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45-Day Written Comments Received: Air Filters
Title 20, Sections 1601, 1602, 1604, 1606, and 1607
March 25, 2022, through May 9, 2022
&
Public Hearing held on May 10, 2022

Commenter(s) Name(s)	Organization	Date Received	Comment type	Assigned number
Vivian Cox	Air Conditioning, Heating, and Refrigeration Institute (AHRI)	May 10, 2022	Public hearing comment	1
James Mullarky	Freudenberg Filtration	May 10, 2022	Public hearing comment	2
Laura Petrillo-Groh	Air Conditioning, Heating, and Refrigeration Institute (AHRI)	May 10, 2022	Public hearing comment	3
Bryan Gerhardt	3M	May 10, 2022	Public hearing comment	4
Nathaniel Nance	American Air Filters	May 10, 2022	Public hearing comment	5
Bryan Gerhardt	3M	May 5, 2022	Written public comment	6
Patrick Eilert, Karen Klepack, and Kate Zeng	Southern California Edison, San Diego Gas and Electric Company, and PG&E. (CAIOUs)	May 6, 2022	Joint written public comment	7
Laura Petrillo-Groh	Air Conditioning, Heating, and Refrigeration Institute (AHRI)	May 9, 2022	Written public comment	8
Jason Thomas	Carrier	May 9, 2022	Written public comment	9
James Mullarky	Protect Plus Air a company of Freudenberg	May 9, 2022	Written public comment	10

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1.1	AHRI would like to request that CEC makes a slight modification to the basic model definition to allow manufacturers to source materials from different suppliers from products sold under the same model number. Please see our comments for additional details.	The purpose of the basic model is to test a filter chosen by the manufacturer to test its efficiency and use the results to certify the different size filters of that share the same characteristics described in the basic model definition.
1.2	So air filters have been studied extensively during the pandemic, confirming that different materials with lightly different pressure drops still have the same level of efficacy. Unfortunately, due to pandemic-related supply chain issues, dual-source raw materials and components have become paramount to ensuring access to finished goods, such as air filters. Labeling requirements that are performance based rather than based on the inclusion of specific parts will allow for multiple sources of components without negatively impact needed filtration efficacy. This will allow for swapping filter media, if needed, for different particle size efficiency ranges and pressure drops with differences of up to 30 percent, even for the same efficacy.	The purpose of the basic model is to test a filter chosen by the manufacturer to test its efficiency and use the results to certify the different size filters of that share the same characteristics described in the basic model definition.
1.3	AHRI would also like to request clarification from the CEC regarding the requirement to have the performance table visible from retail packaging. CEC previously confirmed four AHRI members in 2017 that the performance table did not need to be visible from the shipping packaging if the product was not sold in a retail setting. Manufacturers can add the required performance table to the filter itself with minimal difficulty but adding it to the filter carton would be more costly and time consuming as the filter is not that visible through the packaging.	After analysis of the comments received, the labeling requirements have been changed. The new requirements will require the information to be visible on the package only and not the frame.

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	AHRI requests that CEC add clarifying language within the regulation to avoid discrepancies in compliance or confusion from manufacturers regarding labeling requirements.	
1.4	AHRI also request confirmation that filters incorporated into other products as components do not need to be labeled separately.	After review and analysis of all the comments received regarding the definition for Air filter, the definition has been edited to include some specific characteristics adding clarity to what will be covered under the proposed regulation. Electronic Air cleaners will be excluded from the air filters definition. The definition was modified to assure that the filters affected by the proposed regulation are those used in “ducted system” as defined in section 1602(c) of title 20 of the California Code of Regulations.

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1.5	Finally, AHRI would like to request that CEC apply a one-year compliance date for labeling and reporting requirements as required. AHRI members have concerns with the proposed effective date for this rulemaking. The new labeling requirements add a layer of complexity to the labeling process, requiring more time for manufacturers to comply. On March 27, 2022, CEC gave notice of the proposed regulation. Even for manufacturers who immediately began the complex process of retesting their materials and proposing the necessary changes to retail chains selling their products, it would be virtually impossible to be compliant with new reg requirements by December 1st of this year. This timeline is expected to start after the publication of the final rule, at which point manufacturers who have not already started the process of transitioning to new labeling standards will find that it is not feasible to comply. Details supporting the necessity are—this necessity are provided in AHRI's written comment.	CEC understands that manufacturers will require some time to start testing, certifying, and labeling products. The regulations have been modified to become effective on July 1, 2024, providing the requested additional time.
2.1	We kind of came to similar conclusions as the folks at AHRI, the way the Act is currently written as far as placing the information on the frame creates some significant challenges and could impact supplies because we are one of those manufacturers that actually has multiple sources. And from what we could see in the rulemaking, there's nothing that really addresses that and wasn't even looked at in the financial impact. It was just assumed that it was all media for a filter was from a sole source and that you could just print that data ad infinitum.	See response 1.5 above. After 3 additional public comment periods CEC staff has concluded that the only way to arrive to results that are considers as "similar" to other media is by testing the new media. As a result, every different media used for air filtration will require to be tested and certified to provide consumers with reliable information. The proposal does not prohibit manufacturers from publishing their results

