

Flow Solution™ FS 3700 Automated Chemistry Analyzer

Chloride, Standard Methods by SFA
Cartridge Part Number 330361CT

Scope and Application

This method is used for the determination of chloride in drinking water, surface water, and domestic and industrial waste according to Standard Methods 4500–Cl⁻ E.¹ Additionally, this method enables chloride analysis according to ISO Method 15682.²

Method Performance

Range	1.0–200 mg/L
Rate	60 samples/hour
Precision	1% RSD at mid-point of range
Method Detection Limit (MDL)	0.12 mg/L

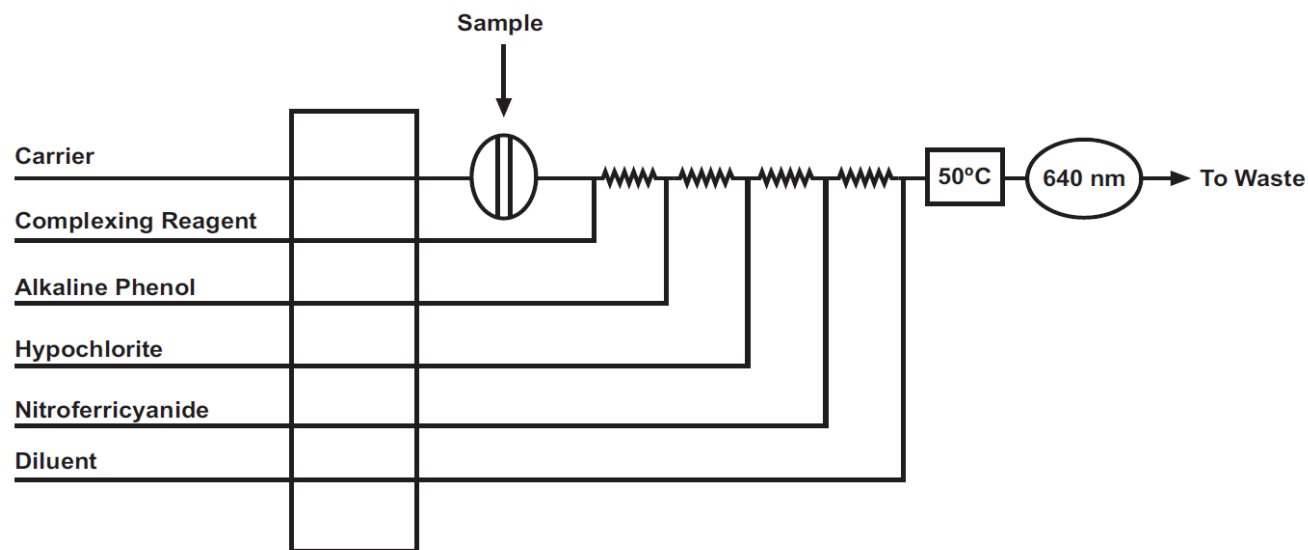


Figure 1. General flow diagram for Chloride by SFA, Standard Methods 4500–Cl⁻ E

Reagents and Calibrants

Chemical Name	CAS #	Chemical Formula	Part Number
Brij®-35	9002-92-0	$(C_2H_4O)_n C_{12}H_{26}O$	326126
Ferric nitrate, nonahydrate	7782-61-8	$Fe(NO_3)_3 \cdot 9H_2O$	
Kleenflow™ Basic			A002294
Mercuric thiocyanate	592-85-8	$Hg(SCN)_2$	
Methanol	67-56-1	CH_3OH	
Nitric acid	7697-37-2	HNO_3	
Sodium chloride	7647-14-5	$NaCl$	
Water, deionized		H_2O	
Additionally, the following chemical(s) may be needed for sample preservation or treatment.			
Thioacetamide	62-55-5	C_2H_5NS	

Summary of USEPA Method 350.1

Method

1. Chloride reacts with mercuric thiocyanate, liberating thiocyanate ion by the formation of soluble mercuric chloride. In the presence of ferric ion, free thiocyanate ion forms a highly colored ferric thiocyanate complex. The colored complex is measured at 480 nm.³
2. Assure analysis quality through reproducible calibration and testing of the segmented flow analysis (SFA) system.

