



## O2k-Catalogue OROBOROS

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### O2k-Catalogue OROBOROS



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O2k-Catalogue OROBOROS - a guided tour to the O2k

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Product ID 1##### [Oxygraph-2k](#) - the modular system for high-resolution respirometry.

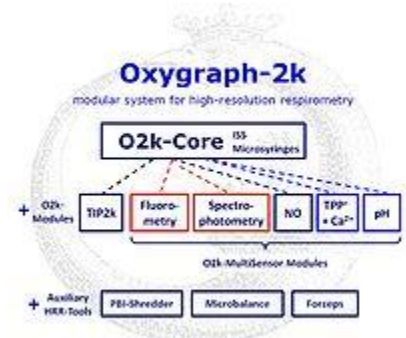
ID 2##### [O2k-Core](#) / [OroboPOS](#)

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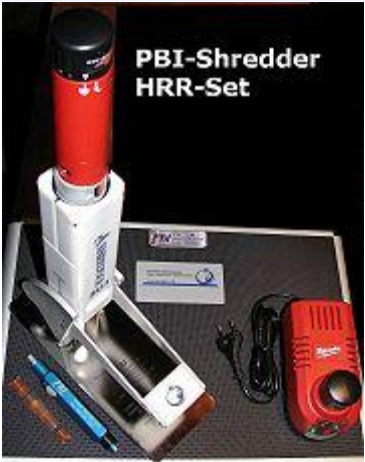

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### O2k-Catalogue OROBOROS - all products in current series

Title	Description	Product id	Product image
<a href="#">O2k-Catalogue: Contents and concept</a>	<b>O2k-Catalogue: Contents and concept</b>	#####-##	
<a href="#">O2k-Feedback</a>	<b>O2k-Feedback:</b> OROBOROS - Cooperation and Feedback in Science	***** ++	
<a href="#">Oxygraph-2k</a>	<b>OROBOROS Oxygraph-2k (O2k)</b> - modular system for <a href="#">high-resolution respirometry (HRR)</a> . The O2k is a <a href="#">2-chamber high-resolution respirometer</a> for monitoring oxygen consumption with small amounts of biological material. The modular concept of the O2k yields a high flexibility for HRR, with the <a href="#">O2k-Core</a> as the basis, and O2k-Modules supported by the O2k-Core. O2k-Modules are the Titration-Injection microPump ( <a href="#">TIP2k-Module</a> ) and <a href="#">O2k-MultiSensor Modules</a> (Fluorometry; Ion Selective Electrodes, ISE).	1#####	

<p><a href="#">O2k-Core</a></p>	<p>The <b>O2k-Core (OROBOROS Oxygraph-2k Core)</b> is the <a href="#">Oxygraph-2k</a> including <a href="#">Core-Accessories</a>, complete for basic <a href="#">high-resolution respirometry</a> (HRR). The O2k-Core includes the <a href="#">O2k-Main Unit</a> with stainless steel housing, <a href="#">O2k-Assembly Kit</a>, two <a href="#">OroboPOS</a> (polarographic oxygen sensors) and <a href="#">OroboPOS-Service Kit</a>, <a href="#">DatLab</a> software, the <a href="#">ISS-Integrated Suction System</a> and the <a href="#">Microsyringe-Core Set</a>. The O2k-Core supports all add-on O2k-Modules.</p>	<p>1000-01</p>	 <p><b>O2k-Core</b> OROBOROS Oxygraph-2k for basic HRR</p> <p>Core-Hardware: O2k Main Unit, O2k Assembly Kit, 2 OroboPOS, OroboPOS-Service Kit, DatLab Software</p> <p>Core-Accessories: ISS-Integrated Suction System, Microsyringe-Core Set</p> <p>Add-on: TIP2k, O2k-MultiSensorModules</p> <p>Auxiliary HRR Pools</p>
<p><a href="#">TIP2k-Module</a></p>	<p><b>TIP2k-Module</b>, Titration-Injection microPump (TIP2k) for two-channel operation with the <a href="#">O2k-Core</a> with automatic control by <a href="#">DatLab</a> of programmable titration regimes and feedback control (oxystat, pH-stat). The <b>TIP2k-Module</b> includes TIP2k-Accessories: 4 <a href="#">Microinjection syringes</a> and 1 Pkg. <a href="#">TIP2k-Needle Spacers</a> with mounting tool.</p>	<p>11100-01</p>	
<p><a href="#">O2k-Fluorescence LED2-Module</a></p>	<p>The <b>O2k-Fluorescence LED2-Module</b> is a modular extension of the <a href="#">O2k-Core</a>, adding a new dimension to <a href="#">HRR</a>. Optical probes are inserted through the front window of the O2k-glass chambers, for measurement of <b>hydrogen peroxide production (Amplex red)</b>, <b>ATP production (Mg green)</b>, <b>mt-membrane potential (Safranin)</b>, <b>Ca<sup>2+</sup> (Ca green)</b>, and numerous other applications open for O2k-user innovation. It is an amperometric add-on module to the O2k-Core.</p>	<p>12100-01</p>	
<p><a href="#">O2k-TPP+ and Ca2+ ISE-Module</a></p>	<p><b>O2k-TPP<sup>+</sup> and Ca<sup>2+</sup> ISE-Module</b>: 2 potentiometric ion-selective electrodes (ISE), ISE-Service Kit and 2 <a href="#">PVDF-Stoppers</a>, supported by the <a href="#">O2k-Core</a>.</p>	<p>12300-01</p>	
<p><a href="#">O2k-pH ISE-Module</a></p>	<p><b>O2k-pH ISE-Module</b>: two pH electrodes and reference</p>	<p>12400-01</p>	


