LYONDELL

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December 21, 2004

Randy Wood
Deputy Director
Office of Policy & Regulatory Development
P.O. Box 13087
Austin, TX 78711-3087

Dear Mr. Wood:

Re: Request to Exclude t-Butyl Acetate (TBAc) from the Definition of Volatile Organic Compound

As you may know, the U.S. Environmental Protection Agency (EPA) has issued a final rule to exclude t-Butyl Acetate (TBAc) from the definition of volatile organic compound (VOC) under the Clean Air Act. 69 Fed. Reg. 69304 (Nov. 29, 2004). A copy of the final rule is enclosed. The proposal was issued in response to a petition submitted by Lyondell Chemical Company and is based on EPA's finding that TBAc is "negligibly reactive" and thus does not contribute appreciably to the formation of ground-level ozone.

We are writing to request that the Texas Office of Policy & Regulatory Development begin the process of revising its own regulations so that Texas' definition of a VOC will be identical to the federal definition. As discussed below, excluding TBAc from the state VOC definition will substantially advance Texas' efforts to reduce emissions of VOCs and hazardous air pollutants (HAPs).

Environmental Benefits of Giving VOC-Exempt Status to TBAc

Because of research funded by Lyondell, there is a more complete set of reactivity and other environmental data on TBAc than on any other compound that EPA has exempted from regulation as a VOC. This data set includes studies of TBAc related to ozone-forming potential, toxicity, biodegradation, aerosol-forming potential, contribution to global warming, and environmental fate. These studies have shown that TBAc is negligibly reactive, has low toxicity, and that emissions of TBAc are not likely to have adverse effects on human health or the environment.

Lyondell developed TBAc to fill a growing need for VOC-exempt solvents. As you know, regulatory efforts to reduce VOC emissions have led many industrial coating users to switch from traditional solvent-based technologies to alternative coating technologies, including waterborne, powder, and high-solids coatings. Lyondell supplies many of the solvents and coalescents used in waterborne coatings and is familiar the benefits and limitations of water based formulations. While these changes have largely been successful, there are technical limits on the extent to which these technologies can be used in many industrial applications. For this reason, there is a continued need for solvent-based systems. At the same time, there

is also a continued need to reduce VOC emissions. As a result, there is a strong demand for VOC-exempt solvents that can be used as effective substitutes for VOC solvents.

At this time, there are only three non-HAP, VOC-exempt solvents (acetone, methyl acetate, and PCBTF) that are suitable for coatings, inks, adhesives, and cleaners. Acetone and methyl acetate, however, both have very fast evaporation rates, which prevent them from being used in many applications; and PCBTF is not an active solvent for certain common resins, including epoxies and nitrocellulose. Because of its moderate evaporation rate and superior solvency, TBAc has been identified as a good replacement for several high-volume solvents – most notably, toluene and xylene – in many applications where other VOC-exempt solvents cannot be used.

In fact, a number of companies have publicly stated that, once TBAc is excluded from the VOC definition, they will use TBAc to replace substantial amounts of toluene, xylene, and other solvents.[1] Based on a preliminary market analysis, Lyondell anticipates that TBAc has the potential to replace greater than 100 million pounds per year of toluene and xylene and greater than 50 million pounds per year of ketones and esters in U.S. within a few years after it receives VOC-exempt status.

Many of the solvents TBAc is expected to replace have very high photochemical reactivity, so that exempting TBAc will substantially reduce ozone formation. For example, based on the most recently available MIR data (i.e., data on the maximum incremental reactivity of individual compounds), toluene is approximately twenty times more reactive than TBAc and xylene is approximately 50 times more reactive.[2] Thus, under conditions where VOC emissions have their maximum impact on ozone formation, a pound of TBAc emitted into the air will cause about *50 times less ozone* than a pound of xylene.

Exempting TBAc will also substantially reduce HAP emissions, because several solvents that TBAc is expected to replace – toluene and xylene again being the most notable – are classified as HAPs under section 112 of the Clean Air Act. Lyondell estimates that, nationwide, TBAc may replace more than 100 million pounds of HAP solvents per year and thus reduce HAP emissions by over 50,000 tons per year.

EPA published a proposed rule to give VOC-exempt status to TBAc on September 30, 1999. No one requested a hearing on the proposal, and the overwhelming majority of the comments were in favor of the exclusion. (There were only three adverse comments: two from commercial competitors and one from a private citizen writing on his own behalf.) EPA staff considered all the comments and has included responses in the final rule.

Request for Action by Texas Office of Policy & Regulatory Development

As you know, there are a few national VOC regulations that apply directly (*i.e.*, without any further action by state or local governments) to certain products and sources. In these cases, the federal definition of VOC is controlling. For most purposes, however, TBAc will not be considered VOC-exempt in a state until that state has taken action to exclude it from its own

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The following companies and organizations are among those that have submitted letters to EPA discussing how TBAc will be used to replace HAPs and other solvents that have much higher reactivity: Dupont, Sherwin-Williams, AKZO Nobel, Valspar Corporation, Lilly Industries, Reichhold Chemical, Ashland Chemical, International Paper, Hercules, Inc., Chase Corporation, Specialty Coatings Corporation, and The National Paint and Coatings Association (NPCA).

