

ATTACHMENT 1

State of California
AIR RESOURCES BOARD

Final Regulation Order

THE ADOPTION OF A REGULATION TO REDUCE SULFUR HEXAFLUORIDE
EMISSIONS IN NON-SEMICONDUCTOR AND NON-UTILITY APPLICATIONS

FINAL REGULATION ORDER

Regulation for Reducing Sulfur Hexafluoride Emissions

Adopt new Subarticle 3, Regulation for Reducing Sulfur Hexafluoride Emissions, sections 95340 to 95346, title 17, California Code of Regulations, to read as follows:

Subchapter 10. Climate Change

Article 4. Regulations to Achieve Greenhouse Gas Emission Reductions

Note: All of the text below is new language to be added to the California Code of Regulations (CCR).

Subarticle 3. Regulation for Reducing Sulfur Hexafluoride Emissions

§ 95340 Purpose.

The purpose of this Subarticle is to reduce sulfur hexafluoride emissions pursuant to the California Global Warming Solutions Act of 2006 (Health and Safety Code, sections 38500 et.seq.).

NOTE: Authority cited: Sections 38501, 38510, 38560, 38560.5, 38580, 39600, and 39601, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38560.5, 39003, 39500, 39600, and 39601, Health and Safety Code.

§ 95341 Applicability and Exemptions.

- (a) This Subarticle applies to any person that uses, possesses, purchases, distributes, manufactures, offers for sale, or sells sulfur hexafluoride or products containing sulfur hexafluoride in California, with the exception that section 95343 does not apply to the following uses:
- (1) Use in chemical vapor deposition (CVD) chamber cleaning.
 - (2) Use in etching.

- (3) Use as a dielectric medium including equipment containing sulfur hexafluoride for use as a dielectric medium.
- (4) Use as an arc quenching medium including equipment containing sulfur hexafluoride for use as an arc quenching medium.
- (5) Use in one-time testing per laboratory fume hood, provided that the use is in compliance with Cal/OSHA ventilation requirements for laboratory fume hood operations set forth in title 8, California Code of Regulations, section 5154.1(c)(2)(B), for the purpose of reducing laboratory fume hood face velocity when the hood is unattended and realizing the associated energy savings.
- (6) Medical uses, which includes only the following applications:
 - (A) Injection or other entry of sulfur hexafluoride into ~~the~~ a human or animal body for the purpose of improving health,
 - (B) Use of sulfur hexafluoride in a diagnostic tool in order to either identify a disease or condition by its outward signs and symptoms or analyze the underlying physiological/biochemical cause(s) of a disease or condition,
 - (C) Use of sulfur hexafluoride in a medical treatment process for a disease or other medical condition.
- (7) Use in testing nuclear power plant control room emergency ventilation systems every six years in compliance with the Technical Specifications Task Force (TSTF) Specification 448, January 2007, which is incorporated by reference herein.
- (8) Use in equipment calibration and in testing to find alternatives to sulfur hexafluoride use.
- (9) Use in testing hyperspectral remote sensing systems to detect toxic gases in the infrared portion of the spectrum.
- (10) Use for research in a research facility. Use for tracer gas testing applications and magnesium casting is not included and is still subject to the provisions in sections 95343 through 95346. Research facilities planning to use sulfur

hexafluoride for on- or off-site research in a use not covered by 95341(a)(1-9) must:

(A) Register with ARB in the form of a letter to the Executive Officer and must include the business name, physical address, contact name, telephone number, fax number, e-mail address, and web site address, as applicable.

(B) Monitor and report usage annually as defined in section 95345(d).

(b) Any person may apply for an exemption from section 95343 as specified below:

(1) A person may apply in writing to the Executive Officer for an exemption from the requirement of section 95343 for the uses or possession of sulfur hexafluoride identified below in subsections (A) or (B). The application must include documentation that supports the exemption claim, including the data and test methods used to generate the data, if applicable. Information submitted pursuant to this section may be claimed as confidential and such information shall be handled in accordance with the procedures specified in title 17, California Code of Regulations, sections 91000-91002.

(A) Uses of sulfur hexafluoride that result in reduced greenhouse gas emissions.

The Executive Officer may allow the use of sulfur hexafluoride if the applicant demonstrates to the satisfaction of the Executive Officer that the use of sulfur hexafluoride will result in less greenhouse gas emissions over the lifetime of the equipment, facility, or process than the use of all other alternatives.

