

108.3 - Sulfur, Mercury, and Chlorine in Fuels (liquid and solid forms)

These materials are intended for analysis of sulfur, mercury, and chlorine in fossil fuels. For further information see:

[SP 260-84, Sampling, Materials Handling, Processing, and Packaging of NBS Sulfur in Coal](#)

[SP 260-167 A Method for the Preparation of NIST Traceable Fossil Fuel Standards with Concentration Intermediate with SRM Values](#)

See other related links:

[Table 106.3 Mercury in Activated Carbon.](#)

[Table 108.1 Alcohols and Ethers \[Oxygenates\] in Gasoline.](#)

[Table 108.2 Metal Constituents in Fossil Fuels \(liquid forms\)](#)

[Table 108.6 Fossil Fuel Trace Elements \(solid forms\).](#)

[Table 114.2 Lubricating Base Oils](#)

Liquid forms (crude oil, gasoline, middle distillates, residual fuel oils, and Di-n-Butyl Sulfide)

SRM	Description	Unit Size	Mercury	Sulfur	Water	Heat of Combustion*
Sulfur in Di-n-Butyl Sulfide						
2720	Sulfur in Di-n-Butyl Sulfide	5 x 4.5 mL		21.91 %		
Crude oil						
2721	Crude Oil (Light -Sour)	5 x 10 mL	0.0417 µg/kg	1.5832 %	134 mg/kg	
2722	Crude Oil (Heavy-Sweet)	5 x 10 mL	0.1292 µg/kg	0.21037 %	99 mg/kg	
2778	Mercury in Crude Oil	5 x 10 mL	39.98 µg/kg			
Gasoline						
2298	Sulfur in Gasoline (High Octane)	5 x 20 mL		4.7 mg/kg		
2299	Sulfur in Gasoline (Reformulated)	5 x 20 mL		13.6 mg/kg		
Middle distillates						
1617b	Sulfur in Kerosine (High Level)	100 mL		1250 mg/kg		
2723b	Sulfur in Diesel Fuel Oil (Nominal Mass Fraction 10 mg/kg)	100 mL		9.06 mg/kg		
2770	Sulfur in Diesel Fuel Oil (Nominal Mass Fraction 40 mg/kg)	10 x 10 mL		41.57 mg/kg		
Residual fuel oil						
1619b	Sulfur in Residual Fuel Oil (Nominal Mass Fraction 0.7 %)	100 mL	3.46	0.6960		
1622e	Sulfur in Residual Fuel Oil (Nominal Mass Fraction 2 %)	100 mL		2.1468		
2717a	Sulfur in Residual Fuel Oil (Nominal Mass Fraction 3%)	100 mL		2.9957		(42.29) MJ/kg

Solid forms (coal)

SRM	Description	Unit Size	Bromine	Chlorine	Furnace Ash	Heat of Combustion*	Magnesium	Manganese	Mercury	Sulfur
Bituminous Coal										
1632e	Trace Elements in Coal (Bituminous)	50 g		963 mg/kg	(8.488) %		391 mg/kg	18.4 mg/kg	135.1 µg/kg	
2683c	Bituminous Coal (Nominal Mass Fraction 2 % Sulfur)	50 g		1127 mg/kg	(9.870) %	(30.24) MJ/kg			90.0 µg/kg	1.952 %
2684c	Bituminous Coal (Nominal Mass Fraction 3 % Sulfur)	50 g		975 mg/kg	(7.945) %		494 mg/kg	20.51 mg/kg	68.8 µg/kg	3.027 %
2685c	Bituminous Coal (Nominal Mass Fraction 5 % Sulfur)	50 g	4.94 mg/kg	554.0 mg/kg	(15.95) %		814 mg/kg	36.84 mg/kg	149.4 µg/kg	4.72 %
2692c	Bituminous Coal (Nominal Mass Fraction 1 % Sulfur)	50 g		1338 mg/kg	7.499 %				179.0 µg/kg	1.064 %
2693	Bituminous Coal (Nominal Mass Fraction 0.5 % Sulfur)	50 g		369.6 mg/kg	9.4 %				37.3 µg/kg	0.4571 %
8499	Trace Elements in Coal (Bituminous)	50 g		963 mg/kg	(8.488) %		391 mg/kg	18.4 mg/kg	135.1 µg/kg	
Subbituminous Coal										
1635a	Trace Elements in Coal (Subbituminous)	50 g			(6.29) %				83.6 µg/kg	0.2909 %
2682c	Subbituminous Coal (Nominal Mass Fraction 0.5 % Sulfur)	1 bottle x 50 g		20.1 mg/kg					105.1 µg/kg	0.4906 %

Solid forms (coke)

SRM	Description	Unit Size	Aluminum	Calcium	Carbon	Cobalt	Furnace Ash	Heat of Combustion*	Hydrogen	Iron	Nickel	Nitrogen	Silicon	Sodium	Sulfur	Vanadium	Volatile Matter
2775	Sulfur in Foundry Coke	50 g			91.34 %		5.77 %		0.41 %			1.16 %			0.5816 %		1.31 %
2776	Sulfur in Furnace Coke	50 g			89.15 %		8.06 %		0.26 %			1.21 %			0.825 %		0.98 %
2718a	Green Petroleum Coke	50 g	15.4 mg/kg	165.5 mg/kg	(90) %	5.71 mg/kg	(1) %	(35) MJ/kg	3.725 %	287 mg/kg	144.06 mg/kg	(1) %	(50) mg/kg	83.0 mg/kg	4.690 %	310 mg/kg	
2719	Calcined Petroleum Coke	50 g	58.9 mg/kg	57.7 mg/kg	97.06 %	18.6 mg/kg	(0.12) %	(32.90) MJ/kg	0.16 %	201.6 mg/kg	204 mg/kg	1.17 %	(138) mg/kg	15.1 mg/kg	0.8877 %	58.6 mg/kg	(0.54) %

- Certified values are normal font.

- Non-certified and reference values are italicized.

- Information values and values of potential interest are within parentheses

* See certificate for more information.