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	But in our particular instance we have multiple sources for media weather it's because it's regional differences or just, as we learned with COVID, to keep our customers in supply, we had to adapt and we used multiple medias. They all perform as claimed but we didn't go into all these specifics that the Act is requiring and that becomes the rub. Do we have to print what each specific media does? If we do that, then our print runs become shorter and more costly. And instead of one pile of filter frames with everything printed on it, we could have three or four, so that also increases our inventory carrying cost. We think this is a great idea as far as what you're trying to accomplish with the Act. But you know, air filters it not like can tomato soup; right? We can't print the same thing on every single filter, so it makes it – it's a real big challenge and could create some interruptions in distribution. So we hope you'll consider how you're doing to overcome that. Our suggestion maybe was to start – well, it was to just have it all published online or at least start it online while we kind of figure out how this is all going to work in, where it's printed on the actual product.	online. However, since not all Californian's have internet access when buying the filter, the marking needs to be visible on the product when viewed at the store to ensure that consumers have easy access to information to inform their purchasing decision.

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2.2	The other thing, is we – and I'm not sure how much – how the registration process is going to work but, you know, we hope that that's quite transparent and speedy because, again, if we're having to change out, find a new supplier at the last minute for something and then it takes, you know, three or four months to register the product, theoretically we can't ship to California. It is not clear in the rules how the timeline on all of that so we hope there's some consideration given to that.	See response 1.2 above. Although the CEC has 30 days to approve registration to certify the air filter into CEC's database, MAEDbS, the process on average takes 3 days.
3.1	The one-year compliance data is incredibly important given that while there has been a regulation on the books we have, there has been a regulatory advisory issued since before it went into effect, so there are no, you know, current regulatory requirements for these products. And maintaining that one-year compliance is critical for working through the big-box suppliers and ensuring that products are marked currently and can end up on the shelf for California consumers. The modification to accommodate different media types would be model modification to the basic model definition.	The purpose of the basic model is to test a filter chosen by the manufacturer to test its efficiency and use the results to certify the different size filters of that share the same characteristics described in the basic model definition. See response 1.5 above.
3.2	This rulemaking never fully got – was put into force successfully, we don't quite see it as an update to the regulation. It really is a first-time for reporting and labeling initiative and really does require that full year of lead-in time	See response 1.5 above.

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3.3	I would like to recommend, since there are new manufacturers that come under the umbrella of the regulation there be opportunities to fully understand how compliance works for this regulation under Title 20. California is a unique state with unique requirements that are not in other states. So if there are opportunities it would be helpful for those newly regulated to have the opportunity to learn about what the California compliance requirements are so that manufacturers would be able to bring to the table their best information and streamline the process for compliance, so understanding what the testing requirements are and how to use the MAEDbS system. I think that's not common knowledge, especially where there are not industry certification programs, such as air filters, and that might be particularly helpful.	CEC has an outreach and education unit who develops information on how to comply with the proposed regulations. After adoption, the CEC will prepare fact sheets and provide workshops for interested stakeholders 1 to 2 months prior to the effective date of the regulation. All outreach and education information of current and past regulations can be found at the bottom of our webpage: "Appliance Efficiency Regulations- Title 20." In addition, the CEC offers continued assistance to stakeholders on adopted regulations through our appliance regulations certification assistance unit. Their webpage "Appliance Regulations Certification Assistance" provides information and training and education for CEC's Modernized Appliance Efficiency Database System (MAEDbS).
3.4	Lastly, I do recommend that comments do clearly outline the changes that would be needed to ensure sourcing and availability of products for California consumers in a reasonable way.	Staff finds that the new proposed language clearly outlines the changes to be implemented to the Air Filters regulations, consistent with this request.
4.1	I'd like some additional clarification on the dust holding capacity. To me it doesn't seem natural that it's at the max-rated airflow. It's, rather, at the airflow that you specified that your testing conditions are completed at so that's just a little misleading or misunderstood.	The use of "max-rated airflow" was removed based on the original 45-day comment. The "max-rated airflow" in table Z-1 and Z-2 is for the maximum rated value and not the value measured during the test.

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		To clarify, the airflow is to be specified as per the testing conditions of the proposed test procedures. The language was revised to require the dust holding capacity only to be expressed in grams. We have removed the "at maximum rated airflow rate as published by manufacturer" from the requirement of table X in section 1606 of the proposed regulation.
4.2	I'd also like to recommend that we consider using PM language in terms of how we describe our filter efficiency, more consumer-friendly is we're really trying to get the consumer engaged, just making sure that they're selecting filters that meet their needs with PM 1, PM 2.5, and PM 10 language is more consumer friendly and recommended by the U.S. EPA.	Staff will maintain the proposed terms since such are used and are in parallel with those used in the proposed test procedure AHRI and ASHRAE. Although we understand that the regulation could use the terms used by the USEPA of PM 1, PM2.5, and PM10, CEC staff will maintain the same terms used in the proposed test procedure to prevent any ambiguity in the regulation.
4.3	The other thing I'd like to consider is in the regulation it says, "you shall use the same filter pressure drops." And although I like that regulation long term, 3M has been proactive in terms of providing the filter information since 2016 on our products, we determined that some of our filter pressure drops, honestly, are slightly higher on smaller sizes and slightly lower on larger sizes because you have more effective surface area in those products or less in the instance of a smaller. So I'd like to consider changing that "shall" to "can". As some of my peers have already, you know, mentioned,	The proposed regulation does not have the language "you shall use the same filter pressure drops." The regulation proposes that a basic model be tested using the proposed test procedures and that those results be certified and marked on all other size filters that meet the same characteristics of the tested basic model filter.