	electrodes and accessories, two black PEEK stoppers, supported by the <a href="#">O2k-Core</a> .		
<a href="#">O2k-NO Amp-Module</a>	<b>O2k-NO Amp-Module:</b> 2 <a href="#">PVDF stoppers</a> for NO applications; 1 additional inlet (2.3 mm) for 2 mm shaft NO sensor; central titration port; conical bottom; with <a href="#">Volume-Calibration Rings</a> (A and B); with 8 spare O-rings ( <a href="#">O-ring\Viton\12x1 mm</a> ); two boxes). The NO sensor is not included.	12500-01	
<a href="#">PBI-Shredder HRR-Set</a>	<b>PBI-Shredder HRR-Set:</b> Auxiliary HRR-Tool for tissue homogenate preparation; the <a href="#">Shredder-Kit Box</a> contains the heavy duty high torque <a href="#">SG3 driver</a> with convertible handle, SG3 base with 3 position force setting lever (FSL), battery charger, two lithium ion batteries, <a href="#">Shredder-Tube Cap Tool</a> . The PBI-Shredder HRR-Set includes the Shredder-Kit Box with 100 <a href="#">Shredder-Tubes</a> , 100 <a href="#">Shredder-Tubes\Metal</a> , a pair of <a href="#">sharp forceps</a> for tissue dissection and a pair of scissors. OROBOROS INSTRUMENTS: world-wide distributor.	13200-02	 A photograph of the PBI-Shredder HRR-Set. It features a red and white motor unit with a black handle, a red battery pack, and a white base. The text 'PBI-Shredder HRR-Set' is overlaid on the image.
<a href="#">Microbalance-Set</a>	<b>Microbalance-Set:</b> <a href="#">Microbalance 120 g</a> (41 g to 120 g; 0.01 mg / 0.1 mg display) with <a href="#">Microbalance-Transport Case</a> ; particularly for wet weight determination of permeabilized fibres.	13300-01	
<a href="#">HRR-Dissection Set</a>	<b>HRR-Dissection Set:</b> for <a href="#">tissue preparation</a> , set of 4 pairs of stainless steel, antimagnetic forceps and a pair of scissors.	13400-01	 A photograph of the HRR-Dissection Set. It shows a clear plastic case containing several pairs of forceps and a pair of scissors, all resting on a dark, textured surface.
<a href="#">O2k-Catalogue: O2k-Core</a>	<b>2#### O2k-Catalogue: O2k-Core:</b> The <a href="#">O2k-Core</a> is the <a href="#">Oxygraph-2k</a> complete for basic <a href="#">high-resolution respirometry</a> - ready for application. It supports all optional add-on <b>O2k-Modules</b> ( <a href="#">TIP2k-Module</a> , <a href="#">O2k-MultiSensor Modules</a> ).	<b>2####</b>	<b>2####</b>

<p><a href="#">2 OroboPOS</a></p>	<p>The <b>2 OroboPOS</b> set (two polarographic oxygen sensors, POS) is included in the <a href="#">O2k-Core</a>, shipped with the O2k in the <a href="#">O2k-Service Box</a>. For details, see <a href="#">OroboPOS</a>.</p>	<p>20600</p>	
<p><a href="#">OroboPOS-Service Kit</a></p>	<p><b>OroboPOS-Service_Kit</b>, with <a href="#">O2k-Service Box</a> including all oxygen sensor service accessories for membrane mounting and service of the <a href="#">OroboPOS</a>.</p>	<p>20610-01</p>	
<p><a href="#">DatLab</a></p>	<p><b>DatLab</b> is the O2k-Software for Data Acquisition &amp; Analysis, specifically developed for <a href="#">high-resolution respirometry</a> with the <a href="#">Oxygraph-2k</a>. The <a href="#">newest DatLab version</a> is included in the <a href="#">O2k-Core</a>, and updates of DatLab are free of charge during the warranty period of the O2k.</p>	<p>20700</p>	
<p><a href="#">ISS-Integrated Suction System</a></p>	<p><b>ISS-Integrated Suction System:</b> Suction pump 230 or 120 V with stainless steel housing, <a href="#">2 liter waste bottle</a>, <a href="#">filter and tubing</a>; for siphoning off excess medium from the O2k-Stopper and for emptying the <a href="#">O2k-Chambers</a>.</p> <p>For specific country configurations, see Product ID 28101, 28102, 28103.</p> <p><a href="#">O2k-Core:</a> The ISS is included as a standard component of the O2k-Core Unit.</p>	<p>20810</p>	
<p><a href="#">Microsyringe-Core Set</a></p>	<p>The <b>Microsyringe-Core Set</b> consists of 6 10 µl, 6 25 µl, and 2 50 µl Hamilton glass syringes, and 3 spare plungers for the 10 µl syringes. It is a basic HRR-Accessory included in the <a href="#">O2k-Core</a> Unit.</p>	<p>20820-01</p>	
<p><a href="#">O2k-Assembly Kit\Cables</a></p>	<p><b>21### O2k-Assembly Kit\Cables</b></p>	<p>21###</p>	<p><b>21###</b></p>
<p><a href="#">O2k-Main Power Cable\230 V\Europe</a></p>	<p><b>O2k-Main Power Cable\230 V\Europe.</b> An <a href="#">O2k-Main Power Cable</a> is included in the <a href="#">O2k-Core Accessory Set</a>.</p>	<p>21111-01</p>	
<p><a href="#">O2k-Main Power Cable\120 V\US-CA</a></p>	<p><b>O2k-Main Power Cable\120 V\US-CA,</b> USA and Canada (120 V). An <a href="#">O2k-Main Power Cable</a> is</p>	<p>21112-01</p>	