[2] *See* William P.L. Carter, *The SAPRC-99 Chemical Mechanism and Updated VOC Reactivity Scales,* Revised 2/5/2003 at http://pah.cert.ucr.edu/~carter/.htm#data

definition of VOC. Thus, many of the air quality benefits that will result from the use of TBAc as a substitute for HAPs and VOCs will not be realized until individual states revise their own regulations.

For this reason, we are writing to request that the Texas Office of Policy & Regulatory Development begin the process of revising its VOC regulations at the earliest opportunity so that Texas can begin to reap the environmental benefits that will result from the use of TBAc instead of more reactive or toxic solvents. If you need more information to initiate this process, or if you need a request that is more formal than this letter, please let me know and will provide it to you immediately.

Thank you for your attention to this matter. If you have any questions, or if we can provide any further information, please do not hesitate to contact me at 610-359-6443.

Sincerely,

Gail Kelly
Business Development Manager

Enclosure

Authority: 23 U.S.C.; 42 U.S.C. 7401-7641q.

■ 2. Section 51.100 is amended by revising paragraph (s)(1) as follows:

Subpart F—[Amended]

§ 51.100 Definitions.

* * * * *

(s) * * *

(1) This includes any such organic compound other than the following, which have been determined to have negligible photochemical reactivity: methane; ethane; methylene chloride (dichloromethane); 1,1,1-trichloroethane (methyl chloroform); 1,1,2-trichloro-1,2,2-trifluoroethane (CFC- 113); trichlorofluoromethane (CFC- 11); dichlorodifluoromethane (CFC- 12); chlorodifluoromethane (HCFC- 22); trifluoromethane (HFC- 23); 1,2-dichloro 1,1,2,2-tetrafluoroethane (CFC- 114); chloropentafluoroethane (CFC- 115); 1,1,1-trifluoro 2,2-dichloroethane (HCFC- 123); 1,1,1,2-tetrafluoroethane (HFC- 134a); 1,1-dichloro 1-fluoroethane (HCFC- 141b); 1-chloro 1,1-difluoroethane (HCFC- 142b); 2-chloro-1,1,1,2-tetrafluoroethane (HCFC- 124); pentafluoroethane (HFC- 125); 1,1,2,2-tetrafluoroethane (HFC- 134); 1,1,1-trifluoroethane (HFC- 143a); 1,1-difluoroethane (HFC- 152a); parachlorobenzotrifluoride (PCBTF); cyclic, branched, or linear completely methylated siloxanes; acetone; perchloroethylene (tetrachloroethylene); 3,3-dichloro-1,1,1,2,2-pentafluoropropane (HCFC- 225ca); 1,3-dichloro-1,1,2,2,3-pentafluoropropane (HCFC- 225cb); 1,1,1,2,3,4,4,5,5,5-decafluoropentane (HFC 43- 10mee); difluoromethane (HFC- 32); ethylfluoride (HFC- 161); 1,1,1,3,3,3-hexafluoropropane (HFC- 236fa); 1,1,2,2,3-pentafluoropropane (HFC-245ca); 1,1,2,3,3-pentafluoropropane (HFC- 245ea); 1,1,1,2,3-pentafluoropropane (HFC- 245eb); 1,1,1,3,3-pentafluoropropane (HFC-245fa); 1,1,1,2,3,3-hexafluoropropane (HFC- 236ea); 1,1,1,3,3-pentafluorobutane (HFC- 365mfc); chlorofluoromethane (HCFC- 31); 1 chloro-1-fluoroethane (HCFC- 151a); 1,2-dichloro-1,1,2-trifluoroethane (HCFC-123a); 1,1,1,2,2,3,3,4,4-nonafluoro-4-methoxy-butane ($C_4F_9OCH_3$ or HFE-7100); 2-(difluoromethoxymethyl)-1,1,1,2,3,3,3-heptafluoropropane ($(CF_3)_2CFCF_2OCH_3$); 1-ethoxy-1,1,2,2,3,3,4,4,4-nonafluorobutane ($C_4F_9OC_2H_5$ or HFE- 7200); 2-(ethoxydifluoromethyl)-1,1,1,2,3,3,3-heptafluoropropane ($(CF_3)_2CFCF_2OC_2H_5$); methyl acetate, 1,1,1,2,2,3,3-heptafluoro-3-methoxy-propane (n-$C_3F_7OCH_3$, HFE- 7000), 3-ethoxy-1,1,1,2,3,4,4,5,5,6,6,6-dodecafluoro-2-(trifluoromethyl) hexane (HFE- 7500), 1,1,1,2,3,3,3-heptafluoropropane (HFC 227ea), and methyl formate (HCOOCH3), and perfluorocarbon compounds which fall into these classes:

(i) Cyclic, branched, or linear, completely fluorinated alkanes;

(ii) Cyclic, branched, or linear, completely fluorinated ethers with no unsaturations;

(iii) Cyclic, branched, or linear, completely fluorinated tertiary amines with no unsaturations; and

(iv) Sulfur containing perfluorocarbons with no unsaturations and with sulfur bonds only to carbon and fluorine.

