional burden to manufacturers, stifles any Research and Development (R & D) efforts for the 3% proposed VOC limit and does not prevent use of other higher restrictive compounds. CARB staff states in Chapter VI that a mass based strategy is the primary focus and that reactivity would only be used

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Suite 400
Memphis TN 38016

if mass based strategy did not provide necessary reduction. (Chapter VI, Issues C. Response) However, it is obvious from this proposed restriction that a mass regulation is not able to fully ensure emission reductions. Chapter III section 4 states that the limit can be met without toxic air contaminants, greenhouse gases or ozone depleting compounds but does not mention the "aromatic" restriction. It is possible that some level above 1% aromatic may be needed to produce a feasible product. Staff states in numerous places in the regulations that the 3% limit is technology forcing. However, the aromatic restriction will further inhibit R & D efforts.

In addition, staff is advocating that Method 310 can adequately test aromatics at 1% of the product. Staff needs to prove that this test is viable down to 1% or this section of the regulation is unenforceable. Furthermore the current definition of "aromatic" is overly broad, because it includes any VOC that contains "one or more benzene or equivalent heterocyclic rings." This definition may include numerous compounds which do not contribute to ozone. Again, stifling any R & D efforts.

In Chapter VI under issues the staff response to question c about reactivity based regulations is unacceptable. Staff states that a mass-based strategy is best, but then employs reactivity mitigation strategies to deal with their issues. This approach only adds restrictions to the manufacturer and provides no flexibility to R & D. In addition, there are numerous other high reactive compounds that are not effected by the "aromatic" restriction and are useable for this category, thus the "aromatic" restriction does not accomplish its intended purpose that staff has stated, which is to "ensure that ozone forming potential of reformulated products does not increase..." Thus, the aromatic restriction should be removed.

V. Technological Feasibility

CARB staff fails to provide adequate data that the December 31, 2013 limits are technologically feasible. The products which currently meet the 3% proposed VOC limit are not feasible for all types of solvent borne paint systems. Most of the current compliant VOC products are Acetone-based products which are not feasible for all paint systems. Certain characteristics such as "blushing" can occur with fast evaporating solvents such as Acetone. More importantly the use of Acetone will create an extremely flammable mixture as described above and the 3% limit cannot be met without using Acetone.

In Section D of Chapter III, Staff provided an explanation on compliance for Multi-purpose Solvent and Paint Thinners for the 30% VOC proposed limit. However, no information is provided for compliance with the 3% proposed VOC limit. Staff needs to provide a clear path to compliance with the 3% proposed VOC limit.

VI. Definition correction

Proposed definition (106) Multi-purpose Solvent. This definition should be modified. Currently the definition states "Multi-purpose solvent does not include any product making any representation that the product may be used as or is suitable for use as a consumer product which

qualifies under another definition in section 94508." However "Paint Clean-up" is defined by new proposed definition (114). This language is contradictory and confusing to the regulation.

Summary

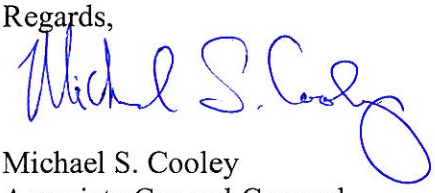
CARB's proposed VOC limits for Multipurpose Solvents and Thinners will force manufacturers to use Acetone to meet the proposed VOC limits. The use of these extremely flammable compounds will substantially increase the fire hazard for the consumer using these products. Furthermore, forcing manufacturers to use Acetone in these products will likely increase ozone production. While the 30% limit may be technologically feasible for some products, the 3% limit is not feasible without the use of Acetone. The 3% limit should be eliminated from the proposed regulation.

Lastly, the restriction of the "aromatics" places an undue burden on the manufacturer, restricts R&D options and does not accomplish the intended goal. There are numerous other high reactive compounds that are not "aromatics" that could be used in formulating products.

In conclusion, the risks that this regulation will pose are too great, especially given the lack of benefit to air quality. Rather CARB should use a Reactivity Regulation for these products. This would remove our concerns with the increased flammability risk. The staff needs to decide if a Reactivity Regulation would be a better scientific solution for the regulation of these products.

Thank you for your consideration of these comments.

Regards,



Michael S. Cooley
Associate General Counsel
Director, Legal & Regulatory Affairs