	included in the <a href="#">O2k-Core Accessory Set</a> .		
<a href="#">O2k-Main Power Cable\230 V\AU-NZ</a>	<b>O2k-Main Power Cable\AU-NZ</b> , Australia and New Zealand (230 V). An <a href="#">O2k-Main Power Cable</a> is included in the <a href="#">O2k-Core Accessory Set</a> .	21113-01	
<a href="#">USB-Cable 2.0\Type A-B</a>	<b>USB-Cable 2.0\Type A-B</b> for connecting the <a href="#">O2k-Main Unit</a> (O2k-Series E upwards) to the USB port of a PC or laptop. <a href="#">O2k-Core</a> : in <a href="#">O2k-Assembly Kit</a> .	21230-01	
<a href="#">O2k-Assembly Kit\Main Unit</a>	<b>22### O2k-Assembly Kit\Main Unit</b>	22###	<b>22###</b>
<a href="#">O2k-Chamber Holder</a>	<b>O2k-Chamber Holder</b> (blue POM) for PVDF or PEEK stoppers, with <a href="#">O-ring\Viton\18x2 mm</a> and <a href="#">V-ring\30-35-4.5 mm</a> . After the <a href="#">O2k-Chamber</a> is inserted into the copper block, the O2k-Chamber Holder is screwed on top of the chamber into the copper block to hold the chamber into a tight vertical position (O-ring) and prevent liquid to flow from the stainless steel housing into the space outside of the chamber (V-ring). <a href="#">O2k-Core</a> : 2 in <a href="#">O2k-Assembly Kit</a> , mounted on the <a href="#">O2k-Main Unit</a> .	22100-01	
<a href="#">OroboPOS-Connector</a>	<b>OroboPOS-Connector</b> , with male connection to <a href="#">OroboPOS</a> sensor head (POS) and with cable and male plug fitting into <a href="#">O2k-Main Unit</a> . <a href="#">O2k-Core</a> : 2 in <a href="#">O2k-Assembly Kit</a> , mounted on the <a href="#">OroboPOS-Holders</a> at the <a href="#">O2k-Main Unit</a> .	22200-01	
<a href="#">OroboPOS-Holder</a>	The <b>OroboPOS-Holder</b> (POS-Holder) is screwed into the copper block of the <a href="#">O2k-Main Unit</a> , guiding the <a href="#">OroboPOS-Connector</a> with the <a href="#">OroboPOS</a> sensor head (POS) to the <a href="#">O2k-Chamber</a> , and keeping the OroboPOS-Connector in a fixed position for sealing the O2k-Chamber with the <a href="#">OroboPOS-Seal Tip</a> . In addition, the OroboPOS-Holder fixes the O2k-Chamber in an accurate rotational position by pressing against the angular cut of the glass chamber. <a href="#">O2k-Core</a> : 2 in <a href="#">O2k-Assembly Kit</a> , mounted on the <a href="#">O2k-Main Unit</a> .	22300-01	



<a href="#">O2k-Fuse Power Plug\M2.5 A\5x20 mm</a>	<b>O2k-Fuse Power Plug\M2.5 A\5x20 mm:</b> Mounted on the socket for the <a href="#">O2k-Main Power Cable</a> , at the rear panel of the <a href="#">O2k-Main Unit</a> .	22410-01	
<a href="#">O2k-Chamber and Stirrers</a>	<b>23### O2k-Chamber and Stirrers</b>	23###	<b>23###</b>
<a href="#">O2k-Chamber</a>	<b>O2k-Chamber:</b> 16 mm inner diameter, Duran glass polished, with standard operation volume (V) of 2 cm <sup>3</sup> (2 ml). <a href="#">O2k-Core:</a> 2 in <a href="#">O2k-Assembly Kit</a> .	23100-01	
<a href="#">Stirrer-Bar\white PVDF\15x6 mm</a>	<b>Stirrer-Bar\white PVDF\15x6 mm,</b> operated in the <a href="#">O2k-Chamber</a> at constant stirring speed (standard is 750 rpm, or 12.5 Hz), to provide optimum mixing of the sample in the aqueous medium and ensure a stable signal of the polarographic oxygen sensor ( <a href="#">OroboPOS</a> ) placed in a position of maximum current of the medium. <a href="#">O2k-Core:</a> 2 in <a href="#">O2k-Assembly Kit</a> .	23210-01	
<a href="#">Stirrer-Bar\black PEEK\15x6 mm</a>	<b>Stirrer-Bar\black PEEK\15x6 mm,</b> for specific applications with light guides to minimize optical interference.	23220-01	
<a href="#">Stoppers\conical Shaft\central Port</a>	<b>24### Stoppers\conical Shaft\central Port</b>	24###	<b>24###</b>
<a href="#">Stopper\black PEEK\conical Shaft\central Port</a>	<b>Stopper\black PEEK\conical Shaft\central Port:</b> with conical shaft and one central capillary (with PTFE, graphite, carbon fiber), <a href="#">Volume-Calibration Ring</a> (A or B) for volume adjustment 1.5 to 3.2 ml; 2 mounted O-rings ( <a href="#">O-ring\Viton\12x1 mm</a> ). The black PEEK stoppers are required for optical O2k-MultiSensor Modules ( <a href="#">O2k-Fluorescence LED2-Module</a> ). <a href="#">O2k-Core:</a> 2 in <a href="#">O2k-Assembly Kit</a> ; alternatively, 2 white stoppers <a href="#">Stopper\white PVDF\conical Shaft\central Port</a> .	24000-01	
<a href="#">Stopper\white PVDF\conical Shaft\central Port</a>	<b>Stopper\white PVDF\conical Shaft\central Port:</b> for closing the <a href="#">O2k-Chamber</a> , with one capillary and conical basis; including <a href="#">Volume-Calibration Ring</a> (A or B) for volume adjustment (1.5 to 3.2 ml); 2	24100-01	