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 51

[OAR–2003–0084; FRL–7840–8]

RIN 2060–AI45

Revision to Definition of Volatile Organic Compounds—Exclusion of t-Butyl Acetate

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This action revises EPA's definition of volatile organic compounds (VOC) for purposes of Federal regulations related to attaining the National Ambient Air Quality Standards (NAAQS) for ozone under title I of the Clean Air Act (CAA). This revision modifies the definition of VOC to say that t-butyl acetate (also known as tertiary butyl acetate or informally as TBAC or TBAc) will not be VOC for purposes of VOC emissions limitations or VOC content requirements, but will continue to be VOC for purposes of all recordkeeping, emissions reporting, and inventory requirements which apply to VOC. This revision is made on the basis that this compound has negligible contribution to tropospheric ozone formation. As a result, if you are subject to certain Federal regulations limiting emissions of VOCs, your emissions of TBAC may not be regulated for some purposes.

DATES: This final rule is effective on December 29, 2004.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. OAR- 2003- 0084 (legacy docket number A- 99- 02). All documents in the docket are listed in the EDOCKET index at *http://www.epa.gov/edocket.* Although listed in the index, some information is not publicly available, *i.e.*, Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in EDOCKET or in hard copy at the Docket, EPA/DC, EPA West, Room B102, 1301 Constitution Ave., NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m. Monday through Friday, excluding legal holidays.

FOR FURTHER INFORMATION CONTACT: William Johnson, Office of Air Quality Planning and Standards, Air Quality Strategies and Standards Division (C539- 02), Environmental Protection Agency, Research Triangle Park, NC 27711; (919)541- 5245; e-mail: *johnson.williaml@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. General Information

A. How Does This Rule Fit Into Existing Regulations?

The EPA is revising the definition of VOC to say that TBAC will not be a VOC for purposes of VOC emissions limitations or VOC content requirements, but will continue to be a VOC for purposes of all recordkeeping, emissions reporting, and inventory requirements which apply to VOC. If you use or produce TBAC and are subject to EPA regulations limiting the use of VOCs in your product, limiting the VOC emissions from your facility, or otherwise controlling your use of VOCs for purposes related to attaining the ozone NAAQS, then you will not count TBAC as a VOC in determining whether you meet these regulatory obligations. However, TBAC emissions will still be subject to reporting requirements that exist for other VOC emissions. This action may also affect whether TBAC is considered a VOC for State regulatory purposes, depending on whether the State relies on EPA's definition of VOC. This decision responds to a petition submitted by the Lyondell Chemical Company [1] and is based on information

[1] The petition was submitted on January 17, 1997, by ARCO Chemical Company. Lyondell is the successor to ARCO for this petition, and EPA will refer to the petitioner as Lyondell throughout this final rule.

included in the petition and other information submitted to the docket for this rule (OAR- 2003- 0084). The EPA proposed the VOC exemption of TBAC on September 30, 1999 (64 FR 52731), and provided a 60-day comment period.

Tropospheric ozone, commonly known as smog, occurs when VOCs and nitrogen oxides (NO_X) react in the atmosphere. Because of the harmful health effects of ozone, EPA and State governments limit the amount of VOCs and NO_X that can be released into the atmosphere. Volatile organic compounds are those compounds of carbon (excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate) that form ozone through atmospheric photochemical reactions. Compounds of carbon (also known as organic compounds) have different levels of reactivity- that is, they do not react at the same speed or do not contribute to ozone formation to the same extent. It has been EPA's policy that organic compounds with a negligible level of reactivity need not be regulated to reduce ozone. The EPA determines whether a given organic compound has "negligible" reactivity by comparing the compound's reactivity to the reactivity of ethane. The EPA lists these compounds in its regulations (at 40 CFR 51.100(s)) and excludes them from the definition of VOCs. The chemicals on this list are often called "negligibly reactive" organic compounds.

B. What Evidence Does the Petitioner Present To Support Classifying TBAC as Negligibly Reactive?

On January 17, 1997, Lyondell submitted a petition to EPA which requested that EPA add TBAC to the list of compounds that are designated negligibly reactive in the definition of VOC at 40 CFR 51.100(s). The petitioner subsequently submitted supplemental materials to EPA in support of its petition. These materials are contained in docket OAR- 2003- 0084. The petitioner based the request on a comparison of the reactivity of TBAC to that of ethane, the latter having already been listed, since 1977, as negligibly reactive. In the past, EPA has determined that ethane and compounds with lower reactivity than ethane are negligibly reactive and therefore exempted them from the definition of VOC. Reactivity data presented by Lyondell in support of the petition included both k_{OH} values and incremental reactivity values. The k_{OH} values are values of the rate constant for the VOC + OH (hydroxyl radical) reaction. The incremental reactivity values, which support the petition and reflect TBAC's potential for producing ozone in the atmosphere, are based on atmospheric photochemical modeling.

Lyondell's primary case for TBAC being less reactive than ethane is based on the use of incremental reactivity data set forth in a report titled "Investigation of the Atmospheric Ozone Formation Potential of T-Butyl Acetate" by W.P.L. Carter, et al. In that study, Carter compared the incremental ozone formed per-gram of TBAC under urban atmosphere conditions to that formed, under the same conditions, per-gram of ethane. The study repeated these comparisons for 39 condition scenarios, that is, sets of ambient conditions intended to represent 39 urban areas across the United States. Carter concluded that, on average, TBAC formed 0.4 times as much ozone as an equal mass of ethane under the conditions assumed in the study.

