Semi Solid Applications

Semi-Solid Workstation

Application Type

SPECIAL

Application ID

Semi-Solid Workstation PAL

Description

Semi-Solid Workstation Sample Preparation

Contents [hide]

LEAP TECHNOLOGIES

leaptec.com
leapwiki.com

General Description [edit]

The **Semi-Solid Workstation** is designed to automate the weighing of semi-solid samples in 20ml or 10ml uncapped vials. Semi-solid samples can be a cream consistency and may represent toothpaste, lotion, ointment, oil, essence, cosmetic, paste, emulsion, salve, liniment, unguent, lubricant and salve.

Significant Markets [edit]

- Pharmaceutical - QA QC

What is an Semi-Solid experiment ? [edit]

Performing dispensing of semi-solid liquids **manually** involves the tedious task of pipetting a cream or similar viscous material into tared vials and then reweighing them to determine the exact weight afterward. From this step the process can do various sample prep steps including dilutions [1] and filtration [2] either online or on a separate workstation.

Overview of Semi-Solid PAL System [edit]

Semi-Solid Workstation is an easy-to-use, system that provides an automated process for the scheduling and repetitive execution of weighing and dispensing workflow. By use of the advanced LEAP Shell scheduling software experimental design is simplified and reliable.
The application will tare vials, then the system will add a semi solid 'cream' to each vial with individual disposable tips. Once the samples in the sample list are dispensed each vial is re-weighed and calculation and report of the net sample weight. A barcode scanner is included in the setup, and scanning is an option in the method. Values for sample ID, barcode, tare weight and sample weight are recorded in a text file. Barcode validation is optional if the codes do not match from the tare step to the weigh step, the sample is flagged in the output file. It is designed so that the output file can be imported into the sample list of another PAL workstation which will use the sample ID and weight information to do an automatic proportional dilution and filtration step.

What does the Semi-Solid PAL do? [edit]

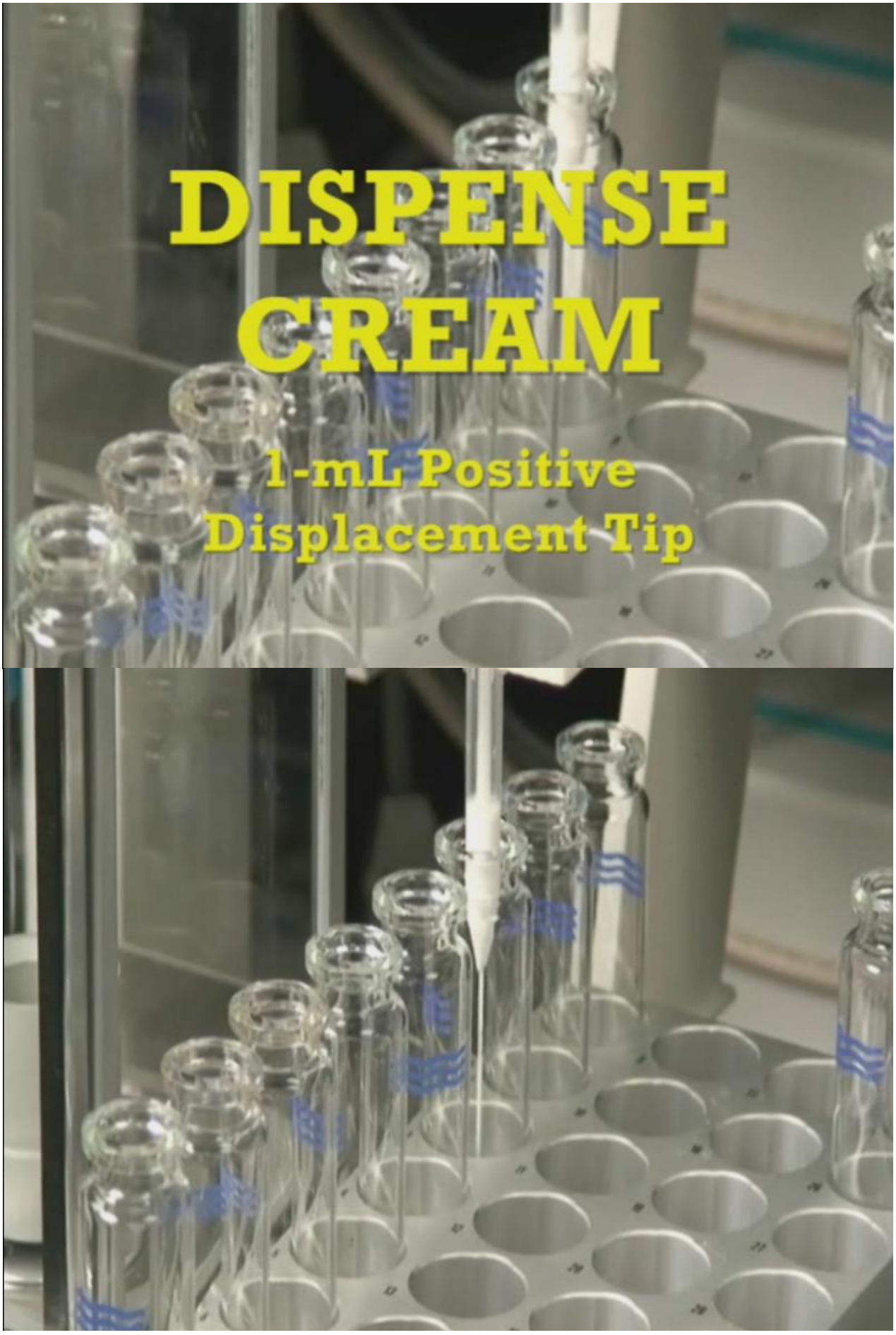
The vial is transported using a **mechanical gripper** which will accommodate 10 or 20 mL vials which are uncapped, screw-capped or crimp-capped
Positive displacement **disposable dips** are used to dispense the semi-solid liquid (cream)into uncapped vials
A **barcode scanner**[3] is included in the setup, and scanning is an option in the method
The **balance** PAL [4] provides the integration of a robotic accessible balance with the x,y,z, robot platform

