

High-Purity Gases for CVD

Several high-purity gases and gaseous mixtures are used as precursors in the manufacture of integrated circuits (IC). Silane, disilane, germane, and digermane are used for the deposition of amorphous silicon, epitaxial silicon, silicon-germanium (SiGe) alloys, and dielectrics that are used in the manufacture of integrated circuits and photovoltaic materials. Trimethylboron is used in the manufacture of boron-carbon thin films, which are of interest as protective coatings for a variety of materials and devices against surface oxidation and wear. Methylsilane is used as a precursor to inorganic/organic hybrid polymers used as photoresists. Diborane, phosphine, germanium(IV) fluoride, boron trifluoride, and silicon tetrafluoride are used as dopants in CVD and ion implantation processes. Thin films derived from silicon tetrafluoride show visible photoluminescence (PL) at room temperature. Additionally, deuterated analogs of several widely used hydride gases possess unique properties and show promise for improving device reliability and performance.

Aldrich offers a complete line of high-purity gases for the electronics industry. All of our electronic grade gases are packaged under clean room conditions in 316 stainless steel (316SS) internally electro-polished lecture bottles with a stainless steel valve and either a CGA 330 or 350 outlet. The cost of the 316SS lecture bottle is included in the purchase price; the bottle is non-refillable to ensure product quality. Our Customer Services Department can arrange for the disposal of empty cylinders for a nominal fee. A Certificate of Analysis is available upon request. For purity specifications, technical information, and use references, visit us on the Web at the URL given below or call (800) 231-8327.

46,308-6	Boron trifluoride , 99.99+% Electronic Grade	20g 100g
46,305-1	Diborane , 10% in hydrogen Electronic Grade	24L 48L
46,313-2	Diborane-d_6 , 10% in deuterium Electronic Grade	24L 48L
46,314-0	Diborane-d_6 , 10% in helium Electronic Grade	24L 48L
46,307-8	Digermane , 10% in hydrogen Electronic Grade	2.4L
46,304-3	Disilane , 99.998% Electronic Grade	10g 20g
46,302-7	Germane , 99.997+% Electronic Grade	5g 15g
46,310-8	Germane-d_4 Electronic Grade	2.5g
46,300-0	Germanium(IV) fluoride , 99.9+% Electronic Grade	5g 15g
46,303-5	Methane , 99.998+% Electronic Grade	24L 48L
46,299-3	Methylsilane , 99.9+% Electronic Grade	10g 20g
29,564-7	Phosphine , 99.9995+% Electronic Grade	10g 50g
46,312-4	Phosphine-d_3 Electronic Grade	1g 5g
33,389-1	Silane , 99.998+% Electronic Grade	10g 50g
46,311-6	Silane-d_4 , 98 atom % D Electronic Grade	1g 5g
46,301-9	Silicon tetrafluoride , 99.99+% Electronic Grade	20g 100g
46,309-4	Trimethylboron , 98.35+% Electronic Grade	5g 10g
46,342-6	Trimethylboron-d_9 , 99 atom % D Electronic Grade	5g 10g

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P.O. Box 355, Milwaukee, WI 53201 USA Telephone: 414-273-3850 • 800-558-9160 Fax: 414-273-4979 • 800-962-9591 Web Site: www.sigma-aldrich.com

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