Comparing the reactivity of TBAC to ethane on a per mole basis, as opposed to a per gram basis, calculations based on Carter's results show that a mole of TBAC forms 1.5 times the ozone formed by a mole of ethane under the conditions assumed in the study. The difference in reactivity results between the "per gram" and "per mole" comparisons is due to the fact that a molecule of TBAC is almost four times heavier than a molecule of ethane. Along with other reasons stated below, this "closeness" to EPA's reactivity exemption line requires the Agency to retain certain emission reporting requirements for TBAC.

C. How Does EPA Determine Whether an Organic Compound Is Negligibly Reactive?

In 1977, EPA published the "Recommended Policy on Control of Volatile Organic Compounds" (42 FR 35314, July 8, 1977) which established the basic policy that EPA has used regarding organic chemical photochemical reactivity since that time. In that statement, EPA identified the following four compounds as being of negligible photochemical reactivity and said these should be exempt from regulation under State Implementation Plans: methane; ethane; 1,1,1-trichloroethane (methyl chloroform); 1,1,2-trichloro-1,2,2-trifluoroethane (CFC- 113). That policy statement provides that as new information becomes available, EPA may periodically revise the list of negligibly reactive compounds to add compounds to or delete them from the list.

The EPA's decision to exempt certain compounds in its 1977 policy was heavily influenced by experimental smog chamber work done earlier in the 1970's. In this experimental work, various compounds were injected into a smog chamber at a molar concentration that is typical of the total molar concentration of VOCs in Los Angeles ambient air (4 ppmv). As the compound was allowed to react with NO_X at concentrations of 0.2 ppm, the maximum ozone formed in the chamber was measured. If the compound in the smog chamber did not result in ozone formation of 0.08 ppm (0.08 ppm was the NAAQS for oxidants at that time), it was assumed that emissions of the compound would not cause the oxidant standard to be exceeded. The compound could then be considered to be negligibly reactive. Ethane was the most reactive compound tested that did not cause the 0.08 ozone level in the smog chamber to be met or exceeded. Based on those findings and judgments, EPA designated ethane as negligibly reactive, and ethane became the benchmark VOC species separating reactive from negligibly reactive compounds.

Since 1977, the primary method for comparing the reactivity of a specific compound to that of ethane has been to compare the k_{OH} values for ethane and the specific compound of interest. The k_{OH} value represents the molar rate constant for reactions between the subject compound (e.g., ethane) and the hydroxyl radical (i.e., •OH). This reaction is very important since it is the primary pathway by which most organic compounds initially participate in atmospheric photochemical reaction processes. The EPA has exempted forty five compounds or classes of compounds based on a comparison of k_{OH} values since 1977.

In 1994, in response to a petition to exempt volatile methyl siloxanes, EPA, for the first time, considered a comparison to ethane based on Incremental Reactivity (IR) metrics (59 FR 50693, October 5, 1994). The use of IR metrics allowed EPA to take into consideration the ozone forming potential of other reactions of the compound in addition to the initial reaction with the hydroxyl radical. Volatile methyl siloxanes proved to be less reactive than ethane on a per mole basis. In 1995, EPA considered another compound, acetone, using IR metrics. Because acetone breaks down to form ozone by the process of photolysis rather than by the normal OH reaction scheme, EPA considered the IR metrics instead of K_{OH} values, and exempted acetone based on the fact that acetone was less reactive than ethane on the basis of grams of ozone formed per grams of VOC emitted (60 FR 31635, June 16, 1995). Prior to 1994, all

exemptions had been based on K_{OH} values compared on the basis of a mole of ozone formed per mole of VOC emitted. Since 1995, EPA has exempted one additional compound, methyl acetate, based on comparisons of IR metrics. The reactivity of methyl acetate was found to be comparable to or less than that for ethane under a per mole basis.

In the proposal for this rule (64 FR 52731), EPA announced two things: (1) Our intent to grant Lyondell's petition for exemption of TBAC based on a comparison of IR metrics for TBAC as compared to ethane in units of grams of ozone formed per gram of VOC emitted, and (2) our intent to base decisions on future petitions for VOC exemptions only on an equi-molar comparison of K_{OH} and IR values for the compound in question to the K_{OH} and IR values for ethane. In the proposal, EPA indicated that it might grant the TBAC exemption on the theory that the petitioner had detrimentally relied on earlier EPA statements and actions concerning the use of a gram-based comparison rather than a molar comparison of the reactivity of compounds.

D. What Comments Did EPA Receive on the Proposal?

In the proposal for the TBAC exemption, EPA indicated that interested persons could request that EPA hold a public hearing on the proposed action (see section 307(d)(5)(ii) of the CAA). There were no requests for a public hearing.

In the proposal action, EPA provided for a public comment period. The EPA received 30 comment letters. The comments received were divided into two general categories: comments concerned with EPA VOC exemption policy in general and comments focused specifically on the exemption of TBAC. Several commented on EPA VOC exemption policy, in general, as well as supporting the TBAC exemption. The comments received are too numerous to list each one in this final rule. All of the comment letters have been placed in the docket for this action. A summary of the comments received and EPA responses are given in a technical support document, titled "Responses to Significant Comments on the Proposed Revision to the Definition of Volatile Organic Compounds- Exclusion of t-Butyl Acetate (64 FR 52731, September 30, 1999)," which is in the docket. In today's final rule, we have summarized what EPA views as the most significant comments and our responses.