Sample Process of the Semi-Solid PAL

- Tare empty vials
- Dispense semi-solid 'cream' to each vial with individual disposable tips
- Each vial is re-weighed and calculation and report of the net sample weight is created
- Values for sample ID, barcode, tare weight and sample weight are recorded in a text file
- Barcode[5] validation is optional if the codes do not match from the tare step to the weigh step, the sample is flagged in the output file
- Output file can be imported into the sample list of another PAL workstation which will use the sample ID and weight information to do an automatic proportional dilution and filtration step


TARE


ASPIRATE
CREAM
1-mL Positive
Displacement Tip


DISPENSE
CREAM
1-mL Positive
Displacement Tip

Software Control [edit]

LEAP has developed a scheduling application using their proprietary software **"LEAP Shell"** which will automate the above steps.

Save | Save as... | Add samples... | Fill Columns... | Select vial... | Submit

	SampleID	Shell Method	SampleLocation	TareStatus	BarCode
1	LSSample001	Weigh 5 places	Tray1TF:1	Tared	BC Not Read
2	LSSample002	Weigh 5 places	Tray1TF:2	Tared	BC Not Read
3	LSSample003	Weigh 5 places	Tray1TF:3	Tared	BC Not Read
4	LSSample004	Weigh 5 places	Tray1TF:4	Tared	BC Not Read
5	LSSample005	Weigh 5 places	Tray1TF:5	Tared	BC Not Read
6	LSSample002	Weigh 5 places	Tray1TF:2	Tared	BC Not Read
7	LSSample003	Weigh 5 places	Tray1TF:3	Tared	BC Not Read
8	LSSample004	Weigh 5 places	Tray1TF:4	Tared	BC Not Read
9	LSSample005	Weigh 5 places	Tray1TF:5	Tared	BC Not Read

LEAP Shell Screen Shot 2: LEAP Shell Sample List display:

Tare and Weigh | Weigh 1 | Weigh 1_1

	Time Stamp	Status	SampleID	Shell Method	SampleLocation	TareStatus	BarCode	TareWeight	Weight
1	5:18:14 PM	Waiting	LSSample001	Weigh 5 places	Tray1TF:1	Tared	BC Not Read	15.05933	
2	5:18:14 PM	Waiting	LSSample002	Weigh 5 places	Tray1TF:2	Tared	BC Not Read	15.03670	
3	5:18:14 PM	Waiting	LSSample003	Weigh 5 places	Tray1TF:3	Tared	BC Not Read	15.03670	
4	5:18:14 PM	Waiting	LSSample004	Weigh 5 places	Tray1TF:4	Tared	BC Not Read	15.03670	
5	5:18:14 PM	Waiting	LSSample005	Weigh 5 places	Tray1TF:5	Tared	BC Not Read	15.03670	
6	5:18:14 PM	Waiting	LSSample002	Weigh 5 places	Tray1TF:2	Tared	BC Not Read	17.4352	
7	5:18:14 PM	Waiting	LSSample003	Weigh 5 places	Tray1TF:3	Tared	BC Not Read	17.4254	
8	5:18:14 PM	Waiting	LSSample004	Weigh 5 places	Tray1TF:4	Tared	BC Not Read	17.3928	
9	5:18:14 PM	Waiting	LSSample005	Weigh 5 places	Tray1TF:5	Tared	BC Not Read	17.4014	

LEAP Shell Screen Shot 3: LEAP Shell Sample Batch display:

Videos of the PAL [edit]

Semi Solid Weighing station in action on YouTube *Hit back button when done to return*

Various PAL's in action on YouTube

Download [edit]

PDF of this page formatted for printing

Accessories for the PAL [edit]

Other Accessories for PAL Robots

Bar Code Reading

Balance PAL

LEAP provides automated workstation instrumentation solutions based on the LEAP CTC PAL X, Y, Z syringe only autosampler robot from LEAP Technologies. This extremely flexible, precise, and adaptable liquid handling robotic platform is available in a variety of lengths and options depending on the requirements of your sample preparation and injections for your UHPLC, LC or GC chromatography.LEAP offers full support and service for the PAL platform in addition to being able to write custom macros, cycles, and scheduling to your applications. Please contact LEAP Technologies on how we can help you get maximized throughput with flexible pipetting automation solutions.

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leaptec.com

leapwiki.com

Contact LEAP [edit]

Contact LEAP

For additional information about LEAP and the PAL Platform, please contact LEAP Technologies.

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