



Elemental Scientific

prepScout

Fully Automated Laboratory Analysis
and Online Monitoring System



prepScout
Central Station



prepScout
Remote Station

ICP | ICPMS | AA

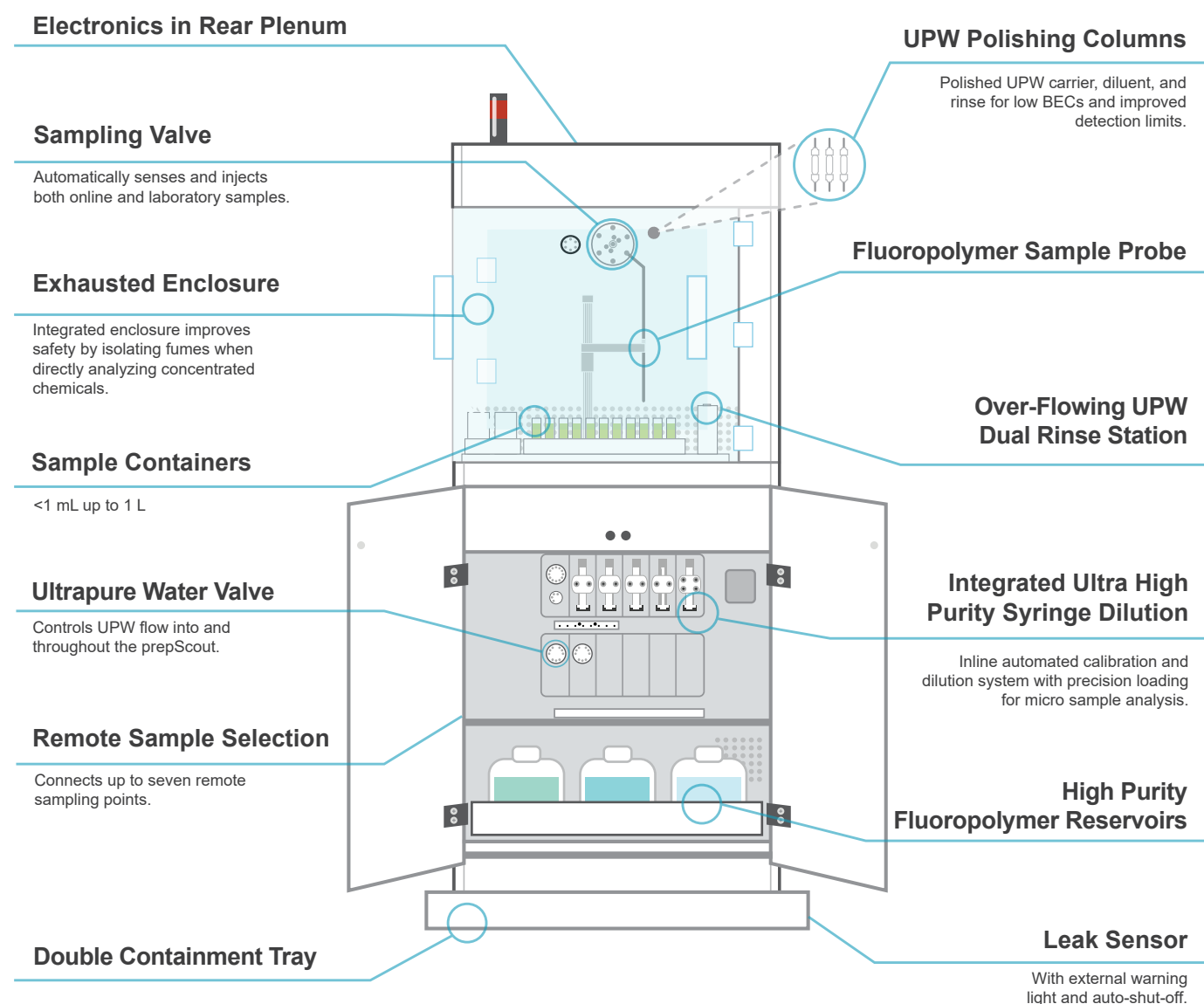
prepScout Online Monitoring System

prepScout

prepScout combines two important functions for determining metals in ultrapure semiconductor-grade chemicals by ICPMS