II. Comments Dealing With EPA's VOC Exemption Policy Comment

A number of commenters asserted that the primary purpose of a VOC exemption policy should be to encourage replacement of current emissions of highly reactive compounds with emissions of lower reactive compounds. This would ostensibly result in lower ozone formation and lower adverse environmental impact. The commenters stated that one way of doing this would be to exempt more low reactivity compounds. The use of a "reactivity per gram" basis for comparing reactivities for exemption purposes would be less strict than a "per mole" basis, and would permit more exemptions, and thus more solvent substitution.

Response

The intent of EPA's current VOC exemption policy is to avoid placing an undue regulatory burden on the use of compounds that do not significantly contribute to the formation of harmful concentrations of ozone. Once a compound is exempted, emissions of the compound may increase significantly due to substitution and new uses of the compound. Because these potential increases are exempt from control, it is important that the compounds be negligibly reactive and not simply marginally less reactive than compounds that they may replace. If by exempting negligibly reactive compounds EPA encourages the substitution of negligibly reactive compounds for highly reactive compounds, this is an added benefit.

EPA is currently evaluating a variety of scientific, legal, and practical issues associated with the design and implementation of a policy to encourage further substitution, such as the use of VOC reactivity scales. To address these issues, EPA is working with the State of California and the Reactivity Research Working Group, a government/industry/academic working group established under NARSTO (formerly the North American Research Strategy for Tropospheric Ozone) to identify research priorities related to VOC reactivity. The results of these efforts will be considered by EPA as part of a multi-year review of our current VOC policy and addressed through future rulemakings.

Comment

Many commenters opposed EPA's announcement that reactivity petitions will be evaluated on a "reactivity per mole" basis for petitions submitted after the TBAC proposal notice date. These commenters supported the "per gram" basis and questioned the use of the smog chamber experiments that were reported in 1977 as the basis for the molar comparison with ethane.

Response

The EPA believes that a "reactivity per mole" comparison is more consistent with the smog chamber experiments underlying the 1977 policy, is more consistent with the historical use of k_{OH} values as a basis of comparison, and is arguably more environmentally protective than a "reactivity per mass" comparison. However, EPA believes that the issues raised by commenters warrant a more extensive review of the overall exemption policy and its scientific bases. Consequently, EPA is not revising its current VOC exemption policy with this final rule. As noted in the proposal, EPA has commenced a multi-year review of its policy, which will hopefully be informed by the research activities being identified by the RRWG mentioned above. The EPA believes that it would be desirable for this review to be completed before reaching a decision on how to address future petitions. Parties submitting petitions for VOC exemptions should expect their petitions to be reviewed under a new policy.

III. Comments Specific to the TBAC Exemption Proposal Comment

Commenters opposed to the TBAC exemption said that because EPA intended to change its exemption policy to a "per mole" comparison, EPA should apply that test to this petition and not grandfather it under the "per gram" policy. The petitioner argued that it relied on past EPA statements regarding the acceptability to EPA of using a per gram basis in the acetone exemption proposal (59 FR 49877, September 30, 1994) and final rule (60 FR 31633, June 16, 1995) and in the 1995 Report to Congress "Study of Volatile Organic Compound Emissions from Consumer and Commercial Products." The petitioner argued that in reliance on these statements it had expended significant resources in research and planning to develop its petition for the exemption of TBAC on the per gram basis.

Response

As discussed above, in today's action, EPA is not finalizing a change to the existing VOC exemption policy. Therefore, our decision to grant the TBAC petition does not involve grandfathering this pre-existing petition from the application of a new policy. In

any event, we do not believe that the petitioner's investment of significant resources in research and planning would be, in itself, a sufficient justification for such grandfathering. First, an important consideration for grandfathering is the statutory interest in applying the new policy. If we were to adopt a policy today permitting only a per mole comparison, retaining ethane as the benchmark, we might conclude that granting the TBAC petition would not further the statutory interest in reducing ozone, because on a per-mole basis TBAC is more reactive than ethane. A second consideration for grandfathering is whether the new policy represents an abrupt departure from well-established practice. We would not necessarily characterize use of a per-mole basis in evaluating VOC exemption petitions as such a departure. Most VOC exemptions to date have been granted using k_{OH} values, which is consistent with using a per-mole basis.

The remaining considerations for grandfathering relate to the petitioner's reliance on the old policy and the burden to the petitioner imposed by the new policy. Although the petitioner stated that it expended significant resources in reliance on the per-gram policy, the petitioner competes in a regulated marketplace in which regulations can be expected to evolve with both scientific understanding and market conditions. In addition, because the petitioner claimed that it undertook only preliminary activities, such as research and planning, it would be difficult to identify concrete effects of the petitioner's alleged reliance. Furthermore, changes in EPA's VOC exemption policy would likely affect both the petitioner and its competitors. As commenters pointed out, EPA previously exempted acetone despite the argument that another company had developed a low VOC industrial cleaner as an alternative to acetone in reliance on acetone's status as a VOC. In summary, if we were to apply a grandfathering analysis to a VOC exemption petition such as the TBAC petition, we would consider not only investment of resources in research and planning, but also the other factors discussed here.