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	this regulation, if we're going to continue printing on this product does require a significant undertaking by manufacturers to update their product with all these requirements. You know, due to inventory of semi-finished goods, RMs that go into these products and such, it's a large undertaking.	
4.4	Lastly, one of the things I'd like to consider is since a lot of filters sales are really moving online, if we look long term, having the information on the product is not meaningful if the consumer is purchasing this online anyway. It takes a lot of the administrative duties away from manufacturers if we just have the ability to direct consumers, the purchasers of our products, to a California website that has all the information that we're trying to share with them, the filter efficiency, the pressure drop, all the sort of information. Why print it on a product if they can go to a website to obtain that information? It allows manufacturers to update information on a more cost-effective basis, plus provide information to consumers real-time if or when product changes due to manufacturing constraints.	The requirements listed in section 1607 are required as a "minimum requirement." However, it doesn't prohibit manufacturers from including the results electronically via website. The reason that we are requiring the label to appear on the filter is because: 1. Not all Californians' have access to the internet when purchasing a filter. 2. It provides visual printed information on the filter which will assist consumers on matching it when replacing it.
2.3	I just wanted to follow up on what Bryan said. And to his point about the online, it might be a great place to start. There is precedent for that, you know, with some of the recent right-to-know laws that's all being started on – or was started online before it moved to packaging. So that could help the process along immensely, along with trying to figure out some of the other wrinkles in the process when there's multiple medias involved.	See response 4.4 above.

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5.1	I think we're all in agreement, the complexity of this for manufacturers. And of course, the three of us are dealing with very large groups. As you look at smaller manufacturers, it becomes even more complex. Unfortunately, the supply chain has kind of changed the direction of what we had worked on in 2014, 15, 16 and it really has created some complexities that span out of the timelines and trying to first and foremost educated big-box retailers that we have to change the design, we need their approval, and get something other than a no. It just extends the timeline so much on the manufacturers. So anything CEC, from a concession of timeline for enforcement or starting online where we can bypass some of those, see we could make it more palatable to both big-box retailers and the manufacturers, I think that's going to really help everybody out.	See response 1.5 above
6.1	On Page 10 of the Proposed Regulatory Language, "Dust Holding Capacity at the maximum rated airflow rate as published by the manufacturer (grams)" is written. Dust holding is not measured at the maximum airflow rate. Dust holding is a measure of the grams of dust held in the filter within the specified testing conditions listed in the preceding data that the manufacturer has listed. It is the dust held in the filter as the filter was loaded from the "initial resistance" to the "final resistance" at the "Face velocity for the test". The Dust Hold Capacity should be used from the ASHRAE 52.2 2017 standard. Recommend changing the wording to: Dust Holding Capacity per the testing conditions previously specified by the manufacturer (grams).	CEC staff agrees with the comment and has changed the requirement to reflect the total dust holding capacity of the filter. See response 4.1 above.

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6.2	On Page 15. Recommend adding the word “sizes” to #2. 2. Air filter “sizes” that have not been tested…	The language has been changed to include the word “sizes” since the information required in the label is for the filters that are made of the same material and construction but have a different grade or size than that of the basic model.
6.3	Page 15, 2b, states, “the initial resistance values of a filter that has not been tested shall be identical to the initial resistance values 1 through 5 determined for tested air filter of the same basis model”. There are slight increases in the actual filter resistance for smaller sized filters due to the percent of area that the filter frame covers increases as the filter size gets smaller and inversely the filter effective area increases for larger sizes. It is recommended to change the words from “shall be identical” to “can be identical”. This would allow the manufacturer to provide more accurate information on the smaller or larger filter sizes that were not tested in which the perimeter of frame changes the effective filtration area and the known filter resistance could be slightly different than the printed resistance. Manufactures that already label filters may not be using the same data across all sizes. This wording change would allow some variation to avoid having to update all printed product information prior to the regulation effective date. The costs to update product artwork, printing plates, scrap any excess raw materials not consumed by the effective date can be much larger than the Economic Impact Statement produced for the estimated cost of this regulation.	Staff finds that representative testing, rather than comprehensive testing, strikes the best overall balance between accurate, representative information and the costs of testing multiple products. A consequence of representative testing is that product markings must be identical to the test results for the basic model as certified to the CEC and listed for the product in question. Allowing the information printed on products to differ from certified product data creates verification and enforcement obstacles in excess of likely benefits to consumers. After review of all the comments received through the four different public comment periods, CEC staff has changed the effective date to July 1, 2024. Additionally, CEC staff has revised the requirements to be similar to the ones of the adopted regulation and has removed any additional or interim requirements to prevent an increase in cost previously calculated. No raw materials will need to be scrapped as a result of these regulations, and the cost of updating specific numeric values for future production runs is expected to be de minimis.