- prepFAST SF high-purity, fully automated laboratory system
- Scout 24/7 online monitoring system

prepScout Central Station Diagram



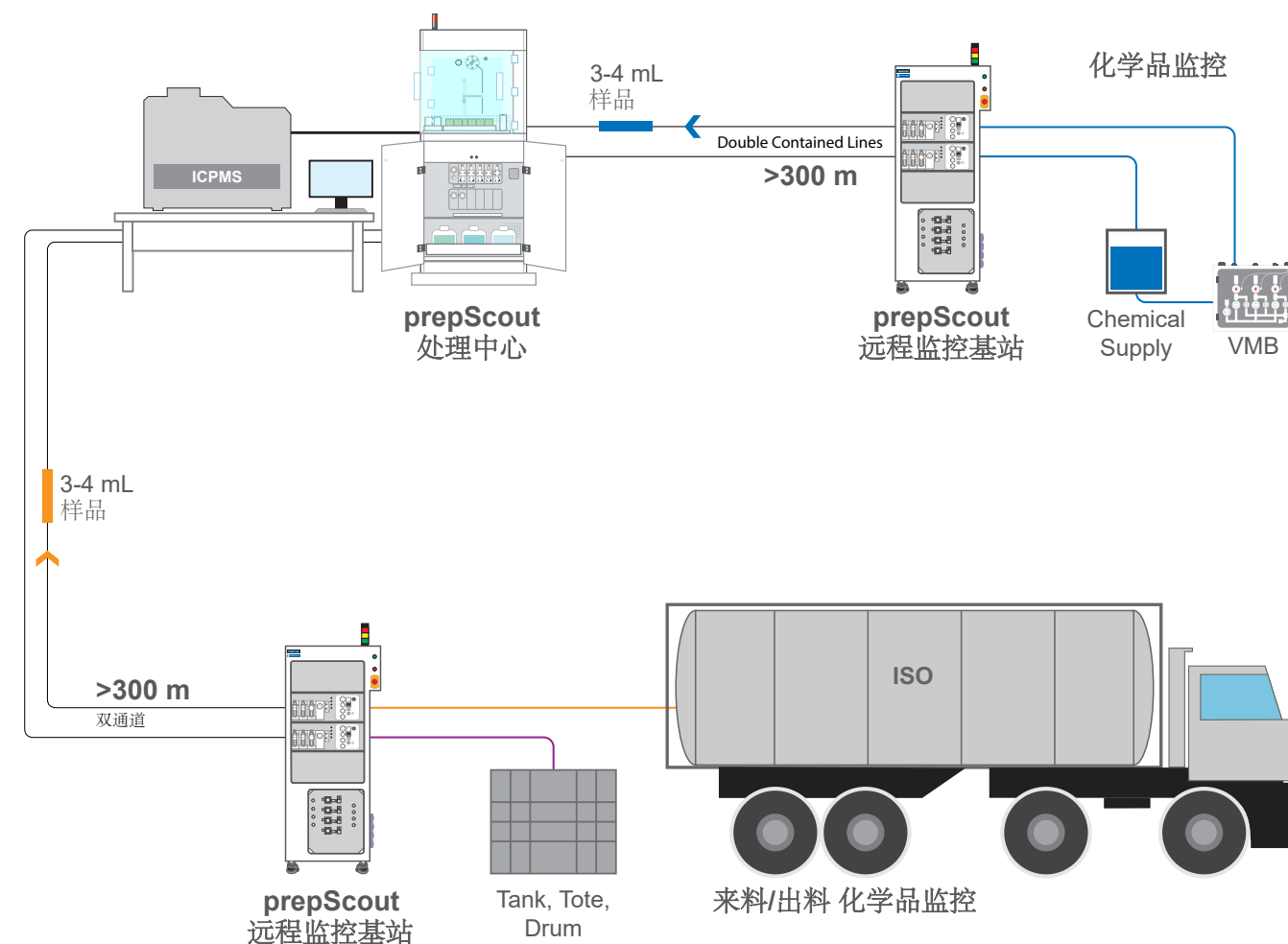
prepScout Flexible Workflow

prepScout automates both ultrapure laboratory sample analysis and online monitoring of semiconductor grade chemicals.

Online monitoring: prepScout collects, prepares, transfers, and 24/7 monitors metals from sample points at distances up to 300 m from the Central Station.

Laboratory analysis: prepScout samples, prepares and introduces the full range of laboratory samples from micro-volume VPD samples to large bottles of pure chemicals.