Comment

Some commenters questioned the exemption of TBAC before further study of the compound's toxicity. According to the commenters: (i) The health effects data available for TBAC are limited; (ii) no chronic, developmental, or reproductive toxicity data are available for TBAC; and (iii) no genetic toxicity or carcinogenicity data are available for TBAC. Due to the lack of information on TBAC, the commenters contended that it is not possible to assess the potential for adverse effects from prolonged exposure. However, the commenters point to evidence that TBAC metabolizes to t-butyl alcohol, for which some animal testing data suggests that it may be carcinogenic. This information was emphasized in a letter to EPA from the California Environmental Protection Agency (signed by Air Resources Board, Office of Environmental Health Hazard Assessment,and State Water Resources Control Board). Other commenters urged EPA to deny the exclusion of TBAC from the VOC definition because of concerns about toxicity.

Since the close of the comment period, the California Air Resources Board, in conjuction with California's Office of Environmental Health Hazard Assessment, has completed a draft assessment of a VOC exemption for TBAC. The assessment quantifies (1) the potential benefits associated with decreased ozone formation as a result of TBAC substituting for more reactive compounds, and (2) the potential cancer risks associated with increased exposure to TBAC. A copy of this draft assessment is included in the docket.

As part of their original submission, Lyondell had provided EPA with information on the acute toxicity of TBAC. As input into California's assessment, Lyondell submitted to EPA and California a variety of additional information about chronic toxicity. Copies of this information, as well as a copy of Lyondell's critique of California's assessment, are included in the docket.

Response

The EPA has carefully reviewed the limited data that is available on the chronic toxicity of TBAC, including California's risk assessment, and has reviewed the data available about the potential health benefits due to reduced ozone exposure from the use of TBAC as a substitute for more reactive substances. The EPA has concluded that (1) there is insufficient evidence of a significant toxic risk to justify not granting the exemption petition, and (2) granting the exemption will provide a net improvement in public health and environmental quality. However, given the potential for increased use of TBAC, EPA does believe that further toxicity testing is warranted to resolve the uncertainty associated with the limited evidence that is currently available.

In response to these concerns, Lyondell has agreed to work with EPA to perform the toxicity testing needed to resolve the current uncertainty. As part of this effort, Lyondell will conduct a tiered series of tests designed to confirm and elucidate the mechanisms of potential toxicity observed in the limited data available. Lyondell will submit the testing results to an independent scientific peer consultation panel that will make recommendations to EPA and Lyondell as to whether further testing is warranted. Based on the information currently available and experience with similar compounds, EPA believes that the first tier of testing is likely to be sufficient to resolve much of the current uncertainty. Until the testing program is completed and evaluated, Lyondell has agreed to limit their annual production of TBAC to ensure that significant chronic ambient exposures will not occur. If the testing program indicates that TBAC does pose a potentially significant public health risk, EPA will take appropriate regulatory action to address the risk.

The EPA believes that moving forward with the exemption and simultaneously pursuing additional toxicity testing is a responsible risk management approach that allows society to benefit from lower ozone exposures while protecting against other potential chronic risks.

Comment

The petitioner claimed that TBAC will be used to substitute for the common industrial solvents toluene and xylene which are classified by EPA as Hazardous Air Pollutants (HAPs) and which are much more photochemically reactive than TBAC. The petitioner claimed that this will be a great environmental benefit from the TBAC exemption. Other commenters asserted that TBAC will not be substituted to any great degree for toluene and xylene as the petitioner claims. These commenters claimed that TBAC is more expensive than toluene and xylene and may be added on top of the legal VOC limit of these chemicals in a product to increase the solvent content of product without increasing VOC content.

Response

The EPA acknowledges that the properties of TBAC make it technically suitable to be substituted for toluene and xylene in many products. The extent to which TBAC will be used as a substitute will depend on costs. Currently, TBAC is relatively expensive compared to toluene and xylene. However, if exempted, demand for TBAC is expected to increase, increasing production and driving down costs. There is a possibility that companies will use relatively cheap solvents like toluene and xylene up to

the legal limit and then use TBAC to add solvent above the applicable VOC content limits. Ultimately, EPA expects that substitution of TBAC for more reactive and harmful solvents will outweigh increases in solvent use, resulting in a net improvement in environmental quality. However, this is not the reason that EPA is granting this exemption from VOC emission limitations. The action is based on photochemical reactivity relative to ethane.

After reviewing these comments and the other material in the docket, EPA is acting in accordance with our existing policy by modifying the definition of VOC to say that TBAC is not a VOC for purposes of VOC emission limitations or content requirements because TBAC is less reactive than ethane on a per gram basis.

III. Why Is EPA Asking That Emissions of TBAC Continue To Be Reported?

In prior VOC exemption decisions, EPA has not required continued recordkeeping and reporting on the use and emissions of the exempt compounds. However, EPA has proposed to retain recordkeeping and reporting requirements for TBAC and other future exempt compounds based on our understanding that even "negligibly reactive" compounds may contribute significantly to ozone formation if present in sufficient quantities and the need to represent these emissions accurately in photochemical modeling analyses.