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6.4	The ASHRAE 52.2 2017 Standard has Addendum B which allows for a more consumer friendly method to display the particle size efficiency (PSE). To the average consumer, listing the particle sizes of 0.3-1, 1.0-3.0, & 3.0-10µm has minimal meaning. Consumers have been educated by the media and the U.S. Environmental Protection Agency (USEPA) on PM1, PM2.5 & PM10. ASHRAE has acknowledged this disconnect with the current reporting and has an estimation for PM1, PM2.5 & PM10. These are more consumer-friendly terms and consistent with the terms used by the USEPA. It is recommended that Addendum B be an optional method to display the filtration performance data on the filter and also be an option for registering the filter data.	Staff will maintain the proposed terms since such are used and are in parallel with those used in the proposed test procedure AHRI and ASHRAE. Although we understand that the regulation could use the terms used by the USEPA of PM 1, PM2.5, and PM10, CEC staff will maintain the same terms used in the proposed test procedure to prevent any ambiguity in the regulation.
6.5	The estimated manufacturers cost to implement the proposed regulation and ongoing costs appear to be low versus actual costs that can be incurred. Manufacturers will be required to have unique product frames for every different tier and size of filter produced. Without the labeling requirement, manufacturers could share filter frames across different tiers (performance levels) of filters. The labeling requirement will increase manufacturing carrying costs for raw materials used to make the filters. These costs likely will be passed onto the consumers. Allowing filter manufactures to simply register the filter information without having to print the data on the product, will still enable information to be available for the consumer, but reduce the manufacturing costs for the products. A possible alternate to printing the data on the product, would be an option to have a message printed on the product directing consumers to the California Energy Commission website with the registered product	The labeling requirements in section 1607 allow for the marking to be made on the pleats of the filter as an alternative to printing it on the edge of the filter itself (i.e., the frame). Since MAEDbS database is not required to generate a QR code but is just a feature of the database, and because it would be an assumption that all consumers will have access to the information digitally through a smart phone, CEC will require the information listed in section 1607 to be part of the package rather than to use a reference to the data used for certification. This however doesn't prohibit manufacturers from printing or providing the additional link or QR code on the

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	information when the information is not printed on the product. This would enable manufactures to be able to update product performance information in a cost-effective and timely manner if product performance changes. The supply challenges of COVID-19 have highlighted the impact that global pandemics can have on the ability to source nonwovens. A supply chain interruption to the filtering material can change performance claims. If the performance claims need updating due to change in resistance or filtration performance change, there would be significant costs associated with now obsolete materials and time required to print and make new components for the product with the updated information to use the new nonwoven. In today's world, information should be available to consumers, but it does not need to be printed on a product to be available. Since the recommendation is to allow manufacturers to ratio the air flow and use the same filter initial resistance as the tested filters the web site could provide a method for the consumer to enter their filter size and the airflow data would be available for them to obtain.	package as a form of digital verification of the data printed for the consumer.
7.1	We recommend CEC finalize the Title 20 proposed revisions on testing, certification and marking requirements for air filters. We thank CEC staff for working through the complexities of regulating air filters over the years to ensure benefits of this regulation to California consumers. We recommend CEC finalize the proposed revisions at the CEC business meeting scheduled on July 13, 2022 and look forward to implementation of the proposed compliance date of December 1, 2022.	See response 1.5 above.
7.2	We suggest modifications to the proposed regulatory language to clarify the scope of this rulemaking.	The proposed definition for air filters has been edited to include aspects described in the comment.

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	The Proposed Regulatory Language docketed by CEC1 defines “Air Filter” as “an air-cleaning device used for removing particulate matter from the air and designed for installation in residential ducted forced-air heating or cooling systems.” We suggest the following changes to the Regulatory Language: • Include a definition for “Electronic Air Cleaner” based on the description of Group RII Air Cleaners in AHRI Standard 680-2017 “Performance Rating of Residential Air Filter Equipment”. We suggest the following definition: “Equipment that uses high voltage electrostatic principles to collect particulate matter. These Air Filters may be of single-stage or multi-stage configuration. Part or all of the charging and/or collecting sections may be manually cleanable, automatically cleanable, or disposable. This equipment has a power supply.” Modify the definition of “Air Filter” as follows: • Exclude air filtering media sold as rolls i.e. not encased in a frame. • Clarify that the definition excludes “Electronic Air Cleaners.” • Clarify that Air Filters included in federally regulated products are in scope of the rule. • Substitute the phrase “designed for installation in residential ducted forced-air heating or cooling systems” in the proposed definition of Air Filters with a technical characteristic that can be used to determine if products are within scope of the rule when they are not clearly marked as intended for the residential market. We anticipate that this change would simplify enforcement. We suggest including Air Filters with air filtering media encased in a frame with a nominal depth no greater than 6.0 inches.	For clarity, the definition includes electronic air cleaners as one of the listed exclusions from the definition and therefore the proposed regulation.

