



**Oxyrase, Inc.**  
3000 Park Ave. West  
Mansfield, OH 44906  
Ph.: 419-589-8800  
Fax: 419-589-9919  
**www.oxyrase.com**

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## OxyStasis™\* Product Insert

\*Patent Pending

The idea behind OxyStasis™ is to produce a condition where biological material can be preserved at a reduced temperature, in a stable environment, without ice formation and the resulting damage.

If ice formation can be prevented, damage to biological structures from ice crystal formation will not occur. With OxyStasis™ this is possible and the biological material may still be stored at temperatures below freezing, slowing down or preventing normal chemical reactions from occurring.

The resulting static condition, combined with the reduced environment created by the Oxyrase® Enzyme System, acts to protect cells and tissues from damage during long term storage.

A preservation cycle is not complete without the ability to recover the material. The liquid nature of OxyStasis™ also makes this phase of the preservation process much more simplified.

### Precautions:

A **Safety Data Sheet** is available on our website.

### Product Characteristics:

The preservation characteristics of OxyStasis™ have been achieved by using elevated concentrations of cryoprotectants to lower the freezing point of the mixture used to preserve cells.

Additionally, the presence of the Oxyrase® Enzyme System and substrates in OxyStasis™ provides a stable, reduced environment in which cells are protected from the deleterious effects of oxidation. The longer the cells are preserved, the more important protection from oxidation becomes.

We have stored a panel of microorganisms, preserved in OxyStasis™, for periods >15 months in a standard household freezer and recovered high numbers of viable cells. It is not surprising that since the medium does not freeze we achieved quantitative recovery of the microorganisms. In addition, the microbial cells were not adversely affected by the high concentrations cryoprotectants. Given this data, it may be possible for cells to be stored for extraordinarily long periods of time in OxyStasis™ with high rates of recovery.

An added benefit that is realized from the non-freezing nature of OxyStasis™ is that a wide range of freezer equipment can be used, including a standard household freezer, to accomplish long term preservation of biological material. Although a standard household freezer may have frequent self-defrost cycles where the temperatures can reach as high as -5°C for extended periods before returning to ≤-20°C, our studies have shown long term preservation can still be accomplished without cellular damage. This observation has significant financial implications for organizations otherwise faced with disproportionately high capital equipment costs related to traditional cryo-freezers and their associated supplies and equipment.

It also should not be overlooked that working with cells or biological material in a liquid suspension is often considerably faster, easier and less costly than working with frozen suspensions that need to be

thawed before the material can be recovered.

OxyStasis™ provides several important advantages to traditional preservation methods for biological materials.

For more information about OxyStasis™ and our other Preservation Products please visit [www.oxyrase.com](http://www.oxyrase.com).

### Limitations:

OxyStasis™ contains a penicillin binding protein that may interfere with penicillin and some related antibiotics.

OxyStasis™ contains a glycerol as a cryoprotectant.

### Handling and Storage Instructions:

OxyStasis™ will arrive thawed but cold. The product should be stored at a temperature below the freezing point of water prior to inoculation until the expiration date listed on the product label. NOTE: OxyStasis will not become a solid when stored at -20°C.

After inoculation or the addition of the material to be preserved, the product should be continuously stored frozen until recovery of the material is desired.

### Instructions for Use:

Remove the OxyStasis™ vial from storage and allow it to come to room temperature.

If you are starting with one of your own sterile storage vials, aseptically aliquot OxyStasis into your container and then aseptically transfer your biological material. Use enough OxyStasis to cover the specimen. If you are starting with your own storage vial which is already inoculated with biological material, aseptically aliquot OxyStasis into your container using enough OxyStasis to cover the specimen. Alternatively, you can aseptically transfer your biological material in the vial supplied. To disperse, mix by gentle inversion. Label the vial appropriately. \*\*Note: If preserving bacteria, we recommend making a heavy suspension of cells from a OxyPRAS Plus® Brucella plate or Schaedler OxyPlate™ from a confluent quadrant of a quadrant streaked plate.

Incubate the inoculated OxyStasis™ vial at 37°C for 30 minutes.

Place the inoculated OxyStasis™ vial in the freezer until you desire to recover the sample material.

To recover the preserved material, remove the OxyStasis™ vial from storage. Aseptically remove a sample of the inoculated liquid, or remove the immersed material and use as you normally would. For bacterial specimens, the inoculated mixture can be directly plated and incubated for growth.

### Quality Control:

Oxyrase, Inc. certifies that samples of each lot were quality control tested and performed acceptably according to our specifications.

### Guarantee:

OxyStasis™ has a shelf-life of at least 12 months under recommended storage and use conditions. If a longer shelf-life is needed, this should be arranged at the time your order is placed.

If OxyStasis™ does not perform as specified under recommended storage and use conditions, Oxyrase, Inc. will refund your purchase price. To receive a product refund, write or call Oxyrase Inc. with the product lot number which is located on the OxyStasis™ label. Oxyrase, Inc. is available to answer any questions about this product and its applications.