

Lachat MICRODIST can save your lab time and money

Time is money for labs. Reduced analysis time means quicker results and more productivity, which usually translates into savings in dollars. One Lachat customer has determined that USEPA-approved MICRODIST will save them almost \$4,600 per year over their old Midi Distillation method for cyanide sample preparation! See the details and imagine how much time and money MICRODIST could save your lab.

Cyanide Distillation: Midi CN distillation method vs. Lachat User-fill MICRODIST

Labor (in minutes)	MICRODIST (21 samples)	Midi distillation (10 samples)
Setup Time	15	80
Warm-up Time	15	30
Distillation Time	30	180
Cool-down Time	0	15
Clean-up and Tear-down Time	5	120
Total Time in Minutes per test	65	425

Labor Cost - Monthly	MICRODIST	Midi distillation
# Samples required per month	40	40
# Samples per Test	21	10
# Tests required per month	2	4
Time spent per month (hours)	2.2	28.3
Grade 12 salary (hourly)	\$24.90	\$24.90
Labor Cost per test	\$53.95	\$352.75
Total Labor Cost per month	\$108	\$1,411

Labor Cost - Yearly	MICRODIST	Midi distillation
# Tests required per year	24	48
Time spent per year (hours)	26	340
Grade 12 salary (hourly)	\$24.90	\$24.90
Labor Cost per test	\$26.98	\$176.38
Total Labor Cost per year	\$647	\$8,466

Required Consumables' Costs per purchase	MICRODIST	Midi distillation
User-Fill MICRODIST tubes (100 pk)	\$700 per pk, 5 needed per year	NA
Sample tubes (50 pk)	NA	\$105 per pk, 10 needed per year
Cold Finger Condensers (50 pk)	NA	\$50 each, 10 needed per year
Dispersion Tubes (50 pk)	NA	\$76 each, 10 needed per year
Purge Tube	NA	\$46 each, 4 needed per year
Tubing and Connectors	NA	\$10 per set, 4 needed per year

Total Consumables' Costs per year	MICRODIST	Midi distillation
Tubes	\$3,500	\$1,050
Cold Finger Condenser	\$0	\$500
Dispersion Tube	\$0	\$760
Purge Tube	\$0	\$184
Tubing and Connectors	\$0	\$40
TOTAL	\$3,500	\$2,534

Required Reagents' Costs per purchase	MICRODIST	Midi distillation
Sulfuric Acid	NOTE: MICRODIST uses approx. 1/10 the amount of reagents as the Midi.	\$100 for 4 liters
Sulfamic Acid		\$58 for 100g, 4 needed per year
Magnesium Chloride		\$93 for 500g, 4 needed per year
NaOH		\$358.00
Reagent Labor		52 hours @ \$24.9 per hour

Total Reagents' Costs per year ++	MICRODIST	Midi distillation
Sulfuric Acid	\$10.00	\$100.00
Sulfamic Acid	\$23.20	\$232.00
Magnesium Chloride	\$37.20	\$372.00
NaOH	\$35.80	\$358.00
Reagent Labor	\$129.48	\$1,294.80
TOTAL	\$235.68	\$2,356.80

Other Considerations	MICRODIST	Midi distillation
Bench area needed (sq. inches)	24	120
Breakable glassware?	None	Yes
Sample volume required (mL)	6	50
Sample waste volume after test (mL)	4	48
Possible places to lose CN during test?	None	Several - glass connections, faulty vacuum
Fume Hood required	No	Yes
Purge gas/ Vacuum required	No	Yes
Cooling water unit required	No	Yes

Annual Analysis Cost	MICRODIST	Midi distillation
Labor	\$647.40	\$8,466.00
Consumables	\$3,500.00	\$2,534.00
Reagents	\$235.68	\$2,356.80
TOTAL	\$4,383.08	\$13,356.80

INITIAL EQUIPMENT COST	MICRODIST	Midi distillation
Initial cost of MICRODIST unit	\$4,000.00	NA
Initial cost of Midi unit	NA	\$7,378.50
Initial cost of Midi heating unit	NA	\$5,261.53
TOTAL	\$4,000.00	\$12,640.03

Time (months) for MICRODIST to pay for initial cost through yearly savings in this lab.	5.3
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