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	The following suggested definition for “Air Filter” (suggested text is underlined, suggested deletions are struck out) addresses the changes listed above: “an a disposable or reusable air cleaning device with air filtering media encased in a frame with a nominal depth no greater than 6.0 inches that is used for removing particulate matter from the air and designed for installation in residential ducted forced-air heating or cooling systems. Air Filters sold as replacement products as well as embedded in consumer products are included. Electronic Air Cleaners are excluded.” We also suggest adding date of manufacture date to the Air Filter Market requirement shown in Tables Z-1 and Z-2 of NOPA to facilitate enforcement of the compliance date of this rule.	No change. The date of manufacturer is already a requirement in section 1607(b) so this would be redundant.
7.3	We respectfully request that CEC consider specifying an initial resistance pressure difference more representative of filter face velocities in existing residential systems. One of the most significant benefits of the proposed testing, certification and marking requirements for air filters is that they will provide consumers with the necessary information to replace their filters with an air filter with similar performance as originally specified by the mechanical design engineer. In our experience, an initial resistance of 0.1 inches water column (in. w.c.) is not representative of the initial resistance found in the vast majority of existing California residences. Typical residential HVAC systems are sized for a face velocity of 300 feet per minute (fpm) or more. We note that California’s 2019 Title 24 Building Energy Efficiency Standards has established a requirement for a pressure drop in new residential construction of not	Staff will maintain the initial resistance calculated for certification at 0.1 in water column (in w.c.) because the proposed regulation does not conflict with the requirements of title 24. The proposed regulations are intended to indicate the performance of the filter. The initial resistance of 0.1 inches water column is a calculated value based on the data from the proposed test procedure and calculated as prescribed in section 1604(c)(B) which will allow CEC staff to verify the data used for certification. The proposed regulation, however, doesn’t prohibit the manufacturer from providing that additional performance or that at 0.2 in w.c.

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	more than 0.1 in. w.c., which is based on a face velocity of 150 fpm. Based on this requirement, we estimate that existing systems designed for a face velocity of 300 fpm will have a pressure drop on the order of 0.2 in. w.c. An air flow listed on a filter rated at an initial resistance of 0.1 in. w.c. will be much lower than the actual air flow of the system that the filter is intended to serve. For example, a 24 in. by 24 in. filter applied on a 1,200 cubic feet per minute (cfm) system at 0.2 in. w.c. will be marked with an air flow of 600 cfm at 0.1 in. w.c. When consumers with knowledge of the airflow capacity of their system search for replacement filters, they may believe that the air filter intended for their system is not usable. Instead, they may search for a filter rated at a higher air flow. We respectfully request that CEC consider specifying an initial pressure difference that is more representative of filter face velocities in existing residential HVAC systems.	Staff would also like to clarify that the initial resistance of 0.1 inches water column is not required as part of the label requirements in section 1607 but is a requirement for certification into the CEC's database MAEDbS.
7.4	We note that the U.S. Department of Energy (DOE) has proposed to define air cleaners as a consumer product. We recommend CEC participate in the DOE rulemaking. On January 25, 2022, the U.S. Department of Energy (DOE) issued a request for information (January 2022 RFI) proposing to define a consumer air cleaner as a consumer product that: (1) Is a self-contained, mechanically encased assembly; (2) Is powered by single-phase electric current; (3) Removes, destroys, or deactivates particulates and microorganisms from the air; and	Comment acknowledged. The exclusion for electronic air cleaner has been implemented to the proposed definition for air filter.

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	(4) Excludes products that destroy or deactivate particulates and microorganisms solely by means of ultraviolet (‘‘UV’’) light without a fan for air circulation; and (5) Excludes central air conditioners, room air conditioners, portable air conditioners, dehumidifiers, and furnaces as defined in 10 CFR 430.2. While CEC’s testing, certification and marking requirements for air filters are limited to metrics of filtration efficacy, such as Minimum Efficiency Reporting Value (MERV) and Particle Size Efficiency (PSE), and do not include requirements related to energy use, the proposed consumer air cleaner definition in DOE’s January 2022 RFI potentially overlaps with the proposed definition for Air Filter in this NOPA, unless Electronic Air Cleaners, as described in Comment 2, are excluded. We recommend that CEC track the DOE rulemaking to determine if any gaps in scope are created between CEC’s Air Filters regulation and DOE's air cleaner regulation, which can be addressed in a follow-on rulemaking by CEC.	
8.1	In the intervening years, and in the wake of the COVID-19 pandemic, which brought both heightened interest in air filtration, along with massive supply chain shortages, we have a few suggestions to strengthen this proposal and ensure that California consumers have access to high quality air filters, and appropriate information on product efficacy. To enable the continued access of filters, AHRI recommends that CEC maintain a one-year compliance date, rather than the proposed effective date of December 1, 2022.	See response 1.5 above.

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8.2	Under the Sample Air Filter Marking, Table Z, CEC has proposed removing a note stating, “The requirements of this section shall not preclude manufacturers from providing additional information” and stresses the importance that this note is duplicated in Title 20. We had previously commented that this note addresses the concerns that electronic air cleaners with removeable media be permitted to mark the removeable media with indication it should only be used in the electronic air cleaner for which it was designed. Such filters are not interchangeable with other systems. AHRI recommends that this note be retained under Tables Z-1 and Z-2.	Table Z-1 and Table Z-2 are examples of how the data needed for marking requirements could be presented by the manufacturer, not requirements for specific layout. The inclusion of the suggested text onto both example tables is not needed since the regulation doesn’t preclude manufacturers from providing additional information if they so choose to. Additionally, we have excluded electronic air cleaners as defined in the proposed language.

