IFU

Instructions for Use

IMMERSION OILS AND MICROSCOPE LENS CLEANER

Cat. no. Z95	Immersion Oil, Type A	20ml
Cat. no. Z85	Immersion Oil, Type A	125ml
Cat. no. Z96	Immersion Oil, Type B	20ml
Cat. no. Z86	Immersion Oil, Type B	125ml
Cat. no. Z97	Lens Cleaner	30ml

INTENDED USE

Hardy Diagnostics Immersion Oils are used to assist in microscopic examination at high power by increasing the resolving power. Type A is a low-viscosity Immersion Oil. Type B is a high-viscosity Immersion Oil.

Lens Cleaner is used to clean and maintain the optical glass in microscopes.

SUMMARY

Resolution of fine specimen details requires the minimum numerical aperture (NA) in the condenser-specimen-objective system be 1.00 or greater. This can be achieved by placing a liquid between the specimen coverglass and the objective. The theoretical upper limit of the numerical aperture for the immersion system is the refractive index of the liquid with which the objective is used. Water, glycerin, cedarwood oil or synthetic immersion oil and monobromonaphthalene have all been used in immersion systems with immersion oil being the most common. The recommended liquid for the immersion system will be indicated on the objective.

For normal light microscopy, Immersion Oil Types A and B, with viscosities 150 and 1250cSt, respectively are recommended. The greater the gap between the coverglass and the lens of the slide and the condenser, the more desirable high-viscosity becomes. High-viscosity oil is also recommended for inverted or slanted microscope stages. Low-viscosity oil is recommended for systems with a very short immersion system distance or in colder environments.

FORMULA

Immersion Oil Type A and B, are formulated from stable, chemically inert, non-drying, non-hardening, synthetic hydrocarbons and natural petroleum derivatives. The refractive indexes of these oils are 1.515 +/- 0.0002 at 23 degrees C. They are easily removable and may be mixed for intermediate viscosities.

Lens Cleaner contains ethylene glycol, ammonium hydroxide, isopropyl alcohol, and deionized water.

STORAGE AND SHELF LIFE

Storage: Upon receipt store 15-30ºC. Products should not be used if there are any signs of contamination or deterioration.

The expiration date on the product label applies to the product in its intact packaging when stored as directed. The product may be used and tested up to the expiration date on the product label and incubated for the recommended incubation times as stated below.

Refer to the document "Storage" for more information.

PRECAUTIONS

This product may contain components of animal origin. Certified knowledge of the origin and/or sanitary state of the animals does not guarantee the absence of transmissible pathogenic agents. Therefore, it is recommended that these products be treated as potentially infectious, and handle observing the usual Universal Precautions for blood. Do not ingest, inhale, or allow to come into contact with skin.

This product is for *in vitro* diagnostic use only. It is to be used only by adequately trained and qualified laboratory personnel. Observe approved biohazard precautions and aseptic techniques. All laboratory specimens should be considered infectious and handled according to "standard precautions." Refer to the document "Guidelines for Isolation Precautions" from the Centers for Disease Control and Prevention.

For additional information regarding specific precautions for the prevention of the transmission of all infectious agents from laboratory instruments and materials, and for recommendations for the management of exposure to infectious disease, refer to CLSI document M29: *Protection of Laboratory Workers from Occupationally Acquired Infections.*

Sterilize all biohazard waste before disposal.

Refer to the document "Precautions When Using Media" for more information.

PROCEDURE

Find a suitable field on the slide with a low-power, dry objective. Focus the substage condenser. Switch to the high-dry objective. Move the immersion lens into position. Place a small drop of oil on the front of the objective and another small drop on the area of interest. This technique will prevent the formation of air bubbles. Bring the objective lens and specimen slowly together until the lens contacts the oil on the slide. Always observe oil contact on the stage level. Use fine focus for the final focus of the specimen.

Use lens paper and lens cleaner to remove immersion oil when microscopic observation is finished. Do not allow immersion oil to accumulate on objectives.

LIMITATIONS

Never shake a bottle of immersion oil. Air bubbles lower contrast and affect image quality.

Never leave immersion oil exposed to air. Dust and other debris in the oil will impair image quality.

Always use high quality lens paper when cleaning optical glass. Other papers or tissues may scratch the glass.

Use a small amount of lens cleaner to clean the objectives. Soaking the objectives may loosen the glues holding them in place.

MATERIALS REQUIRED BUT NOT PROVIDED

Standard microbiological supplies and equipment such as slides, coverglass, stains, lens tissues, and microscopes, etc., are not provided.

QUALITY CONTROL

The grade of Immersion Oil used in this product is such that it is free of any impurities that could interfere with test

results.

USER QUALITY CONTROL

Check for signs of contamination, deterioration, or debris in the oil.

PHYSICAL APPEARANCE

Immersion Oils and Lens Cleaner should appear clear and colorless.

Immersion Oil, Type A (Cat. no. Z85).

Lens Cleaner (Cat. no. Z97).

REFERENCES

1. Jorgensen., et al. *Manual of Clinical Microbiology,* American Society for Microbiology, Washington, D.C.

2. Koneman, E.W., et al. *Color Atlas and Textbook of Diagnostic Microbiology,* J.B. Lippincott Company, Philadelphia, PA.

3. *Photography Through the Microscope*, 9th ed. 1988. Eastman Kodak Company, Rochester, N.Y.

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The Hardy Diagnostics manufacturing facility and quality management system is certified to ISO 13485.