	mounted O-rings ( <a href="#">O-ring\Viton\12x1 mm</a> ). <a href="#">O2k-Core</a> : 2 in <a href="#">O2k-Assembly Kit</a> ; alternatively, 2 black stoppers <a href="#">Stopper\black PEEK\conical Shaft\central Port</a> .		
<a href="#">O-ring\Viton\12x1 mm</a>	<b>O-ring\Viton\12x1 mm</b> , for PVDF or PEEK O2k-Stoppers, box of 4 as spares.  <a href="#">O2k-Core</a> : 2 boxes (spares) in <a href="#">O2k-Assembly Kit</a> ;  <a href="#">O2k-TPP+ and Ca2+ ISE-Module</a> and <a href="#">O2k-NO Amp-Module</a> : 2 boxes (spares).	24310-01	
<a href="#">Volume-Calibration Ring</a>	<b>Volume-Calibration Ring (A or B)</b> for PVDF or PEEK O2k-Stoppers, white; included in stoppers, e.g. <a href="#">Stopper\black PEEK\conical Shaft\central Port</a> .	2432A-01 or 2432B-01	
<a href="#">Cover-Slip</a>	The perspex <b>Cover-Slips</b> should be placed on top of the O2k-Stoppers to minimize contamination and evaporation of liquid extruding from the capillary of the stopper. The Cover-Slips do not exert any direct effect on oxygen backdiffusion into the <a href="#">O2k-Chamber</a> . <a href="#">O2k-Core</a> : 2 in <a href="#">O2k-Assembly Kit</a> .	24410-01	
<a href="#">Stopper-Spacer</a>	<b>Stopper-Spacer (or gas spacer)</b> to set the O2k-Stopper into a standard position for a fixed gas phase above the aqueous phase in the <a href="#">O2k-Chamber</a> , during air calibration or for injection of nitrogen, argon or oxygen into the gas phase. <a href="#">O2k-Core</a> : in <a href="#">O2k-Assembly Kit</a> .	24420-01	
<a href="#">Syringe\50 ml\Gas-Injection</a>	<b>Syringe\50 ml\Gas-Injection</b> , 50 ml, with spacer and stainless steel needle, flat tip, for gas injection into the <a href="#">O2k-Chamber</a> . <a href="#">O2k-Core</a> : in <a href="#">O2k-Assembly Kit</a> .	24430-01	
<a href="#">O2k-Catalogue: OroboPOS components</a>	<b>26### O2k-Catalogue: OroboPOS components</b>	26###	26###




<a href="#">OroboPOS</a>	<p>The <b>OroboPOS</b> is a polarographic oxygen sensor (POS), with an amperometric mode of operation. The electrochemical POS was introduced by L Clark, with application of a polarization voltage (0.6 to 0.8 V) and measurement of a current (amperometric), which is converted to a voltage.</p> <p>Shipment: OroboPOS are protected in a transparent perspex vial screwed onto a blue POM base, with the <a href="#">OroboPOS-Membrane Ring</a> arrested on the POS shaft between the POM base and the thicker part of the POS head which holds a <a href="#">O-ring\Viton\8x1 mm</a>.</p> <p><b>O2k-Core:</b> <a href="#">2 OroboPOS</a> are included.</p>	26000-01	
<a href="#">O2k-Service Box</a>	<p><b>O2k-Service Box</b> empty, a component of the <a href="#">OroboPOS-Service Kit</a>.</p>	26101-01	
<a href="#">OroboPOS-Seal Tip</a>	<p><b>OroboPOS-Seal Tip</b>, black butyl rubber gasket with 3 mm pore. 4/Pck, for sealing the <a href="#">OroboPOS</a> (sensor head) against the <a href="#">O2k-Chamber</a>. Push the wetted OroboPOS-Seal Tip over the POS-sensor head, with the pore positioned centrally, not covering any peripheral area of the gold cathode. Do not stretch the gasket across the POS-sensor head. <b>O2k-Core:</b> in <a href="#">OroboPOS-Service Kit</a>.</p>	26110-01	
<a href="#">OroboPOS-Membranes</a>	<p><b>OroboPOS-Membranes</b>, FEP 25 µm; 40/Pck. <b>O2k-Core:</b> 2 Pck in <a href="#">OroboPOS-Service Kit</a>.</p>	26200-01	
<a href="#">OroboPOS-Electrolyte Powder</a>	<p><b>OroboPOS-Electrolyte Powder</b>, KCl. <b>O2k-Core:</b> in <a href="#">OroboPOS-Service Kit</a>.</p>	26300-01	
<a href="#">OroboPOS-Mounting Tool</a>	<p><b>OroboPOS-Mounting Tool</b> for application of <a href="#">OroboPOS-Membranes</a>, with <a href="#">O-ring\Viton\9x1 mm</a> for holding the <a href="#">OroboPOS-Membrane Ring</a> during membrane application.</p>	26400-01	