Interferences

1. There are no significant chemical interferences for this method.
2. Filter turbid samples prior to analysis.

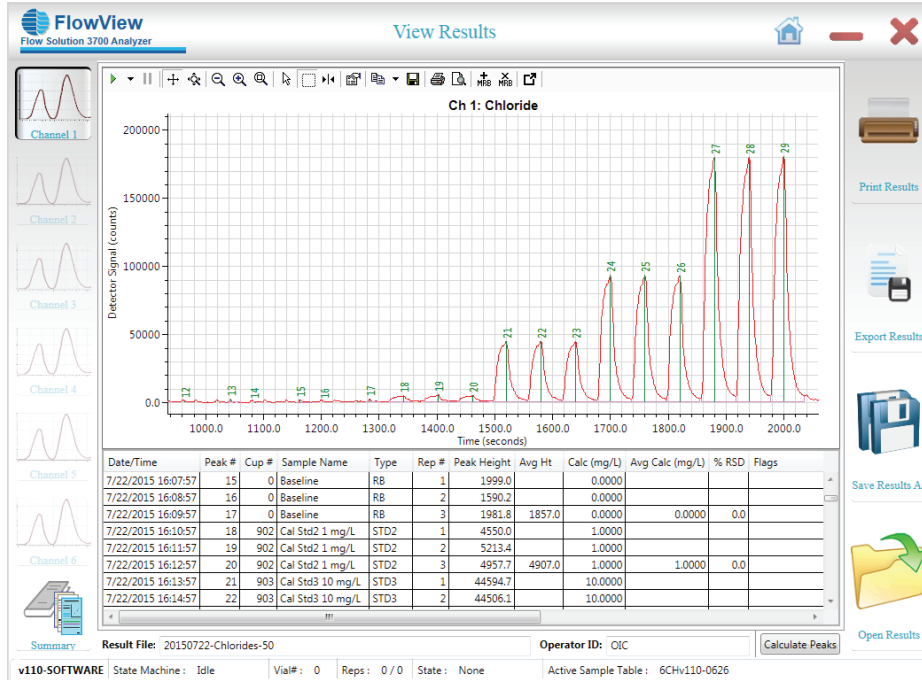


Figure 2. Chloride Low Range Calibration Series

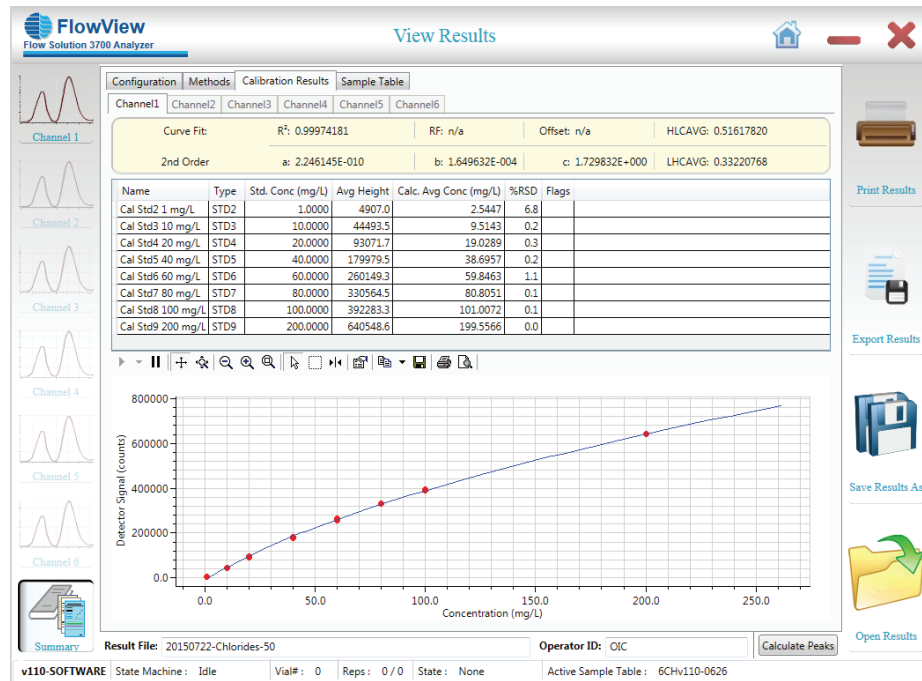


Figure 3. Calibration curve and statistics