Sample preparation

Thermo Scientific Dionex ASE 350 Accelerated Solvent Extractor



The Thermo Scientific™ Dionex™ ASE™ 350 Accelerated Solvent Extractor with pH-hardened pathways featuring Thermo Scientific™ Dionium™ components performs extractions using less solvent and less time than traditional techniques. The integrated solvent controller is an easy-to-use module that allows automated delivery of up to three solvents.

Accelerated solvent extraction

Accelerated solvent extraction is a technique for extracting organic compounds from solid and semisolid samples with liquid solvents. Dionex ASE systems use organic and aqueous liquid solvents at elevated temperatures and pressure to increase the efficiency of the extraction process. Increased temperature accelerates the extraction kinetics, and elevated pressure keeps the solvent liquid above its boiling point, ensuring safe, rapid extractions. Additionally, the pH-hardened pathway allows the extraction of matrices that are pretreated with acids or bases.

Dionex ASE 350 instruments meet the requirements for extraction under US EPA SW-846 Method 3545A for Pressurized Fluid Extraction of base/neutrals and acids (BNA), organophosphorous pesticides (OPP), chlorinated pesticides and herbicides, polychlorinated biphenyls (PCB), polychlorinated dibenzo-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF), and diesel range organics (DRO). Accelerated solvent extraction technique replaces Soxhlet, sonication, wrist shaking, and other extraction techniques, and uses less solvent and less time.

Dionex ASE 350 system

Product highlights

- Reduces extraction time and solvent consumption using elevated temperature and pressure during extraction.
- pH-hardened flowpath.
- Requires less than 50 mL solvent for a 20 g sample.
- Extracts are automatically filtered and ready for direct injection or final cleanup.
- 24 position sample carousel allows unattended operation.
- Easy-to-fill sample cells (1, 5, 10, 22, 34, 66, and 100 mL), stainless steel cells, and 66 and 100 mL Dionium cells with finger-tight fittings.
- Easy-to-use collection bottles or vials.
- Convenient front panel operation runs methods automatically on up to 24 samples.
- The method and sequence editor screens lets the operator schedule the extraction conditions and allows the re-extraction of the same cell into separate vials.
- Thermo Scientific™ SmartRun™ System protects against cell and collection vessel mismatch and optimizes oven heat-up program to match cell size and type.
- Sensors for temperature, pressure, and solvent and liquid leaks alert the operator if there is a problem, sound an audible alarm, and shut down the system if necessary.
- Optional Thermo Scientific™ Chromeleon™ Chromatography Data System (CDS) for integration in GC, GC/MS, LC, and LC/MS workflows.

Dionex ASE 350 system installation

Prior to scheduling your Dionex ASE 350 system installation, the following items must be available on site:

1. Nitrogen tank, 99.99% standard grade (or house nitrogen with minimum of 150 psi)
2. Nitrogen regulator, capable of 200 psi minimum delivery output
3. Optional: Air tank, 99.99% standard grade (or house air with minimum of 100 psi)
4. Optonial: Air regulator, capable of 200 psi (pressure fitting included in the ship kit)
5. 500 mL HPLC grade acetone (Fisher Scientific catalog number A949SK-1)
6. 3 Kg Ottawa Sand Standard (Fisher Scientific catalog number S23-3)
7. Lab bench capable of supporting the Dionex ASE 350 system (see height and weight dimensions)
   Caution: Lift the module only from the bottom or side surfaces. Lifting from the panel door will damage the door hinges.
8. Electrical: 90 to 260 V AC, 50/60 Hz: Less than 5 amps at 120 V AC

At the time of your installation, the Field Service Representative will:

1. Make all hardware connections between the Dionex ASE 350 instrument and gas cylinders.
2. Test cell tray and autoseal alignment.
3. Test the Dionex ASE 350 instrument for proper operation and solvent recovery.
4. Provide training for up to two end users on routine operations of the Dionex ASE 350 instrument. Your warranty period will begin upon completion of the installation or the 61st day after the system shipment.

The Dionex ASE 350 system provides sequential extraction of up to 24 samples in one batch. Each system includes one solvent bottle, snap-ring pliers, filter insertion tool, o-ring insertion tool, diatomaceous earth, power cords, and gas line fittings. The Dionex ASE 350 system is bundled to include a starter kit and 12 stainless steel extraction cells. The starter kit contains the collection vials/bottles, extraction cell filters, and extraction cell seals and o-rings. These bundles are available with or without Chromeleon CDS.

Ordering information

To order in the US, call 1-800-346-6390, or contact the Thermo Fisher Scientific office nearest you. Outside the US, order through your local Thermo Fisher Scientific office or distributor. Refer to the following part numbers.

Description	Part no.	
	120 V system	240 V system
Dionex ASE 350 System	B51004319	B51004325
Dionex ASE 350 Bundle with 10 mL Cells	B51004320	B51004326
Dionex ASE 350 Bundle with 22 mL Cells	B51004321	B51004327
Dionex ASE 350 Bundle with 34 mL Cells	B51004322	B51004328
Dionex ASE 350 Bundle with 66 mL Cells	B51004323	B51004329
Dionex ASE 350 Bundle with 100 mL Cells	B51004324	B51004330

Specifications	
Dionex ASE 350 system	
Oven:	Accepts sample cell sizes of 1, 5, 10, 22, 34, 66, and 100 mL
	Auto-seal actuator places cell into oven and returns cell to tray after extraction
	Temperature control: up to 200°C
	Vertical cell orientation with flow from top to bottom
Pump:	Fluid delivery pressure: 10 MPa (1500 psi)
	Pump flow: 70 mL per minute
	Automatic pressure sensor and pressure relief during heat-up
Fluid sensors:	IR sensors detect fluid level during extract collection
Display and keyboard:	Menu operated LCD, 8 x 45 character display method and schedule editor and storage
Extraction cells:	Seven capacities: 1, 5, 10, 22, 34, 66, and 100 mL cells
	Finger-tight cell caps feature compression seal for high-pressure closure
Extraction cell tray:	24 cell positions
	Two rinse positions
	Automatic home position sensing
	Can perform multiple extractions per cell
Software:	Optional Chromeleon CDS version 7.2 available
Collection vials:	60 mL or 250 mL; vial lids have solvent-resistant septa (TFE-coated on solvent side)
Collection vial tray:	26-position tray insert for 60 mL vials and 19-position tray for 250 mL bottles
Extraction fluids:	Compatible with a wide range of organic and aqueous solvents
Dimensions (h × w x d):	69.3 × 67.3 × 61.7 cm
Weight:	65 kg. (140 lb)
Power requirements:	Consumption: 500 VA max.
Pneumatic requirements:	Air at 400–827 kPa (60–200 psi)

Learn more at **thermofisher.com/ase**

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