

## Product Information

### OxyFluor™

Catalog Number **SAE0059**  
Storage Temperature  $-20\text{ }^{\circ}\text{C}$

#### Product Description

The OxyFluor™ (OF) enzyme formulation, based on the Oxyrase® Enzyme System, is designed for use in fluorescence microscopy, to prevent photobleaching and photodamage that can result from the presence of oxygen. The Oxyrase Enzyme System removes dissolved oxygen from aqueous and semi-solid environments by reducing oxygen to water.

OF requires a substrate (e.g., DL-lactate or DL-succinate) for activity. 10–20 mM of DL-lactate and/or DL-succinate is routinely added to the microscopy medium containing OF. Several parameters factor into the exact volume of OxyFluor and substrates needed to reduce oxygen in a given system. These variables include pH, temperature, the kinds and amounts of substrates, the surface-to-depth ratio of the container, and the head-space volume. Some empirical investigation may be necessary to determine the appropriate parameters. One initial suggestion is a 1:100 dilution of OF plus 10 mM substrate (e.g., DL-Lactate).

Oxygen may not affect some fluorescent dyes. OF would thus not be expected to protect those dyes.

**Unit definition:** One unit of OxyFluor activity will reduce dissolved oxygen, in 1 mL of air-saturated 40 mM phosphate buffer, pH 8.4, at 37 °C, at the rate of 1% per second.

The rate of oxygen removal increases with temperature. However, OF is rapidly inactivated above 55 °C. OF is active over the pH range of 6.8–8.4. Under pH and temperature conditions different from generally suggested conditions, additional OF and/or substrates, as well as more time, may be required.

OxyFluor is non-sterile, but has a bioburden of less than 103 cfu per mL.

#### Preparation Instructions

OF may be thawed in a refrigerator overnight. If necessary, the product can be thawed by warming, but at no higher than 37 °C. Thawing at slightly elevated temperatures is recommended while ice is still present inside the container. When completely thawed, keep OF chilled on ice until ready for use.

To ensure uniform activity within a thawed sample, gently swirl the OF before use or distribution. Do not agitate vigorously, as this causes foaming and denatures protein in OF, which may result in loss of activity.

#### Storage/Stability

**Long Term Storage:** The recommended long-term storage temperature for the product is  $-20\text{ }^{\circ}\text{C}$  or colder to maintain full activity. OF can be thawed and re-frozen 5x without affecting its activity and performance.

**Short Term Storage:** Store the product at 2–8 °C for use within 30 days. A precipitant may form, which does not affect product performance.

#### Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

#### References

1. Watermann-Storer, C.M. *et al.*, *Cell Motil. Cytoskeleton*, **26(1)**, 19-39 (1993).
2. Mikhailov, A.V., and Gundersen, G.G., *Cell Motil. Cytoskeleton*, **32(3)**, 173-186 (1995).
3. Watermann-Storer, C.M. *et al.*, *J. Cell Biol.*, **150(2)**, 276-361 (2000).

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