



6560-50-P

## **ENVIRONMENTAL PROTECTION AGENCY**

**[Docket ID No. EPA-HQ-ORD-2013-0357; FRL-9971-90-ORD]**

### **Integrated Science Assessment for Sulfur Oxides – Health Criteria**

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice of availability.

**SUMMARY:** EPA is announcing the availability of a final document titled, “Integrated Science Assessment for Sulfur Oxides – Health Criteria” (EPA/600/R-17/451). The document was prepared by the National Center for Environmental Assessment (NCEA) within EPA’s Office of Research and Development (ORD) as part of the review of the primary (health-based) National Ambient Air Quality Standards (NAAQS) for sulfur oxides (SO<sub>x</sub>). This Integrated Science Assessment (ISA) provides a comprehensive review, synthesis, and evaluation of the most policy-relevant science to serve as the scientific foundation for EPA’s review of the current

primary NAAQS for SO<sub>x</sub>.<sup>1</sup> EPA is developing a separate ISA as part of an independent review for the secondary (welfare-based) NAAQS for oxides of nitrogen and sulfur.

**DATES:** The “Integrated Science Assessment for Sulfur Oxides – Health Criteria” will be available on or before December 14, 2017.

**ADDRESSES:** The “Integrated Science Assessment for Sulfur Oxides – Health Criteria” will be available primarily via the internet on EPA’s Integrated Science Assessment for Sulfur Oxides (Health Criteria) home page at <http://www2.epa.gov/isa/integrated-science-assessment-isa-sulfur-dioxide-health-criteria> or the public docket at <http://www.regulations.gov>, Docket ID: **EPA-HQ-ORD-2013-0357**. A limited number of CD-ROM copies will be available. Contact Ms. Marieka Boyd by phone: 919-541-0031; fax: 919-541-5078; or email: [boyd.marieka@epa.gov](mailto:boyd.marieka@epa.gov) to request a CD-ROM, and please provide your name, your mailing address, and the document title, “Integrated Science Assessment for Sulfur Oxides – Health Criteria” to facilitate processing of your request.

**FOR FURTHER INFORMATION CONTACT:** For technical information, contact Dr. Tom Long, NCEA; phone: 919-541-1880; fax: 919-541-1818; or email: [long.tom@epa.gov](mailto:long.tom@epa.gov).

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<sup>1</sup> Sulfur dioxide (SO<sub>2</sub>) is the indicator for the current primary NAAQS, so it is also commonly referred to as the primary SO<sub>2</sub> NAAQS.

## **SUPPLEMENTARY INFORMATION:**

### **I. Information About the Document**

Section 108(a) of the Clean Air Act directs the Administrator to identify certain pollutants which, among other things, “cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare” and to issue air quality criteria for them. These air quality criteria are to “accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of [a] pollutant in the ambient air....” Under section 109 of the Act, EPA is then to establish NAAQS for each pollutant for which EPA has issued criteria. Section 109(d) of the Act subsequently requires periodic review and, if appropriate, revision of existing air quality criteria to reflect advances in scientific knowledge on the effects of the pollutant on public health or welfare. EPA is also required to periodically review and, if appropriate, revise the NAAQS, based on the revised air quality criteria (for more information on the NAAQS review process, see <https://www.epa.gov/naaqs>).

Sulfur oxides are one of six criteria pollutants for which EPA has established NAAQS. Periodically, EPA reviews the scientific basis for these standards by preparing an ISA (formerly called an Air Quality Criteria Document). The ISA provides a comprehensive review, synthesis, and evaluation of the most policy-relevant science to serve as the scientific foundation for EPA’s review of the current primary NAAQS for SO<sub>x</sub>. The Clean Air Scientific Advisory Committee (CASAC), an independent science advisory committee whose review and advisory functions are

mandated by Section 109(d)(2) of the Clean Air Act, is charged (among other things) with independent scientific review of the EPA's air quality criteria.

On May 10, 2013 (78 FR 27387), EPA formally initiated its current review of the air quality criteria for the health effects of sulfur oxides and the primary (health-based) NAAQS for SO<sub>x</sub>, requesting the submission of recent scientific information on specified topics. EPA held a workshop on June 12-13, 2013, to gather input from invited scientific experts, both internal and external to EPA, as well as from the public, regarding key science and policy issues relevant to the review of the health effects of sulfur oxides and the primary NAAQS for SO<sub>x</sub> (78 FR 27387). These science and policy issues were incorporated in EPA's "Integrated Review Plan for the Primary National Ambient Air Quality Standard for Sulfur Dioxide" (EPA-452/R-14-007), which was finalized in October 2014 (79 FR 66721) with a prior draft available for public comment (79 FR 14035) and discussion by the CASAC via publicly accessible teleconference consultations (79 FR 16325, 79 FR 30137, 79 FR 34739). On June 23-24, 2014, EPA held a workshop to discuss, with invited internal and external scientific experts, initial draft materials prepared in the development of the ISA (79 FR 33750). EPA considered comments on these draft materials in preparing the first external review draft of the ISA, which was released on November 24, 2015 (80 FR 73183). The first draft ISA was discussed at a public CASAC meeting on January 27-28, 2016 (80 FR 79330). Subsequently, on April 15, 2016, the CASAC provided a consensus letter to the EPA Administrator summarizing their review ([https://yosemite.epa.gov/sab/sabproduct.nsf/4620a620d0120f93852572410080d786/8DEC36A7E2A54BA485257F9600667D81/\\$File/EPA-CASAC+2016-002+Unsigned.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/4620a620d0120f93852572410080d786/8DEC36A7E2A54BA485257F9600667D81/$File/EPA-CASAC+2016-002+Unsigned.pdf)). The second

draft ISA was then developed with consideration of comments from the CASAC and the public, and includes consideration of scientific studies published through September 2016 (81 FR 89097). The CASAC panel met at a public meeting on March 20-21, 2017, to review the second draft ISA (82 FR 11449). Subsequently, on June 30, 2017, the CASAC provided a consensus letter for their review to the EPA Administrator ([https://yosemite.epa.gov/sab/sabproduct.nsf/4620a620d0120f93852572410080d786/88CD26BC35A8C8688525814F004D86EC/\\$File/EPA-CASAC-17-003.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/4620a620d0120f93852572410080d786/88CD26BC35A8C8688525814F004D86EC/$File/EPA-CASAC-17-003.pdf)). The letters from CASAC, as well as public comments received on the ISA drafts, can be found in Docket ID No. EPA-HQ-ORD-2013-0357.

EPA has considered comments by the CASAC panel and by the public in preparing this final ISA.

Dated: November 29, 2017.

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