	<a href="#">O2k-Core</a> : in <a href="#">OroboPOS-Service Kit</a> .		
<a href="#">OroboPOS-Polishing Cloth</a>	<b>OroboPOS-Polishing Cloth</b> for cathode cleaning. <a href="#">O2k-Core</a> : in <a href="#">OroboPOS-Service Kit</a> .	26510-01	
<a href="#">OroboPOS-Polishing Powder</a>	<b>OroboPOS-Polishing Powder</b> for cathode cleaning. <a href="#">O2k-Core</a> : in <a href="#">OroboPOS-Service Kit</a> .	26520-01	
<a href="#">Pen-Contact Oil</a>	<b>Pen-Contact Oil</b> , for stable low contact resistance between the <a href="#">OroboPOS</a> head and the <a href="#">OroboPOS-Connector</a> . <a href="#">O2k-Core</a> : in <a href="#">OroboPOS-Service Kit</a> .	26550-01	
<a href="#">O2-Zero Powder</a>	<b>O2-Zero Powder</b> , <a href="#">dithionite</a> (Na <sub>2</sub> S <sub>2</sub> O <sub>4</sub> ), for zero-oxygen calibration of the <a href="#">OroboPOS</a> . <a href="#">O2k-Core</a> : in <a href="#">OroboPOS-Service Kit</a> .	26600-01	
<a href="#">Forceps for membrane application</a>	<b>Forceps for membrane application</b> : for <a href="#">OroboPOS</a> and <a href="#">ISE</a> membrane application; do not use for <a href="#">tissue preparation</a> . Set: in <a href="#">OroboPOS-Service Kit</a> and <a href="#">O2k-TPP+ and Ca<sup>2+</sup> ISE-Module</a> .	26700-01	
<a href="#">Pipette\Plastic\ungraded</a>	<b>Pipette\Plastic\ungraded</b> , for filling electrolyte into the reservoir of the <a href="#">OroboPOS</a> . <a href="#">O2k-Core</a> : in <a href="#">OroboPOS-Service Kit</a> .	26800-01	
<a href="#">O2k-Catalogue: DatLab Acquisition &amp; Analysis Software</a>	<b>27###</b> <i>O2k-Catalogue: DatLab Acquisition &amp; Analysis Software</i>	27###	<b>27###</b>
<a href="#">DatLab-Upgrading\4.1-4.3</a>	<b>DatLab-Upgrading\4.1-4.3</b> : Upgrading <b>DatLab 4.1</b> to 4.3, incl. O2k-Manual, with free follow-up updates of DatLab 4.3.	27141-43	
<a href="#">O2k-Catalogue: O2k-Core Accessories</a>	<b>28###</b> <i>O2k-Catalogue: O2k-Core Accessories</i> : <a href="#">ISS-Integrated Suction System</a> , <a href="#">Microsyringe-Core Set</a>	28###	<b>28###</b>

<a href="#">ISS-Integrated Suction System\230 V\EU</a>	<b>ISS-Integrated Suction System\230 V\EU:</b> Suction pump 230 V See: <a href="#">ISS-Integrated Suction System</a>	28101-01		
<a href="#">ISS-Integrated Suction System\120 V\US-CA</a>	<b>ISS-Integrated Suction System\120 V\US-CA,</b> suction pump 120 V (USA and Canada). See: <a href="#">ISS-Integrated Suction System</a>	28102-01		
<a href="#">ISS-Integrated Suction System\230 V\AU-NZ</a>	<b>ISS-Integrated Suction System\230 V\AU-NZ,</b> suction pump 230 V and plug for Australia and New Zealand. See <a href="#">ISS-Integrated Suction System</a> .	28103-01		
<a href="#">ISS-Steel Housing</a>	<b>ISS-Steel Housing,</b> a component of the <a href="#">ISS-Integrated Suction System</a> .	28110-01		
<a href="#">ISS-Waste Bottle</a>	<b>ISS-Waste Bottle,</b> 2-liter, component of the <a href="#">ISS-Integrated Suction System</a> .	28120-01		
<a href="#">ISS-Lid</a>	<b>ISS-Lid,</b> for <a href="#">ISS-Waste Bottle</a> , component of the <a href="#">ISS-Integrated Suction System</a> .	28130-01		
<a href="#">O2k-Catalogue: O2k-Compendium</a>	<b>29####</b> <i>O2k-Catalogue: O2k-Compendium</i>	<b>29####</b>	<b>29####</b>	
<a href="#">O2k-Catalogue: TIP2k components</a>	<b>3####</b> <i>O2k-Catalogue: TIP2k components</i>	<b>3####</b>	<b>3####</b>	
<a href="#">Titration-Injection microPump</a>	<b>Titration-Injection microPump (TIP2k)</b> for two-channel operation with the <a href="#">O2k-Core</a> with automatic control by <a href="#">DatLab</a> of programmable titration regimes and feedback control (oxystat, pH-stat). Included in the <a href="#">TIP2k-Module</a> .	31000-01		
<a href="#">Microsyringe\500 mm3\TIP2k</a>	<b>Microsyringe\500 mm3\TIP2k:</b> Microinjection syringe for <a href="#">Titration-Injection microPump</a> , 500 mm3, with spacers. <a href="#">TIP2k-Module</a> : 4 microsyringes included as standard accessory.	31210-01		

