SULFUR HEXAFLUORIDE

1. Scope

This specification applies to sulfur hexafluoride for use as an electrical insulating gas.

2. Applicable Documents

ASTM Standards:

D1070	Test Methods for Specific Gravity (Relative Density) of Gaseous Fuels
D2029	Test Methods for Water Vapor Content of Electrical Insulating Gases by Measurement of Dew Point
D2284	Test Method for Acidity of Sulfur Hexafluoride
D2472	Standard Specification for Sulfur Hexafluoride
D2685	Test Method for Nitrogen and Carbon Tetrafluoride in Sulfur Hexafluoride by Gas Chromatography

3. Detail Requirements

Sulfur Hexafluoride for use as an electrical insulation material shall conform to the requirements prescribed in Table 1.

4. Sampling

All sampling for the test methods listed in Section 5 shall be with the cylinder inverted; that is, the cylinder valve shall be lower than any other portion of the cylinder. This will allow liquid phase delivery from the cylinder.

5. Test Methods

5.1 Water Content - Test Method D2029.

5.2 Hydrolyzable Fluorides - Determine the acidity, expressed as HF, in accordance with Test Method D2284.

5.3 Air - Determine the amount of noncondensable gases, expressed as nitrogen, by gas chromatographic analysis in accordance with Test Method D2685.

5.4 Carbon Tetrafluoride - Gas chromatographic analysis in accordance with Test Method D2685

5.5 Molecular Weight - Test Method D1070.

5.6 Toxicity - The Underwriters' Laboratories criterion for acceptance in Group VI as follows: Guinea pigs should not appear to have injury when exposed for 2 hours to a gas concentration of 20% volume in air.

5.7 Assay - Assay shall be by difference, after impurity content has been determined.

standards coordinator	*standards supervisor*	*unit director*
John Shipek	John Shipek	Darnell Cola

TABLE 1

Detail Requirements for Sulfur Hexafluoride

Requirements	Property
Water Content, maximum dew point, degrees Centigrade*.	– 65º C (– 85º F)
Hydrolyzable fluorides, expressed as HF acidity, maximum parts per million (ppm) by weight.	0.3 ppm
Air, expressed as N_2, maximum, weight percent.	0.05%
Carbon tetrafluoride, maximum, weight percent.	0.05%
Molecular Weight	146 ± 2%
Toxicity	The manufacturer shall certify that the material is at least as nontoxic as Group VI of the Underwriters' Laboratories classification.
Assay, minimum, weight percent.	99.9%

* Corresponds to a maximum water content of 0.65 ppm by weight or 5.3 ppm by volume.

Stock Unit: not stocked, order from vendor