Autocalibration: prepScout offers unparalleled capability for autocalibrating all semiconductor metals by ICPMS. It provides ultralow BECs and consistent and accurate calibrations at single-digit-ppt to sub-ppt concentrations.



Example diagram for remote monitoring of incoming/outgoing chemicals and process chemicals using prepScout.

Key Components

Online Sampling Options



prepScout Remote Station

prepScout Samplers

- 远程抽取样品
- 远程稀释样品
- 远程按指令抽取样品
- 每种化学品专用传输管道
- 远程传输距离 > 300m
- 小体积样品传输 (< 10ml)



prepScout Remote Station for Organics

prepScout Central Station

- 全自动校准 ICPMS (External and/or MSA)
- 全自动样品稀释
- 微量样品测试
- 大体积样品测试
- 自动QC功能
- 多种化学品及数据远程监控

Software

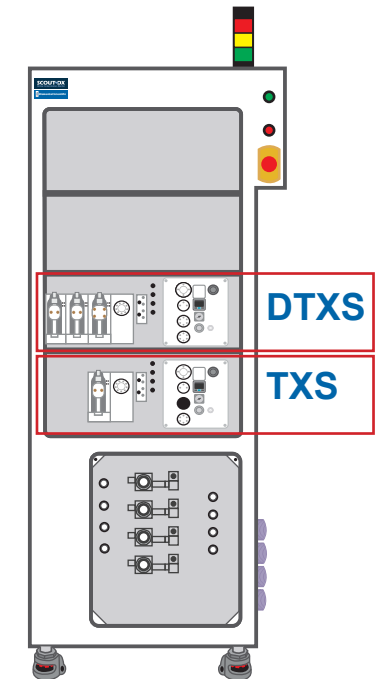
- SEMI-compliant 软件界面
- 全自动 QC
- 智能报警

prepScout Remote Samplers

Up to four prepScout Remote Samplers are enclosed within a Remote Station and connect to chemical supply points around the facility. The Remote Sampler collects a portion of sample, prepares the sample, then pneumatically transfers the sample to the prepScout Central Station.

prepScout TXS Samplers collect discrete, small volume samples (≤ 10 mL) and transfer them to the prepScout Central Station. TXS Samplers are used for low viscosity samples which do not require preparation, e.g. H_2O_2 , HCl , HF , etc.

prepScout DTXS Samplers utilize precision syringes to automatically dilute the sample after collection. After dilution, the sample is transferred to the Central Station. DTXS Samplers are used for viscous samples which require dilution, e.g. 98% H_2SO_4 .



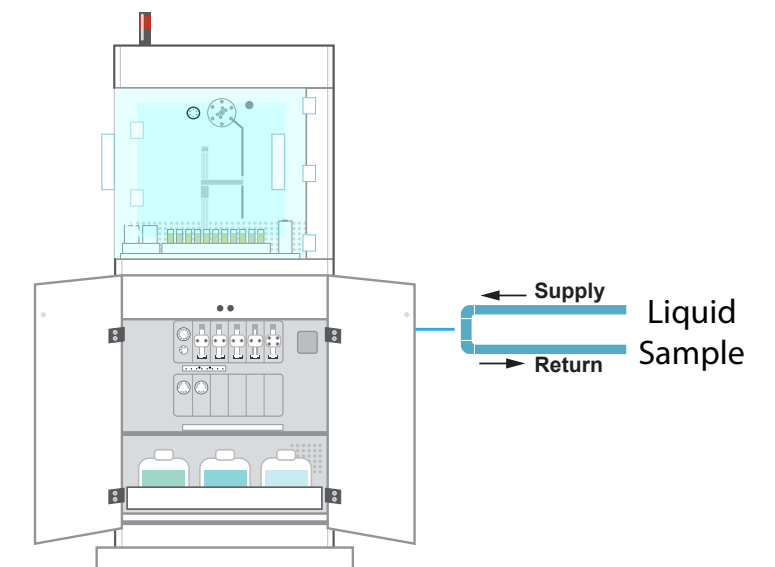
prepScout Remote Samplers within a Remote Station

prepScout Direct Sampler

In cases where the sampling point is close to the prepScout Central Station, a Direct Sampler delivers the sample directly to the Central Station. The prepScout Central Station can support up to three Direct Sampling Interfaces.

A combination of up to 7 Remote or Direct Samplers can be controlled using a single prepScout system.