<a href="#">TIP2k-Needle Spacer</a>	<b>TIP2k-Needle Spacers</b> for microinjection TIP2k needle, silicone stops (200/Pkg.) with mounting tool. Standard accessory of the <a href="#">TIP2k-Module</a> .	31310-01	
<a href="#">O2k-Catalogue: O2k-MultiSensor components</a>	<b>4#### O2k-Catalogue: O2k-MultiSensor components</b>	4####	4####
<a href="#">O2k-Catalogue: TPP-Ca ISE-Module</a>	<b>42#### O2k-Catalogue: TPP-Ca ISE-Module</b>	42####	42####
<a href="#">ISE Package 1 TPP or Ca</a>	<b>O2k-TPP+ and Ca2+ ISE\1 Chamber:</b> <a href="#">ISE</a> -Package for 1 TPP+ and Ca2+ electrode.	42010-01	
<a href="#">Stopper\white PVDF\angular Shaft\side+6.2+2.6 mm Port</a>	<b>Stopper\white PVDF\angular Shaft\side+6.2+2.6 mm Port</b> , for application with <a href="#">ISE</a> ; side titration port and two additional holes (6.2 mm and 2.6 mm); angular bottom; including <a href="#">Volume-Calibration Ring</a> (A or B); 2 mounted O-rings ( <a href="#">O-ring\Viton\12x1 mm</a> ). 2 included in <a href="#">O2k-TPP+ and Ca2+ ISE-Module</a> .	42110-01	
<a href="#">Stopper-Needle</a>	<b>Stopper-Needle:</b> Short needle for bubble extrusion from port of the <a href="#">ISE-stopper</a> .	42120-01	
<a href="#">Ion-Selective Electrode TPP+ and Ca2+</a>	<b>Ion-Selective Electrode TPP+ and Ca2+:</b> <a href="#">ISE</a> with 6 mm outer diameter shaft, for <a href="#">Stopper\white PVDF\angular Shaft\side+6.2+2.6 mm Port</a> . <a href="#">O2k-TPP+ and Ca2+ ISE-Module</a> : 2 ISE.	42200-01	
<a href="#">ISE-Inner Glass Electrode</a>	<b>ISE-Inner Glass Electrode</b> of <a href="#">ISE</a> , with Ag/AgCl- and Pt-wire	42212-01	
<a href="#">ISE-Membrane Seal</a>	<b>ISE-Membrane Seal</b> for <a href="#">Ion-Selective Electrode TPP+ and Ca2+</a> .	42213-01	
<a href="#">ISE-Compressible Tube</a>	<b>ISE-Compressible Tube</b> for <a href="#">Ion-Selective Electrode TPP+ and Ca2+</a> .	42214-01	
<a href="#">ISE-Consumables Spares Set</a>	<b>ISE-Consumables Spares Set</b>	42250-01	
<a href="#">ISE-TPP+ Membranes</a>	<b>ISE-TPP+ Membranes</b> , PVC, 4 mm diameter, box of 5 membranes. <a href="#">O2k-TPP+ and Ca2+ ISE-Module</a> : 2 boxes per electrode.	42270-01	