(B) Uses or possession of sulfur hexafluoride with no alternatives.

The Executive Officer may allow the use and/or possession of sulfur hexafluoride if the applicant demonstrates to the satisfaction of the Executive Officer that there is no viable alternative to sulfur hexafluoride in the specified use or that there is no viable alternative for possessing sulfur hexafluoride for an out-of-state or other use. No exemption shall be granted unless the applicant provides and agrees to comply with a mitigation plan identifying a list of actions to be undertaken by the applicant to minimize greenhouse gas and sulfur hexafluoride emissions.

(2) *Procedure for responding to an exemption from section 95343.*

(A) Within 60 days of receipt of an exemption application the Executive Officer shall determine whether the application is complete, or that specified additional documentation is required to make it complete. Within 60 days of receipt of the specified additional information, the Executive Officer shall advise the applicant in writing either that the application is complete, or that specified additional information is still required before it can be deemed complete.

(B) Within 90 days after an application has been deemed complete, the Executive Officer shall determine whether, and under what conditions, an exemption from the requirements of section 95343 will be permitted. The Executive Officer shall notify the applicant of the decision in writing and shall specify such terms and conditions as are necessary to insure that the requirements of section 95341(b)(1)(A) or 95341(b)(1)(B) are met and will continue to be met.

(C) The Executive Officer and the applicant may mutually agree to an extension of any of the time periods specified in this section, and additional supporting documentation may be submitted by the applicant before a decision has been reached.

(3) *Revocation or Modification of Exemption:* If the Executive Officer determines that the use for which an exemption has been granted no longer meets the criteria specified in section 95341(b)(1)(A) or (b)(1)(B), or that the applicant is not following the mitigation plan submitted pursuant section 95341(b)(1)(B), the Executive Officer may modify or revoke the exemption. The Executive Officer shall not modify or revoke the exemption without first affording the applicant an opportunity for a hearing in accordance with the procedures specified in title 17, California Code of Regulations, Division 3, Chapter 1, Subchapter 1.25, Article 2 (commencing with section 60055.1).

NOTE: Authority cited: Sections 38501, 38510, 38560, 38560.5, 38580, 39600, and 39601, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38560.5, 39003, 39500, 39600, and 39601, Health and Safety Code.

§ 95342 Definitions.

- (a) For the purposes of this Subarticle, the following definitions apply:
- (1) “ARB” means the California Air Resources Board.
 - (2) “Arc Quenching Medium” means the use of a material to interrupt an electrical arc.
 - (3) “Cal/OSHA” means the California Department of Industrial Relations, Division of Occupational Safety and Health.
 - (4) “Chamber Cleaning” means the process of using fluorinated gases to remove excess materials from chemical vapor deposition chamber walls to prevent contamination of wafers to be processed.
 - (5) “Chemical Vapor Deposition (CVD)” means deposition of thin films on wafers by placing the wafers in a mixture of gases, including nitrogen or other gas used as a carrier, which react at the surface of the wafers.
 - (6) “Dielectric Medium” means the use of a material that does not conduct electricity but can sustain an electric field, with electrical conductivity of less than a millionth (10^{-6}) of a siemens.
 - (7) “Distributor” means any person who sells or supplies sulfur hexafluoride in California, except that “distributor” does not include users who sell to a recycler or persons who return products to the seller.
 - (8) “Etching” means a chemical reactive process for selectively removing material on a wafer using fluorinated, ionized gases
 - (9) “Equipment Calibration” means the process of establishing the relationship between a measuring device and the units of measure. This is done by comparing a device or the output of an instrument to a standard having known measurement characteristics.
 - (10) “Executive Officer” means the Executive Officer of the California Air Resources Board, or his or her delegate.
 - (11) “Greenhouse gas” includes carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs).