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8.3	AHRI requests that CEC make a slight modification to the "Basic Model" definition to allow manufacturers to source materials from different suppliers for products sold under the same model number. "Basic model" of an air filter means all units of a given type of air filter, irrespective of the face area dimensions, that have the same depth and the same construction, including ~~type and~~ grade of air filter media, ~~pleat spacing~~, pleat height, pleat support, and filter frame pattern. Air filters have been studied extensively during the pandemic, confirming that different materials, with slightly different pressure drops still have the same level of efficacy. Unfortunately, due to pandemic-related supply chain issues, dual-sourced raw materials and components have become paramount to ensuring access to finished goods such as air filters. Labeling requirements that are performance-based rather than based on the inclusion of specific parts will allow for multiple sources of components without negatively impacting needed filtration efficacy. This will allow for swapping filter media, if needed for different Particle Size Efficiency Ranges 1, 2, and 3 (PSE1, PSE2, and PSE3) and pressure drops, with differences of up to 30%, even for the same efficacy.	The CEC disagrees with the proposed changes since the proposed deletions to the definition are construction characteristics that do impact the performance of an air filter even is that difference is small. The purpose of the basic model is to lower the need to test all different size filters but rather test one size filter, the basic model, and use the results of that test for certification of the entire line of filters that are constructed using the same characteristics.

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8.4	AHRI notes that efficiency and pressure drop are not correlated in the regulation's language for mechanical air filters. Consequently, conservative ratings indicate a preference for pressure drop. AHRI suggests that altering product labeling and certification requirements would allow multiple versions of the basic model to be labeled alike, eliminating waste on preprinted frames. This is important due to supply chain issues on media. Product test results can be managed within a manufacturer's database. If there is a need for multiple versions of a filter model to fall under the same scope, then a corresponding number of test reports may be uploaded. This would allow the filter labeling to be printed with the highest pressure drop in the report, or the manufacturer's pressure drop specification for that model number (whichever value is higher). If an efficiency value must be printed on the frame in place of or in addition to the MERV rating (MERV ratings indicate efficiency), then it should be the lowest number of the test report, or the minimum required to meet the MERV rating.	The marking is needed to give consumers the information required when the consumer decides to buy a replacement air filter. By removing the marking from appearing on the filter, consumers will not have enough information to buy the correct replacement for the HVAC unit in their dwelling. However, we understand COVID-19 has had an impact on supply lines and therefore have extended the effective date to the regulation to July 1, 2024.

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8.5	**AHRI requests clarification from CEC regarding the requirement to have the performance table visible from the retail packaging.** CEC previously confirmed for AHRI members in 2017 that the performance table (proposed Z-1 and Z-2) did not need to be visible from the shipping packaging, such as a box, if the product was not sold in a retail setting. Manufacturers can add the required performance table to the filter itself with minimal difficulty but adding it to the filter carton would be more costly and time consuming as the filter is not visible through the packaging. AHRI requests that CEC add clarifying language within the regulation to avoid discrepancies in compliance or confusion for manufacturers regarding labeling requirements. AHRI also requests confirmation that filters incorporated into other products as components do not need to be labeled separately.	CEC staff has clarified the definition to clarify what filters are affected by the regulation. The label requirements related to packaging specify that the marking must be visible through or on retail packaging. Shipping packaging not intended to constitute retail packaging is not required to comply with the marking requirements.

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8.6	*Retail chains* must discuss labeling redesign at length and approve any changes made prior to manufacturers sending updated designs to the die-cut. This approval process requires multiple meetings between manufacturers and *retail chains* and is time consuming. As *retail chains* generally have a 90-day supply of air filters on hand, motivating a more efficient transition is difficult and could require disposing of products ready for retail. Currently this timeline is expected to start after the publication of the final rule, at which point manufacturers who have not already started the process of transitioning to new labeling standards will find it impossible to comply. It is not a straightforward or effortless process for manufacturers to incorporate a redesign into their products, and as such they need an appropriate length of time to collaborate with chain retailers to complete a redesign and to bring their products into compliance.	After review of all comments received through the four public comment periods, CEC staff has changed the proposed effective date to July 1, 2024, to allow ample time to manufacturers and retailers.
8.7	Finally, AHRI reminds CEC of Public Resources Code section 25402(c)(1)(A) which requires an effective date of “no sooner than one year after the date of adoption or revision” and asks that CEC modify the revised labeling standard effective date accordingly to June of 2023 instead of December 1, of 2022. This rule is being promulgated under the authority of Public Resources Code sections 25213(a), 25218(e), 25402(c)(1), and 25402.5 and should comply with 25402(c)(1)(A) and should have a one year effective date, at minimum.	Section 25402(c)(1)(A) is only applicable when the regulation has an efficiency standard. In the case of air filters, which is only a test and list regulation and does not specify a minimum performance level as its standard, it is not subject to 25402(c)(1)(A). However, CEC understands the challenges and has delayed the effective date to July 1, 2024, in the proposed regulation.

