How to Use OxyPlates™

The OxyPlate™ uses a uniquely designed dish for isolating and growing anaerobes. When the OxyPlate™ is closed, a seal is formed between a ring inside the lid and the agar surface in the base. The base has a track on the outside of its rim that mates with a blade in the lid. That blade is located between the inside rim of the lid and the ring. When the lid is placed over the base, the blade rests on the track. When the lid is rotated, the blade moves along the track and the lid is raised or lowered relative to the base. This action raises or lowers the ring relative to the agar surface. When the ring comes to rest on the agar surface, an airtight seal is formed. The seal, between the ring and the agar surface, traps the space the between the inside, top of the lid and the agar surface.

Oxyrase® is an enzyme system which is added to the medium that makes up the agar. Oxyrase® can react specifically with oxygen and reduce it to water. Initially, the air trapped in the space between the lid and the base, is ladened with oxygen. But in a short time, Oxyrase® in the agar reacts with oxygen in that trapped space, reducing it to water, thereby removing it. The oxygen content in that trapped space is reduced to very low levels making anaerobe growth possible inside a sealed OxyPlate™.

When closing an OxyPlate™, one needs to be sure a seal is formed between the ring and the agar surface. This test is done by simply turning the OxyPlate™ over into its up-right position, while holding gently onto the upper outside of the lid. If a seal is formed, the base will stay attached to the lid. If the base separates from the lid, a proper seal was not formed. Simply close the dish again and repeat the test. A sealed OxyPlate™ will stay together, base to lid. Only a properly sealed OxyPlate™, when incubated, will grow anaerobes.

Tests have shown a sealed OxyPlate™ remains sealed for over 7 days of continuous incubation at 37° C. A plate can lose nearly 40% of its weight during this time, yet the seal remains intact. OxyPlates™ can be opened and closed 5 times and continue to reform an effective seal that supports anaerobe growth. If an OxyPlate™ separates after incubation, this indicates that the OxyPlate™ was not sealed on closing.

An OxyPad was provided with OxyPlate™ to aid in closing / sealing the OxyPlate™. When an un-sealed OxyPlate™ is placed up-right on the bench top, the rim of the lid rests on the bench top and the agar surface is separated from the ring. When an OxyPlate™ is placed on the OxyPad, the blade in the lid comes to rest on the track on the base. If the blade is at the top of the track, the OxyPlate™ is in the open position. When the lid is turned clockwise, the blade travels down the track, lowering the ring to the surface of the agar, and a seal is formed. To open a sealed OxyPlate™, place it on an OxyPad and turn the lid in a counterclockwise direction. The seal will break, and the lid will rise to lift the ring above the agar surface. The lid may be removed. In a closed, incubating OxyPlate™, the base nests inside the lid. This location protects the base from the weight of OxyPlates™ above it in a stack of OxyPlates™. Do not stack regular petri plates onto OxyPlates™.

Alternatively, to seal an OxyPlate™ without using an OxyPad, place the blade of the lid over the groove on the base at the lowest position on the track. Gently invert the OxyPlate™. The agar surface will contact the ring and form a seal. To open a sealed OxyPlate™, simply put it in the upright position and gently squeeze the lower part of the rim to break the seal.