In addition to these general concerns about the potential cumulative impacts of negligibly reactive compounds, the need to maintain recordkeeping and reporting requirements for TBAC is further justified by the potential for widespread use of TBAC, the fact that its relative reactivity falls close to the borderline of what has been considered negligibly reactive, and the continuing efforts to assess long-term health risks. Therefore, in today's rule, EPA is excluding TBAC from the definition of VOC for purposes of control requirements, but EPA is requiring that emissions information for TBAC continue to be recorded and reported.

The EPA does not believe that a requirement to collect and report emissions data on TBAC is a new recordkeeping burden on industry, because users of TBAC are currently required to collect and report this information on TBAC as a VOC. However, industry will now be required to track and report TBAC emissions as a distinct class of emissions, separate from non-exempt VOCs.

Similarly, EPA does not believe that a requirement for continued reporting of TBAC emissions is a new burden on States, since States are already collecting information and reporting on these emissions.

The EPA is now in the process of assessing its VOC policy in general, and its VOC exemption policy in particular. EPA intends to address the issue of whether recordkeeping and reporting requirements should apply to other exempt compounds as part of a future rulemaking addressing possible changes to EPA's overall VOC policy. Today's rule requiring record keeping and reporting for TBAC does not necessarily indicate the content of a future overall policy.

IV. What Is Today's Final Action?

Today's final action is based on EPA's review of the material in Docket No. OAR- 2003- 0084. The EPA hereby amends its definition of VOC at 40 CFR 51.100(s) to say that TBAC is not VOC for purposes of VOC emissions limitations or VOC content requirements, but will continue to be VOC for purposes of all recordkeeping, emissions reporting, and inventory requirements which apply to VOC. You should not count TBAC as a VOC for purposes of EPA regulations related to attaining the ozone NAAQS, including regulations limiting your use of VOCs or your emissions of VOCs; but you must record and report the use and emissions of TBAC. Your recordkeeping and reporting of TBAC must conform to those requirements that would apply to you for non-exempt VOCs used in the same manner or in the same application as TBAC, except that TBAC emissions shall be broken out from other VOC and reported as a distinct class of emissions. You should check with your State to determine whether you should count TBAC as a VOC for State regulations. However, your State should not include TBAC in its VOC emissions inventories for determining reasonable further progress under the CAA (*e.g.*, section 182(b)(1)) or take credit for controlling this compound in its ozone control strategy. However, States must include TBAC in inventories used for ozone modeling to assure that such emissions are not having a significant effect on ambient ozone levels. States are encouraged to include other already exempt compounds in such inventories, and should anticipate that future VOC exemptions will not eliminate inventory requirements.

The EPA is not finalizing a decision on how future petitions will be evaluated. We intend to publish a future notice inviting public comment on the VOC exemption policy and the concept of negligible reactivity as part of a broader review of overall policy. Given the existence of this policy review, parties submitting petitions for VOC exemptions should expect their petitions to be reviewed under a new policy.

V. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under Executive order 12866 (58 FR 51735, October 4, 1993), the Agency must determine whether a regulatory action is "significant" and therefore subject to Office of Management and Budget (OMB) review and the requirements of this Executive order. The order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs, or the rights and obligation of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive order.

It has been determined that this rule is not a "significant regulatory action" under the terms of Executive order 12866 and is therefore not subject to OMB review.

It has been determined that this rule is not a "significant regulatory action" under the terms of Executive order 12866 and is therefore not subject to OMB review.

B. Paperwork Reduction Act

This action does not impose an information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* This action revises the definition of "Volatile Organic Compounds" for purposes of federal regulations related to attaining the National Ambient Air Quality Standards (NAAQS), for ozone, and makes no changes to recordkeeping or reporting burden.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose

or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9.

C. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedure Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

After considering the economic impacts of today's final rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. This final rule will not impose any requirements on small entities. Today's rule concerns only the definition of VOC and does not directly regulate any entities. The RFA analysis does not consider impacts on entities which the action in question does not regulate. See *Motor & Equipment Manufacturers Ass'n* v. *Nichols*, 142 F. 3d 449, 467 (D.C. Cir., 1998); *United Distribution Cos.* v. *FERC*, 88 F. 3d 1105, 1170 (D.C. Cir., 1996), cert. denied, 520 U.S. 1224 (1997).

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA, Public Law 104- 4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and Tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures by State, local, and Tribal governments, in the aggregate, or by the private sector, of $100 million or more in any 1 year. Before promulgation of an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost effective, or least burdensome alternative that achieves the objective of the rule, unless EPA publishes with the final rule an explanation of why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments including Tribal governments, it must have developed under section 203 of the UMRA a small government plan which informs, educates and advises small governments on compliance with the regulatory requirements. Finally, section 204 provides that for any rule that imposes a mandate on a State, local or Tribal government of $100 million or more in any 1 year, the Agency must provide an opportunity for such governmental entities to provide input in development of the rule.

Since today's rulemaking is deregulatory in nature and does not impose any mandate on governmental entities or the private sector, EPA has determined that sections 202, 203, 204 and 205 of the UMRA do not apply to this action.

E. Executive Order 13132: Federalism

Executive order 13132, entitled "federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government."

This final rule does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. Today's final rule does not impose any new mandates on State or local governments, but simply retains the existing requirement to include TBAC in inventories used for ozone modeling. Thus, Executive Order 13132 does not apply to this rule.