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9.1	Carrier supports the proposal to modify the existing scope to clarify that only air filters for ducted systems are covered by this regulation. We also support updating the regulation to the most recent editions of industry test procedures. Carrier does not support the marking requirements in this proposal because it could create confusion among consumers, which is not the goal of CEC or Carrier. Finally, Carrier does not support an effective date of December 1, 2022 for this regulation, as manufacturers will not have adequate time to comply. As a result, Carrier urges CEC to consider an effective date one year after completion of this rule.	After review of all the comments received during the four public comment periods, the proposed regulation will become effective on July 1, 2024. The definition for air filters only applies to filters used for a ducted system as defined in sections 1602(c) of title 20 of the California Code of Regulations. The marking requirement is necessary to provide consumers with information to help them choose the best air filter for their system. The type and format of information specified in the regulations is designed to impart the most relevant information in as clear a manner as possible to aid in purchasing decisions.
9.2	Carrier supports the clarification that this regulation only applies to air filters in ducted systems. Alignment between Title 24 and Title 20 in the California Code of Regulations is important in reducing confusion and ensuring successful compliance. This change would ensure the two regulations complement one another. Carrier suggests the following minor modification to the definition of “basic model” of an air filter: “Basic model” of an air filter means all units of a given type of air filter, irrespective of the face area dimensions, that have the same depth and the same construction, including type and grade of air filter media, pleat spacing, pleat height, pleat support, and filter frame pattern. Requirements that are performance-based, rather than based on the inclusion of specific parts, allow manufacturers flexibility in sourcing components that	The purpose of the basic model is to test a filter chosen by the manufacturer to test its efficiency and use the results to certify the different size filters of that share the same characteristics described in the basic model definition. CEC staff concluded that the printed information on the frame or pleats of the filter will provide the needed information for consumers to match it to new filters when the consumer is purchasing a replacement for an existing home ducted system as defined in section 1602(c) of title 20. Because two different test procedures are permitted under the proposal, the requirement to present the particle size

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	do not impact filtration efficacy. This flexibility is important for manufacturers to be able to meet market demand. Carrier strongly supports inclusion of the industry standards specifying how to test the regulated air filters. Industry standards are developed by a wide array of industry stakeholders and experts. This action will also help ensure alignment with requirements in Title 24. Carrier believes the marking requirements proposed when testing to ANSI/ASHRAE 52.2-2017 could create confusion. Including the MERV rating and the particle size efficiency for each particle size range is more information than necessary and may confuse consumers when comparing filter options. Carrier recommends fully aligning with the marking requirements in Title 24, which requires only the MERV rating and pressure drop.	efficiency is important since the AHRI does not use the MERV number to represent the performance of the air filter. Rather, the various data sets listed in section 1607 will assist consumers in matching and/or finding similar replacements air filters that will allow for the efficient operation of the ducted system irrespective of which of the two tests is used for a given product.
9.3	If CEC should decide to move forward with the marking requirements as proposed, Carrier recommends that an airflow rate of 125% of the test airflow rate should not be included on the label. Because the test airflow rate and maximum allowed airflow rate can be equal, the “airflow rate value 4” on the label could be higher than “airflow rate value 5”, which is the maximum allowed airflow rate. This could lead consumers to believe they can install the filter in a system with an airflow rate higher than recommended by manufacturers.	Table Z-2 and its values are an example of how the information could appear on the air filter. It does not limit the label to using “value 5” as the maximum rated airflow. Staff does not find that this potential concern is sufficient to warrant deviating from industry’s test procedure specified in ANSI/ASHRAE 52.2-17.

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9.4	Carrier recommends that filtration devices that include a filter with other filtration technology to clean the air should be exempted from filter labeling requirements. These devices are tested as a system, and the MERV rating of the device is measured as such. For example, some filtration devices include both a filter and electric array to deliver an overall filtration performance that is much higher than the filter would deliver alone. The filter in the device is engineered for use only in the device. Including a marking with only the filter performance would require additional testing for manufacturers and would not accurately convey the actual performance of the full device.	After review of the comments received regarding the definition for air filters; the definition has been edited to add clarity to the air filters that will be subject to the proposed regulation. Only filters designed for residential ducted systems are affected by the regulation.
9.5	Carrier does not support the proposal that air filters manufactured on or after December 1, 2022, must comply with this regulation. Our understanding is that CEC must follow Public Resources Code section 25402(c)(1)(A) which requires an effective date of “no sooner than one year after the date of adoption or revision”. Therefore, we request CEC set the effective date one year after the final rule is published. Additionally, Carrier believes requiring compliance by December 1, 2022 would not allow adequate time for manufacturers to prepare for this change. In addition to having only a few months to update the manufacturing processes, the air filter supply chain has experienced significant disruption due shipping, labor, and material issues. Manufacturers are facing unprecedented lead times for components and delivery of finished goods. These realities could create a shortage of air filters in the market, which could harm consumers. This is further reason why Carrier recommends CEC set the effective	Section 25402(c)(1)(A) only applies to regulations that involve a minimum efficiency standard. The proposed regulation is a “test and list” requirement and does not include a minimum efficiency standard. However, after review of all the comments and reasons provided in four public comment periods, CEC staff proposed delaying the applicability of the proposed regulation to July 1, 2024, to give ample time for manufacturers in implementing the necessary changes to comply.

