

LpDNPH High Capacity Air Monitoring Cartridges

LpDNPH H10, pk. of 10

LpDNPH H10, pk. of 50

LpDNPH H30, pk. of 10

LpDNPH H300, pk. of 10

Cat. No. 505315

Cat. No. 505320-U

Cat. No. 505323

Cat. No. 505331

Introduction

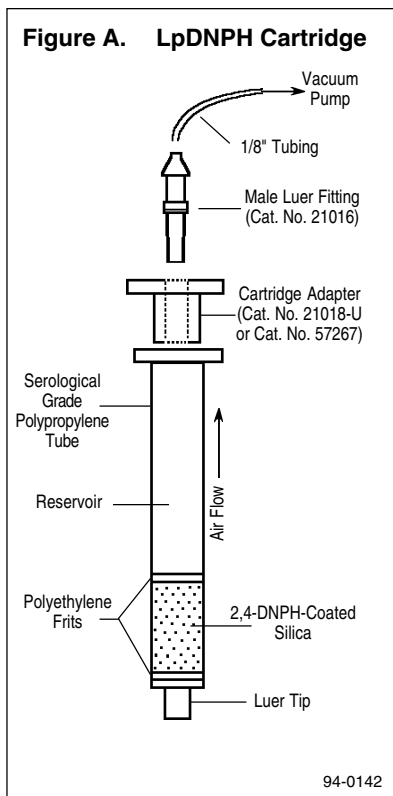
LpDNPH H10, H30, and H300 high capacity cartridges are air sampling devices designed for sampling carbonyls (e.g., formaldehyde) in ambient, indoor, workplace, and source atmospheres. Carbonyls are trapped on a high purity silica adsorbent coated with 2,4-dinitrophenylhydrazine (2,4-DNPH), where they are converted to the hydrazone derivatives. The derivatives are eluted from the cartridge in acetonitrile and analyzed by HPLC. The higher loading of DNPH on these cartridges, relative to our LpDNPH S10 cartridges, makes the H series cartridges suited for use in high concentration environments.

LpDNPH cartridges feature:

- high purity adsorbent, for better accuracy in trace analysis
- low pressure drop, to enable use at high sampling rates (1.5-2 L/min.), even with personal sampling pumps
- individual packaging, to maximize sample integrity
- bar code labels, for fast and accurate sample identification

The unique solid phase extraction configuration of an LpDNPH cartridge makes the cartridge easy to use in the field as well as in the laboratory. The built-in reservoir eliminates the need to attach a syringe to the cartridge for sample extraction/elution. Reusable adapters are available to connect the cartridge to the sampling pump. These must be ordered separately.

We recommend that the sampling flow be in the direction opposite of the elution flow.



General Specifications

Adsorbent:	chromatographic grade silica coated with 2,4-dinitrophenylhydrazine
Particle Size:	150-250 μm (60/100 mesh)
DNPH Loading:	0.9%
Pressure Drop:	<7kPa at 1.5 L/min. (<28 inches water/ <2.1 inches mercury)
Storage:	refrigerate (4 $^{\circ}\text{C}$); protect from light
Shelf Life:	12 months

Individual Specifications

Parameter	LpDNPH Cartridge		
	H10	H30	H300
Bed Weight:	350 mg	1 g	10 g
mg DNPH/cartridge:	3	8.6	86
Cartridge Volume (mL):	3	6	20
Cartridge Length (cm):	7.5	7.7	9.8
Elution Volume (mL):	5	10	100
Theoretical Capacity (total carbonyls, μg /cartridge):	225	643	6400
Background (μg /cartridge)			
Formaldehyde:	<0.3	<0.9	<8.6
Acetaldehyde:	<0.3	<0.9	<8.6
Acetone:	<1.5	<4.3	<43

Sample Collection

Exercise care in handling LpDNPH cartridges, as you would with any high purity sampling device, to minimize the possibility of unintentional exposure. Ozone is a known negative interference when sampling for carbonyls. If you suspect the presence of ozone, use an ozone denuder or scrubber.

1. Connect the cartridge to the sampling pump, using the appropriate adapters as shown in Figure A.
2. Collect the air sample in the direction indicated by the arrow on the cartridge, at a flow rate up to 2L/min. To avoid sample breakthrough, total carbonyls collected should not exceed the theoretical capacity listed in **Individual Specifications**.
3. After sampling, cap both ends immediately and place cartridges individually in the white foil bags provided (H10 and H30 cartridges only). Use the bar code labels to track each sample by placing one label on the bag and its duplicate in a sample log, with sample identification recorded. Include a field blank and a lab blank from the same lot with each batch of samples.
4. Store exposed cartridges at 4°C and protect from light. Analyze stored samples within 30 days of sampling.

Figure B. Eluting Samples from LpDNPH Cartridges



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Sample Desorption

Using an elution rack (Figure B) or vacuum manifold, and gravity feed, elute the cartridge with the appropriate volume of acetonitrile for the size of the cartridge (see **Individual Specifications**). Unless your sampling procedure requires otherwise, we suggest that desorption be in the direction opposite the air flow during sample collection. Use only high purity acetonitrile that has been tested for carbonyl contaminants. Store the extract at 4°C until analysis.

HPLC Analysis

Analyze the extract by reversed phase HPLC, using a C18 column and UV detection.

Accessories for Use with LpDNPH Cartridges

Description	Quantity	Cat. No.
Connectors		
Cartridge adapters for H10, H30	10	21018-U
Cartridge adapters for H300	6	57267
Male luer fittings	20	21016
Female luer fittings	20	21017
Female luer couplers	20	21015
Elution Rack	1	21043-U
Ozone Scrubber Cartridges	10	505285
Bar Code Labels	100 numbers	21012