F. Executive Orders 13084 and 13175: Consultation and Coordination With Indian Tribal Governments

On November 6, 2000, the President issued Executive order 13175 (65 FR 67249) entitled, "Consultation and Coordination with Indian Tribal Governments." Executive order 13175 took effect on January 6, 2001, and revokes Executive order 13084 (Tribal Consultation) as of that date. The EPA developed this final rule, however, during the period when Executive order 13084 was in effect; thus, EPA addressed Tribal considerations under Executive order 13084.

Under Executive order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian Tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the Tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive order 13084 requires EPA to provide to the OMB, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected Indian Tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian Tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities."

Today's rule does not impose substantial direct compliance costs on the communities of Indian Tribal governments. This rule is deregulatory in nature and does not impose any direct compliance costs. Accordingly, the requirements of section 3(b)of Executive order 13084 do not apply to this rule.

G. Executive Order 13045: Protection of Children From Environmental Health and Safety Risks

Executive Order 13045: "Protection of Children from Environmental Health Risks and Safety Risks" (62 FR 19885, April 23, 1997) applies to any rule that: (1) Is determined to be "economically significant" as defined under Executive

order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

While this rule is not subject to the Executive order because it is not economically significant as defined in Executive order 12866, EPA has reason to believe that ozone has a disproportionate effect on active children who play outdoors. (See 62 FR 38856 and 38859, July 18, 1997). The EPA has not identified any specific studies on whether or to what extent t-butyl acetate directly affects children's health. The EPA has placed the available data regarding the health effects of t-butyl acetate in docket no. OAR- 2003- 0084.

H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use

This rule is not subject to Executive order 13211, "Actions that Significantly Affect Energy Supply, distribution, or Use," (66 FR 28355, May 22, 2001) because it is not a significant regulatory action under Executive order 12866. Information on the methodology and data regarding the assessment of potential energy impacts is found in chapter 6 of the U.S. EPA 1002, Cost, Emission Reduction, Energy, and Economic Impact Assessment of the Proposed Rule Establishing the Implementation Framework for the 8-hour, 0.08 ppm Ozone National Ambient Air Quality Standard, prepared by the Innovative Strategies and Economics Group, Office of Air Quality Planning and Standards, Research Triangle Park, NC, April 24, 2003.

I. National Technology Transfer Advancement Act

Section 12(d) of the National Technology Transfer Advancement Act of 1995 (NTTAA), Public Law No. 104-113. Section 12(d), (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. The NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This rulemaking does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

J. Congressional Review Act

The Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Controller General of the United States.

The EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. A major rule cannot take effect until 60 days after it is published in the **Federal Register**. This action is not a "major rule" as defined by 5 U.S.C. 804(2). This rule will be effective December 29, 2004.

List of Subjects in 40 CFR Part 51

Environmental protection, Administrative practice and procedure, Air pollution control, Carbon monoxide, Intergovernmental relations, Lead, Nitrogen dioxide, Ozone, Particulate matter, Reporting and recordkeeping requirements, Sulfur oxides, Volatile organic compounds.

Dated: November 18, 2004.

Michael O. Leavitt,

Administrator.

■ For reasons set forth in the preamble, part 51 of chapter I of title 40 of the Code of Federal Regulations is amended as follows:

PART 51—REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF IMPLEMENTATION PLANS.

■ 1. The authority citation for part 51 continues to read as follows:

Authority: 23 U.S.C. 101; 42 U.S.C. 7401-7671q.

Subpart F—[Amended]

■ 2. Section 51.100 is amended by adding paragraph (s)(5) to read as follows:

§ 51.100 Definitions.

* * * * *

(s) * * *

(5) The following compound(s) are VOC for purposes of all recordkeeping, emissions reporting, photochemical dispersion modeling and inventory requirements which apply to VOC and shall be uniquely identified in emission reports, but are not VOC for purposes of VOC emissions limitations or VOC content requirements: t-butyl acetate.

* * * * *

[FR Doc. 04- 26069 Filed 11- 26- 04; 8:45 am]

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ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[MD100-3100; FRL-7835-7]

Approval and Promulgation of Air Quality Implementation Plans; Maryland; Revised Format of 40 CFR Part 52 for Materials Being Incorporated by Reference

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule; notice of administrative change.

SUMMARY: EPA is revising the format for materials submitted by Maryland that are incorporated by reference (IBR) into its State implementation plan (SIP). The regulations affected by this format change have all been previously submitted by Maryland and approved by EPA. This format revision will primarily affect the "Identification of plan" section, as well as the format of the SIP materials that will be available for public inspection at the National Archives and Records Administration (NARA), the Air and Radiation Docket and Information Center located at EPA Headquarters in Washington, DC, and the EPA Regional Office. EPA is also adding a table in the "Identification of plan" section which summarizes the approval actions that EPA has taken on the non-regulatory and quasi-regulatory portions of the Maryland SIP.

DATES: *Effective Date:* This final rule is effective on November 29, 2004.

ADDRESSES: SIP materials which are incorporated by reference into 40 CFR part 52 are available for inspection at the following locations: Air Protection Division, U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103; the Air and Radiation Docket and Information Center, U.S. Environmental Protection Agency, 1301 Constitution Avenue NW., Room B108, Washington, DC 20460; or the National Archives and Records Administration (NARA). For