<a href="#">ISE-Ca2+ Membranes</a>	<b>ISE-Ca2+ Membranes:</b> PVC, 4 mm diameter, box of 5 membranes. <a href="#">O2k-TPP+ and Ca2+ ISE-Module</a> : 1 box included.	42280-01	
<a href="#">ISE-Membrane Mounting Tool</a>	<b>ISE-Membrane Mounting Tool</b> for <a href="#">Ion-Selective Electrode TPP+ and Ca2+</a> . <a href="#">O2k-TPP+ and Ca2+ ISE-Module</a> : mounting tool included.	42300-01	
<a href="#">ISE-Filling Syringe</a>	<b>ISE-Filling Syringe</b> with needle for <a href="#">Ion-Selective Electrode TPP+ and Ca2+</a> .	42310-01	
<a href="#">Reference-Electrode\2.4 mm</a>	<b>Reference-Electrode\2.4 mm:</b> 2.4 mm diameter glass shaft, for <a href="#">ISE</a> .	42400-01	
<a href="#">Replacement-Barrel</a>	<b>Replacement-Barrel</b> for <a href="#">Reference-Electrode\2.4 mm</a> , 2.4 mm diameter glass.	42401-01	
<a href="#">Electrolyte\Reference-Electrode</a>	<b>Electrolyte\Reference-Electrode</b> for <a href="#">Reference-Electrode\2.4 mm</a>	42402-01	
<a href="#">ISE-Service Box</a>	<b>ISE-Service Box:</b> for storage and shipment of the <a href="#">O2k-TPP+ and Ca2+ ISE-Module</a> .	42510-01	
<a href="#">O2k-Catalogue: pH-Electrode components</a>	<b>43### O2k-Catalogue: pH-Electrode components</b>	43###	<b>43###</b>
<a href="#">O2k-Catalogue: O2k-Fluorescence components</a>	<b>44### O2k-Catalogue: O2k-Fluorescence components</b>	44###	<b>44###</b>
<a href="#">O2k-Catalogue: NO-Amp-Module components</a>	<b>46### O2k-Catalogue: NO-Amp-Module components</b>	46###	<b>46###</b>
<a href="#">Stopper\white PVDF\conical Shaft\central Port\peripheral 2.3 mm Port</a>	<b>Stopper\white PVDF\conical Shaft\central+peripheral 2.3 mm Port:</b> for <a href="#">O2k-MultiSensor</a> applications (NO); 1 additional port (2.3 mm); central titration port; conical bottom; including <a href="#">Volume-Calibration Ring</a> (A or B); 2 mounted O-rings ( <a href="#">O-ring\Viton\12x1 mm</a> ). <a href="#">O2k-MultiSensor</a> : 2 in <a href="#">O2k-NO Amp-Module</a> .	46200-01	
<a href="#">Core-Accessories and Auxiliary HRR-Tools</a>	<b>5#### Core-Accessories and Auxiliary HRR-Tools</b>	5####	<b>5####</b>
<a href="#">O2k-Catalogue: Microsyringes</a>	<b>51### O2k-Catalogue: Microsyringes</b>	51###	<b>51###</b>

<a href="#">Microsyringe\10 mm<sup>3</sup> 51/0.13 mm</a>	Hamilton <b>Microsyringe\10 mm<sup>3</sup> 51/0.13 mm</b> for manual titrations, 10 mm <sup>3</sup> volume; injection needle fixed: 51 mm length, 0.13 mm inner diameter. <a href="#">O2k-Core</a> : 6 included in the <a href="#">Microsyringe-Core Set</a> .	51010-01	
<a href="#">Plunger\10 mm<sup>3</sup></a>	<b>Plunger\10 mm<sup>3</sup></b> for <a href="#">Microsyringe\10 mm<sup>3</sup> 51/0.13 mm</a> , spare. <a href="#">O2k-Core</a> : 3 in <a href="#">Microsyringe-Core Set</a> .	51011-01	
<a href="#">Microsyringe\25 mm<sup>3</sup> 51/0.15 mm</a>	Hamilton <b>Microsyringe\25 mm<sup>3</sup> 51/0.15 mm</b> for manual titrations, 25 mm <sup>3</sup> volume; injection needle fixed: 51 mm length, 0.15 mm inner diameter. <a href="#">O2k-Core</a> : 6 in <a href="#">Microsyringe-Core Set</a> .	51025-01	
<a href="#">Plunger\25 mm<sup>3</sup></a>	<b>Plunger\25 mm<sup>3</sup></b> for <a href="#">Microsyringe\25 mm<sup>3</sup> 51/0.15 mm</a> , spare.	51026-01	
<a href="#">Microsyringe\50 mm<sup>3</sup> 51/0.15 mm</a>	Hamilton <b>Microsyringe\50 mm<sup>3</sup> 51/0.15 mm</b> for manual titrations, 50 mm <sup>3</sup> volume; injection needle fixed: 51 mm length, 0.15 mm inner diameter. <a href="#">O2k-Core</a> : 2 in <a href="#">Microsyringe-Core Set</a> .	51050-01	
<a href="#">Plunger\50 mm<sup>3</sup></a>	<b>Plunger\50 mm<sup>3</sup></b> for <a href="#">Microsyringe\50 mm<sup>3</sup> 51/0.15 mm</a> , spare.	51051-01	
<a href="#">Microsyringe\100 mm<sup>3</sup> 51/0.41 mm</a>	Hamilton <b>Microsyringe\100 mm<sup>3</sup> 51/0.41 mm</b> for manual titrations, 100 mm <sup>3</sup> volume; injection needle fixed: 51 mm length, 0.41 mm inner diameter. These syringes are not included in our standard set, but are recommended for injections of suspensions of isolated mitochondria.	51100-01	
<a href="#">O2k-Catalogue: PBI-Shredder</a>	<b>52### O2k-Catalogue: PBI-Shredder</b>	52###	52###

