Hints and Tips

Successful Performance with the MININEPH™ and MININEPH™ Electronic Pipette

Problem	Possible cause of problem	Action Required	Advised Frequency	Comments
Early blanking of instrument	Electronic pipette speed set too high	Make sure dispense speed of electronic pipette is set to 3.	Periodic	Instructions for setting the pipette speed are given in the MININEPH Operating manual, Appendix I.
	Sample dispensing	Pipette the sample into the bottom of the cuvette.	Every sample	If the sample is pipetted onto the side of the cuvette the instrument will automatically think the MININEPH reagents have been added.
	Direct bright light	Relocate the MININEPH to a more shaded position.	Every sample	This only applies if bright light is directly shining into the cuvette chamber from above.
Poor reproducibility of sample results	"Forward" pipetting with manual pipettes	Use the "reverse" pipetting method (a selected volume plus an excess is aspirated into the tip and the excess volume remains in the tip). This is the most accurate method for pipetting small volumes.	Every time a manual pipette is used	This is not applicable when using the electronic pipette supplied with MININEPH instruments.
	Cuvette handling	Avoid handling the cuvette by either of the two outer surfaces through which the laser beam passes. Fingerprints and smudges can affect the amount of light scatter detected and give inaccurate results.	Every sample	Cuvettes are not re-useable and should be discarded after assay.
	Reagents not adequately mixed	Gently mix the contents of the reagent vials by inversion. Special care should be taken with lyophilised reagents and controls.	Before first use of reagent and if vial is left standing for a long period of time	Care must be taken not to introduce air bubbles into the reagents. If this occurs allow the reagents to settle and the air bubbles to disperse. Vortex mixers are not suitable for mixing of reagents.
	Air bubbles in samples or reagents	Reverse pipetting can reduce the occurrence of air bubbles in a sample – see above.	Every sample	Air bubbles can interfere with nephelometric measurements and can cause inaccurate results.

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Problem	Possible cause of problem	Action Required	Advised Frequency	Comments
Controls outside acceptable range	"Forward" pipetting with manual pipettes	Use the "reverse" pipetting method – see section on poor reproducibility of sample results.	Every sample	See section on poor reproducibility of sample results.
	Contamination of buffer	Place the tip of the pipette just underneath the surface of the first fluid used. This prevents the outside of the tip from becoming excessively coated and causing the contamination of subsequent fluids.	Every sample	This is particularly important for kits containing more viscous buffers (IgM, Caeruloplasmin, Prealbumin and ASO).
	Cuvette handling	Take care when handling the cuvette - see section on poor reproducibility of sample results.	Every sample	See section on poor reproducibility of sample results.
	Reagents not adequately mixed	Gently mix the contents of the reagent vials by inversion - see section on poor reproducibility of sample results.	Before first use of reagent and if vial is left standing for a long period of time	See section on poor reproducibility of sample results.
	Air bubbles in samples or reagents	Reverse pipetting can reduce the occurrence of bubbles in a sample - see section on poor reproducibility of sample results.	Every sample	See section on poor reproducibility of sample results.
Low results (samples and /or controls)	Buffer temperature	If the buffer is being stored at 2-8° allow it to warm up to room temperature for 1-2 hours prior to use and store at this temperature.	Every kit	Buffer can be stored at room temperature until expiry.

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Leakage or pipetted volume too small	Non-uniform wetting of the plastic	Attach new tip	Every sample	Ensure clean disposable tips are used for every sample.
	Tip incorrectly attached	Attach tip firmly	Every sample	Never strike the tip cone against the tip tray when mounting tips. This can result in damage to internal components.
	Foreign particles between tip and cone	Clean the tip cone and attach new tip	As required	Refer to Section 9.1 of the the Pipette Instruction Manual – 'Cleaning the tip cone'.
	Pipette contaminated	Clean and grease piston and tip cone	As required	The pipette should be kept in an upright position. Resting the pipette on its side should be avoided as this can cause liquid from the tip to seep back into the mechanism resulting in contamination of the tip cone. Refer to Section 9.1 of the the Pipette Instruction Manual – 'Cleaning the tip cone'.
	Insufficent amount of grease on the piston or 'O' ring	Grease accordingly	As required	Refer to Section 9.1 of the the Pipette Instruction Manual – 'Cleaning the tip cone'.
Pipette performing outside of specificiations	Pipette damaged	Return for repair	Infrequent	Please refer to your local supplier for details.
Pipette blocked	Liquid has penetrated the cone and dried	Clean and grease piston and tip cone	As required	The pipette should be kept in an upright position. Resting the pipette on its side should be avoided as this can cause liquid from the tip to seep back into the mechanism resulting in contamination of the tip cone. Refer to Section 9.1 of the the Pipette Instruction Manual – 'Cleaning the tip cone'.

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Tip ejector jammed or moves eratically	Tip cone contaminated	Remove ejector collar and clean with 75% ethanol	As required	Refer to Section 9.1 of the the Pipette Instruction Manual – 'Cleaning the tip cone'.
Occasional error message (Er1)	Battery Expired	Replace battery	As required	Refer to Section 9.2 of the Pipette Instruction Manual – 'Battery Replacement'.
	Electrical outlets have been switched off during charging	Reset the pipette and continue to charge with the electrical outlet switched 'ON'	Every day	To reset the pipette; 1. Remove the pipette tip. 2. Place the pipette in the charging stand for 15 minutes. 3. Clear the error message from the display by pressing 'E'. 4. Press the 'START' button which will set the pipette to its home position.
	Pipette has been in the 'OFF' position during charging	Reset the pipette and continue to charge with the pipette switched 'ON'	Every day	
Continuous or repeated error message	Instrument damaged	Return for repair	Infrequent	Please refer to your local supplier for details.
Pipette battery is discharging quicker than expected	Continual charging	The pipette should be kept on charge during the day while it is in use. When the pipette and charging stand are not being used e.g. overnight or for long periods, they should both be switched off.	Every day	If the pipette is new or the battery is low keep the pipette in the stand for 12 hours to fully charge it before use. Re-chargeable batteries do not retain sufficient charge whilst not in use and will therefore need to be fully charged prior to first use. Keeping a pipette on permanent charge shortens the lifespan of the battery. A replacement battery can be ordered using product code AD205.1.
Loss of air gap	High viscosity buffers	The accuracy of the assay should not be affected as long as the contents of the pipette are dispensed as soon as the reagents have been aspirated.	When using high viscosity buffers	Buffers from certain kits (e.g. IgM, Prealbumin, Caeruloplasmin and ASO) are of a higher viscosity than others. When working with these buffers loss of the air gap is normal and to be expected.