For higher number of Sampling Points a standard Scout system is recommended.



prepScout Direct Sampler Approach

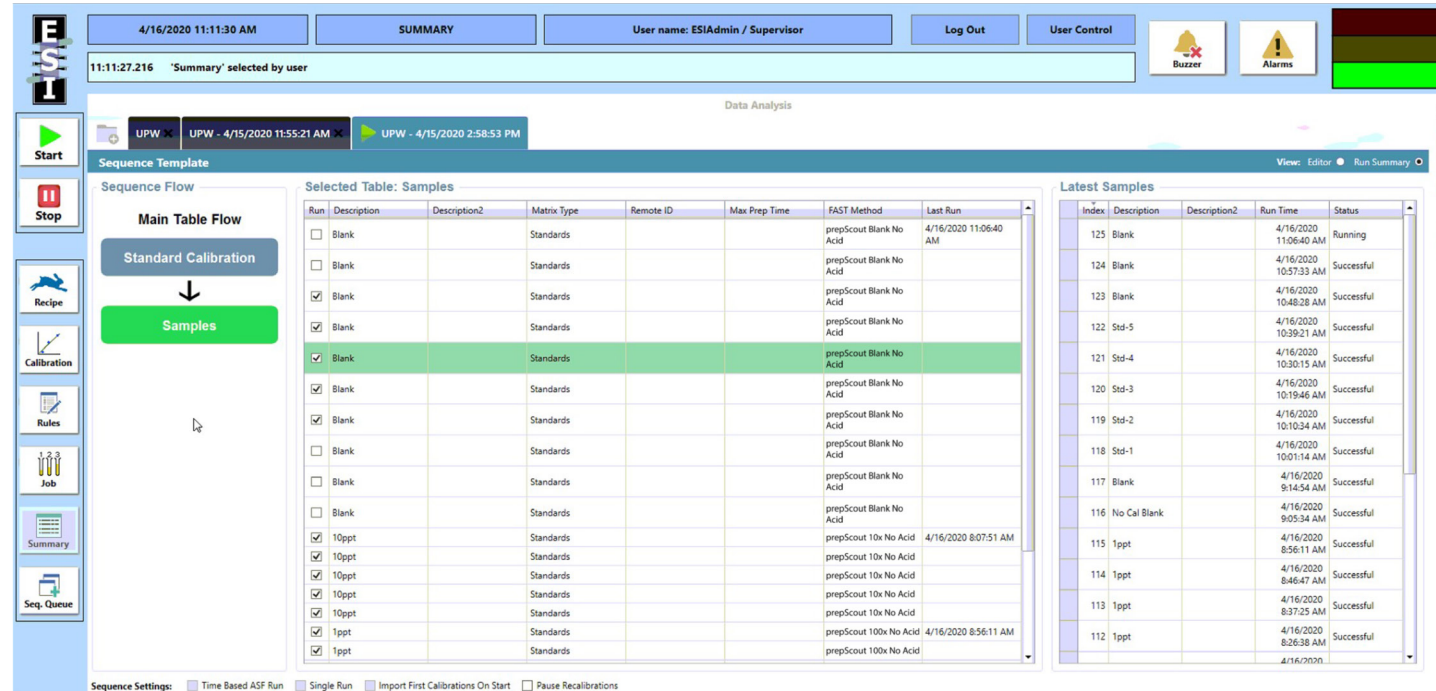


prepScout Central Station

Control Software

prepScout Control Software

- Autocalibrates the ICPMS (External/MSA)
- Autodilutes samples
- Generates the analytical sequence and initiates the ICPMS read
- Automatically imports and processes the analytical data
- Reports the data and creates trend charts
- Sends alerts (SMS, email, facility communication, etc.)



prepScout user interface and analytical sequence.

prepScout Creates the Analytical Sequence

- Schedules online samples
- Inserts laboratory samples
- Inserts on-demand remote samples (ODSI)
- Inserts and performs QC

Benefits of Real-time Monitoring

The prepScout improves productivity through the use of real-time data to improve processes and process control.

- Automates chemical certification at lower concentrations
- Immediate detection and notification of metal contamination
 - Allows investigation and elimination of contamination sources
 - Minimizes product loss due to contamination
- Reduces human contact with hazardous chemical samples to improve safety
- Flexible, user-defined charting and reporting for accurate contamination monitoring at every sampling station



prepScout
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