- (12) “Investment Casting” (also called “precision casting” or the “lost wax process”) means the process of casting magnesium into a mold produced by surrounding, or investing, an expendable pattern with a refractory material.
- (13) “Laboratory fume hood” means a boxlike structure enclosing a source of potential air contamination, with one open or partially open side, into which air is moved for the purpose of containing and exhausting air contaminants, generally used for bench-scale laboratory operations but not necessarily involving the use of a bench or table.
- (14) “Military Applications” means the acquisition, research, development, testing, evaluation and training related to tactical vehicles, vessels, aircraft, equipment and weaponry owned or operated by the armed forces of the United States.
- (15) “Military Tracer Gas Array” means the simultaneous use of multiple Tracer ES&T Model 2600 Tracer Gas Analyzers (TGA), to measure sulfur hexafluoride and other gases in support of military training and operations as well as United States military applications.
- (16) “Person” shall have the same meaning as defined in Health and Safety Code section 39047.
- (17) “Research” means an objective and systematic investigation aimed at the discovery and interpretation of scientific facts or revision of accepted scientific theories or laws in the light of new facts that cannot be answered a priori or by other methods.
- (18) “Research Facility” means a physical location consisting of one or more buildings, such as a campus, which are all part of a single entity and whose primary purpose is to conduct research and/or provide education. The facility is under close supervision of technically trained personnel and is not engaged in the manufacture of products for sale in commerce or other off-site distribution. A research facility must be a U.S. government owned national laboratory or an accredited post-secondary institution that grants advanced academic degrees. Accreditation must be from a U.S. Department of Education approved accrediting agency.

(19) “Sand Casting” means the process of producing a part by forming a mold from a sand mixture and pouring molten magnesium into the cavity in the mold.

(20) “Tracer ES&T Model 2600 Tracer Gas Analyzers” means portable equipment designed, manufactured, and sold by Tracer Environmental Sciences & Technologies, Inc. (Tracer ES&T), a California Corporation, and designed specifically to analyze continuous samples of sulfur hexafluoride in the concentration range of 5 parts per trillion to 50 parts per billion.

(21) “Tracer Gas Testing” means the process of marking air or other media with a gas or other substance , which is released into an enclosure, laboratory fume hood, room, building, or environment to detect, measure, monitor, or evaluate flow rate, leakage, or dispersion or dilution characteristics.

(22) “User” means any person who uses sulfur hexafluoride.

NOTE: Authority cited: Sections 38501, 38510, 38560, 38560.5, 38580, 39600, and 39601, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38560.5, 39003, 39500, 39600, and 39601, Health and Safety Code.

§ 95343. Restrictions on Use, Sale, Possession and Release of Sulfur Hexafluoride.

(a) Except as provided in section 95341(Applicability), the following sulfur hexafluoride restrictions apply beginning on the dates specified below in Section 95343(b):

- (1) No person shall purchase or use sulfur hexafluoride in California. This restriction does not apply to distributors.
- (2) No person shall own or otherwise possess sulfur hexafluoride in California after one year from the applicable effective date specified in section 95343(b).
- (3) No person shall sell, supply, distribute, or offer for sale sulfur hexafluoride in California.
- (4) No person shall sell, supply, distribute, offer for sale, or manufacture for sale any product that contains sulfur hexafluoride in California.
- (5) No person shall intentionally emit sulfur hexafluoride in California. This restriction does not apply to accidental releases that occur when recycling or

recovering sulfur hexafluoride or when filling or refilling sulfur hexafluoride canisters.

(b) Section 95343(a) shall apply after the effective dates specified in the following Table:

Applications	Effective Dates
All applications except those listed below	January 1, 2011
Tracer Gas Testing	January 1, 2013
Magnesium Sand Casting	January 1, 2013
Magnesium Investment Casting	January 1, 2013
Military Applications	January 1, 2013
Military Tracer Gas Array	January 1, 2020

NOTE: Authority cited: Sections 38501, 38510, 38560, 38560.5, 38580, 39600, and 39601, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38560.5, 39003, 39500, 39600, and 39601, Health and Safety Code.

§ 95344 Enforcement.

(a) *Penalties.* Penalties may be assessed for any violation of this subarticle pursuant to Health and Safety Code section 38580. Each day during any portion of which a violation occurs is a separate offense.

(b) *Injunctions.* Any violation of this subarticle may enjoin pursuant to Health and Safety Code section 41513.

(c) *Revocation.* The Executive Officer may revoke any Exemption issued pursuant to this sub article for a violation of this sub article.

(d) Each day or portion thereof that any report required by this sub article remains uncommitted, is submitted late, or contains incomplete or inaccurate information, shall constitute a single, separate violation of this sub article.

NOTE: Authority cited: Sections 38501, 38510, 38560, 38560.5, 38580, 39600, 39601, 41510, and 41513, and Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38560.5, 38580, 39003, 39500, 39600, 39601, 41510, and 41513 Healths and Safety Code.

