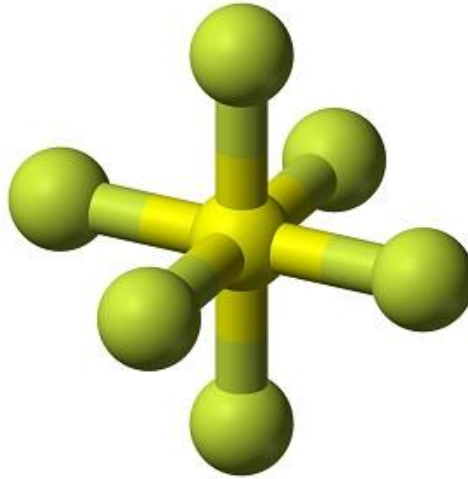


## Sulfur Hexafluoride (SF6) Gas, Technical Grade



### 1. Scope

This standard covers the requirements for technical grade sulfur hexafluoride (SF6) gas packaged in steel cylinders.

This standard applies to the following Seattle City Light stock numbers:

<b>Stock No.</b>	<b>Description</b>
014420	18 lb cylinder filled with SF6 gas
014520	18 lb cylinder empty
726482	115 lb cylinder filled with SF6 gas
014521	115 lb cylinder empty

Detailed requirements for the safe and legal handling and transportation of SF6 gas are outside the scope of this standard.

### 2. Application

Technical grade SF6 is a non-poisonous, non-flammable gas that is used as electrical insulation in substation circuit breakers and other gas-insulated equipment.

Technical grade SF6 has very low levels of contaminants.

### 3. Industry Standards

**IEC 60376, Edition 3.0 2018-05** – Specification of technical grade sulfur hexafluoride (SF6) and complementary gases to be used in its mixtures in electrical equipment.

Standards Coordinator  
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## 4. Requirements

### 4.1 SF6 Gas

SF6 gas shall meet the requirements of IEC 60376 and Table 4.1.

**Table 4.1 SF6 Gas Requirements**

<b>Substance</b>	<b>Concentration</b>
Purity	> 98.5% volume
H <sub>2</sub> O	< 200 ppmv
Air	< 1% volume
CF <sub>4</sub>	< 0.4% volume
Mineral oil	< 10 ppmv
Total acidity	< 7 ppmv

### 4.2 Cylinders

SF6 gas cylinders shall meet the requirements of Table 4.2.

**Table 4.2 SF6 Gas Cylinder Requirements**

<b>Stock No.</b>	<b>014420 and 014520</b>	<b>726482 and 014521</b>
Cylinder gas fill, nominal, lb	18	115
Cylinder material	Steel	Steel
Cylinder size, nominal, cf	40	220-277
Cylinder length <sup>a</sup> , nominal, in	17.5	51
Cylinder tare weight <sup>b</sup> , nominal, lb	25	113
Valve type	CGA590 (two way)	CGA590 (two way)

Notes:

a. To the top of the cylinder neck; add 5-6 inches for cap

b. Add approximately 2-4 lb for weight of valve and cap

## 5. Marking

Each SF6 gas cylinder shall be marked with: Sulfur Hexafluoride, UN 1080.

## 6. Packaging

SF6 cylinders must be securely lashed in an upright position or loaded into racks securely attached to the vehicle or packed in boxes or crates of such dimensions to prevent their overturning, or securely loaded in a horizontal position. Transport in accordance with Federal, State or Province and local regulations.

SF6 cylinders shall be provided with cap installed.

Shipping containers shall be legibly marked with SCL purchase order number.

## 7. Issuance

Stock Unit: EA

## 8. Approved Manufacturer

DILO Production Inc.

## 9. Sources

**49 CFR 173.6 of the Code of Federal Regulations (CFR);** Volume 49, Section 173

**SCL Material Standard 7264.1** (canceled); "Sulfur Hexafluoride"

**IEEE Std C37.122.3-2011;** Guide for Sulphur Hexafluoride (SF6) Gas Handling for High-Voltage (over 1000 Vac) Equipment

**CIGRE SF6 234 (2003)**

**ISO 9809-1, Second edition, 2010-04-15;** Gas cylinders – Refillable seamless steel gas cylinders – Design, construction and testing – Part 1: Quenched and tempered steel cylinders with tensile strength less than 1 100 MPa

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