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	date no shorter than one year after the final rule is published.	
10.1	We believe that some of the original assumptions made in the drafting of the Act require adjustment due to fundamental shifts in the economy because of COVID as well as other world and regional events. The changes the Act requires will create challenges in implementing the current proposed regulation. And the challenges could recreate the shortages experienced in the category during COVID and drive costs to produce filters higher. The implementation of the act could even exacerbate energy and water resources. Please consider the following . . . 1. We concur with 3M's suggestion of only publishing the data online and not on the product. This will be more efficient and better tolerated by supply chains. 2. Many changes have taken place in the market in the last few years which we believe these have not been considered or so it seems with the proposed rules draft. 3. Changes in supply chains have taken place within the industry where uses of multiple media and sources for the same filter are used by filter producers. This appears to have been overlooked in the evaluation for fiscal impact and from implementation of the regs.	The purpose of the data is to be readily available to the consumer at the point of purchase. The proposed regulation does not prohibit manufacturers from providing the same information electronically via a websites or other means. Therefore, CEC will not make changes to the data proposed for certification and labeling requirements under the proposed regulation. The proposed regulation will become effective July 1, 2024. Staff finds that this gives manufacturers ample time to implement the necessary changes to comply with the proposed requirements.
10.2	We concur with 3M's suggestion of publishing the data online in lieu of printing it on the filter. Publishing the data online instead of printing it on the filter could reduce the risk of higher product costs, increased shortages of filters, and greater demand for paper. It	CEC staff does not find that online publication satisfies the same need or provide the same benefit to consumers. Staff notes that the proposed regulation has the same marking requirements as the already adopted and existing regulation for

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	would also more easily allow producers to employ new sources of media if shortages of materials persist. The original economic impacts looked strictly at one dimension of adding this requirement - print costs assuming unchanged media supplies from a sole source. It failed to consider inventory carrying costs of the printed frames if the Act creates separate inventories of printed frames for producers using multiple suppliers when there used to be only one inventory of filter frames. The paper frames is one of the largest cost components of an air filter. If this component is suddenly required to be maintained in new smaller inventories the printing cost goes up. Overall inventory in frames goes up as well because data must be printed on the frame specific to the media. This increases the inventory carrying cost. Smaller print runs mean higher print costs, and separate inventories means multiple minimum order quantities are being maintained requiring added investment in inventory.	air filters. Further, the proposed regulation does not prescribe how companies comply in marking the filter frame or pleat and allows manufacturers to find economic ways to comply with the proposed requirement. The intended benefit is for consumers to be able to easily locate this information on installed filters and on new filters in a retail setting. A mark present on the product provides a greater guarantee of availability and access compared to hosting in an uncertain location on a company website.

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10.3	Printing data on the filter frame assumes all producers use only one media for a filter style and it remains so throughout the year. While component and material supplies are erratic, some producers have learned to substitute media to overcome material shortages. Indeed, some filter producers were more consistent providers of air filters during COVID because they could purchase media from several sources and substitute media as supplies from one source became scarce.	CEC determined that the proposed regulations will not hinder manufacturers from adapting to supply chain challenges. Staff has considered all the comments received and has delayed the effective date to July 1, 2024, giving ample time to manufacturers to overcome the different supply chain subsiding challenges due the COVID pandemic.
10.4	It should be noted that paper production is a water and power intensive process. The intent of the Act is to positively impact both resources. However, any added demand for filter frames because of the creation of new unique part numbers created by the execution of this law could sharply reduce the overall benefits of the Act if it creates demand for increased paper production. Shortages of air filters is particularly problematic because this could mean consumers could delay replacing their air filters due to availability which could increase energy use because the system works harder when filters are near the end of their life.	CEC staff determined that the proposed regulation will not increase the production of paper products since it does not prescribe a specific way to mark the required information described in section 1607 of the proposed regulation, and allows for the mark to be added to the pleats of the filter media rather than on the frame.

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10.5	**SECTION 1602 (c). DEFINITIONS** "Basic Model" definition would be amended to allow the Basic Model to contain one of several diverse types of filter media rated at the same MERV level but with differing performance 3 characteristics. The characteristic for things like particle size removal efficiency and pressure drop could vary between the differing media used in the Basic Model. However, the published performance for these characteristics would be based upon the media with the lowest performance test results. This would ensure consumers will have the "lowest performance" data reported to them for their decision making	The purpose of the basic model is so that manufacturers test a single filter for a line of filters that have a different face size but that have the same constructions characteristics as the basic model tested, making it highly likely that the test results will be accurately representative of in-situ performance. Differing filter media, even within the same MERV level, would be expected to behave differently under test. A filter with different media therefore requires a separate test; it is a characteristic defined in the basic model definition for this reason. Staff does not find that allowing for the "lowest performance" results to be marked on air filters that have a different filtering media provides the same benefits to consumers, as this would thwart their ability to identify and select higher performing products.
10.6	• Publishing the data online is simpler, faster, more cost conscious and there is precedent for this. • Some of the recent Right to Know laws had the data published online instead of on the product label. Warranties in some instances are offered online now in lieu of printing them on the package. • Online publication of this information would enable the state to go forward with published data without having it printed on the frame and the potential cost and supply chain complications this could cause. • However, at the same time the proposed regulation must consider that several producers buy and use media from multiple sources for the same filter. • The regulation must allow the filter producer to publish only one set of numbers representing the "basic model" even though it has multiple test results with	See response 10.1 above.

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	different performance results from each of its media used in the “basic model.” • The product registration process must be transparent and conducted as a time sensitive process with firm requirements for completion timelines by the registering agency.	