§95345 Registration, Recordkeeping, and Reporting Requirements.

(a) **Registration for Distributors of Sulfur Hexafluoride.** Distributors of sulfur hexafluoride must register with ARB on or before March 30, 2010. Distributors who begin conducting business in California after March 30, 2010, must register with ARB no later than 30 days after the start of their business operations. Registration shall be in the form of a letter to the Executive Officer and must include the business names, physical address, contact name, telephone number, fax number, e-mail address, and web site address of the distributor, as applicable. Distributors will receive a copy of the regulation within 60 days of registering with the Executive Officer.

(b) **Recordkeeping for Distributors of Sulfur Hexafluoride.** For each sale or supply of sulfur hexafluoride, distributors of sulfur hexafluoride must retain invoices showing the purchaser's name, business name, intended use, physical address, contact name, telephone number, fax number, e-mail address, web site address, as applicable sale date, and quantity of sulfur hexafluoride purchased. These invoices must be retained by the distributor for at least three years.

On or before March 30, 2010 distributors must also provide all of their known purchasers of sulfur hexafluoride within the last five years, except for those purchasers exempted under section 95341(a)(1-4), a copy of this regulation (*title 17, California Code of Regulations, sections 95340 – 95346*), as approved by ARB and the California Office of Administrative Law. Distributors must also retain documentation showing that they have met this requirement for a period of three years. This documentation requirement will be satisfied if the distributor retains a copy of the materials mailed or emailed and the contact information for where the materials were sent. Contact information includes the retailer name, business name,

physical address, contact name, telephone number, fax number, e-mail address, and web site address, as applicable.

Distributors of sulfur hexafluoride must also provide records and other sources to ARB upon request by the Executive Officer or his or her designee. Records include copies of all invoices, books, correspondence, electronic data, or other pertinent documents in its possession or under its control that the manufacturer, distributor or retailer retains that are necessary to prove compliance with the requirements of this sub article.

(c) Recordkeeping for Purchasers and Users of Sulfur Hexafluoride.

After March 30, 2010 or upon the operative date of this sub article, whichever is later, all persons who purchase or use sulfur hexafluoride, except for those users exempted under section 95341(a)(1-4), must keep records showing the annual quantity of sulfur hexafluoride purchased and used. These records must be retained for at least three years. Users of sulfur hexafluoride must also provide ARB with copies of records and other sources upon request by the Executive Office or his or her designee.

(d) Annual Reporting for Research Uses of Sulfur Hexafluoride

Beginning in calendar year 2011, all persons who purchase or use sulfur hexafluoride for research purposes, except for those users exempted under section 95341(a) (1-9), must submit an annual report to the Executive officer by March 30th for the previous calendar year. The report must include the following:

- (1) The total quantity of sulfur hexafluoride purchased and used in the previous year;
- (2) Quantity of sulfur hexafluoride used for each research activity undertaken in the previous year;
- (3) Explanation of each research activity; and
- (4) Description of efforts undertaken to minimize sulfur hexafluoride emissions.

(e) Annual Reporting for Distributors of Sulfur Hexafluoride.

Beginning in calendar year 2011, each distributor of sulfur hexafluoride must submit an annual report to the Executive Officer by March 30th for the previous calendar year. The report must include:

- (1) Total quantity in mass of sulfur hexafluoride sold; and
- (2) A record of transactions of sales to each purchaser of sulfur hexafluoride, including the complete contact information listed in section 95345(b). Records must include the date and quantity of each sale.

(f) Treatment of Confidential Information

Information submitted pursuant to this section may be claimed as confidential, and such information shall be handled in accordance with the procedures specified in title 17 California Code of Regulations, sections 91000-91022.

NOTE: Authority cited: Sections 38501, 38510, 38560, 38560.5, 38580, 39600, 39601, and 41511 Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38560.5, 39003, 39500, 39600, 39601, and 41511 Health and Safety Code.

§95346 Severability.

Each part of this subarticle is deemed severable, and in the event that any part of this subarticle is held to be invalid, the remainder of this subarticle shall continue in full force and effect.

NOTE: Authority cited: Sections 38501, 38510, 38560, 38560.5, 38580, 39600, and 39601, Health and Safety Code. Reference: Sections 38501, 38505, 38510, 38550, 38551, 38560, 38560.5, 39003, 39500, 39600, and 39601, Health and Safety Code.