<p><a href="#">PBI-Shredder SG3</a></p>	<p><b>PBI-Shredder SG3</b> for tissue homogenate preparation, heavy duty high torque SG3 driver with convertible handle, SG3 base with 3 position force setting lever (FSL), battery charger and two lithium ion batteries. The PBI-Shredder SG3 is included in the <a href="#">PBI-Shredder HRR-Set</a>. Select <a href="#">230 V</a> or <a href="#">120 V</a>. OROBOROS INSTRUMENTS: world-wide distributor.</p>	<p>52100</p>	
<p><a href="#">Shredder-Tubes</a></p>	<p><b>Shredder-Tubes:</b> consisting of Shredder Tube FT500-PS with Lysis Disk, serrated <a href="#">Shredder-Ram</a> and <a href="#">Shredder-Screw Cap</a>, coral colour (Box of 100). 1 box is included in the <a href="#">PBI-Shredder HRR-Set</a>.</p>	<p>52210-01</p>	 <p>As the tissue is shredded, the homogenate is forced through the lysis disk into the upper chamber.</p> <p>Solid tissue sample is placed between the serrated Ram and the perforated Lysis Disk.</p> <p>The rotating serrated Ram grinds the tissue.</p> <p>Lysis Disk</p> <p>Cap</p> <p><small>Gross VL, Greenberg HK, Baranov DC, Carlson GM, Stearns-Kaye KJ, Lazarus AN, Kinoshita SI (2011) Isolation of functional mitochondria from rat skeletal and skeletal muscle without manual homogenization. <i>Analyt Biochem</i> 418: 215-223.</small></p>
<p><a href="#">Shredder-Tubes\Metal</a></p>	<p><b>Shredder-Tubes\Metal:</b> consisting of Shredder Tube FT500-PMS with Metal Lysis Disk, serrated <a href="#">Shredder-Ram</a> and <a href="#">Shredder-Screw Cap</a>, coral colour (Box of 100). 1 box is included in the <a href="#">PBI-Shredder HRR-Set</a>.</p>	<p>52220-01</p>	
<p><a href="#">O2k-Catalogue: Microbalance Mettler-Toledo</a></p>	<p><b>53#### O2k-Catalogue: Microbalance Mettler-Toledo</b></p>	<p>53####</p>	<p>53####</p>
<p><a href="#">Microbalance 120 g</a></p>	<p><b>Microbalance 41 g to 120 g;</b> 0.01 mg / 0.1 mg display; particularly for <a href="#">wet weight</a> determination of <a href="#">permeabilized fibres</a>.</p>	<p>53100-01</p>	
<p><a href="#">Microbalance 220 g</a></p>	<p><b>Microbalance 81 g to 220 g;</b> 0.01 mg / 0.1 mg display; particularly for <a href="#">wet weight</a> determination of <a href="#">permeabilized fibres</a>.</p>	<p>53200-01</p>	
<p><a href="#">Microbalance-Transport Case</a></p>	<p><b>Microbalance transport case.</b></p>	<p>53300-01</p>	
<p><a href="#">O2k-Catalogue: HRR-Dissection Tools</a></p>	<p><b>54#### O2k-Catalogue: HRR-Dissection Tools</b></p>	<p>54####</p>	<p>54####</p>
<p><a href="#">Forceps\stainless Steel\straight Tip\sharp</a></p>	<p><b>Forceps\stainless Steel\straight Tip\sharp:</b> for <a href="#">tissue preparation</a>, stainless steel, antimagnetic. One pair is recommended for insertion of the sample into the <a href="#">O2k-Chamber</a> and for handling in combination with <a href="#">Forceps\stainless Steel\rounded</a></p>	<p>54210-01</p>	

	<a href="#">Tip\sharp</a> . Set: in <a href="#">HRR-Dissection Set</a> and <a href="#">PBI-Shredder HRR-Set</a> .		
<a href="#">Forceps\stainless Steel\rounded Tip\sharp</a>	<b>Forceps\stainless Steel\rounded Tip\sharp:</b> for <a href="#">tissue preparation</a> , stainless steel, antimagnetic. One pair is recommended for placing the tissue sample onto the <a href="#">microbalance</a> and for handling in combination with <a href="#">Forceps\stainless Steel\straight Tip\sharp</a> . Set: in <a href="#">HRR-Dissection Set</a> .	54220-01	
<a href="#">Forceps\stainless Steel\angular Tip\fine</a>	<b>Forceps\stainless Steel\angular Tip\fine:</b> for <a href="#">tissue preparation</a> , stainless steel, antimagnetic. Two pairs are used particularly for muscle fibre separation. Set: 2 in <a href="#">HRR-Dissection Set</a> .	54230-01	
<a href="#">Scissors\Wironit 110 mm\straight Tip\sharp</a>	<b>Scissors\Wironit 110 mm\straight Tip\sharp</b> , included in <a href="#">PBI-Shredder HRR-Set</a> and <a href="#">HRR-Dissection Set</a> .	54310-01	
<a href="#">O2k-Workshop\4 Days\Standard</a>	<b>O2k-Workshop\4 Days\Standard:</b> introductory <a href="#">O2k-Workshop</a> and training course (4 Days), standard registration. Module: A registration fee is waived in conjunction with the purchase of the <a href="#">O2k-Core</a> (academic discount), valid during the O2k-Warranty Period.	70004-01	
<a href="#">O2k-Workshop\4 Days\Student</a>	<b>O2k-Workshop\4 Days\Student:</b> introductory training course (4 Days), student registration.	70004-02	
<a href="#">Workshop 3 days Standard</a>	O2k-Workshop (3 days), standard registration.	71003-01	
<a href="#">Workshop 3 days Student</a>	O2k-Workshop (3 days), student registration.	71003-02	
<a href="#">Workshop 7 days Standard</a>	Oxygraph-2k & O2k-MultiSensor Workshop (7 Days), standard registration; combined introductory and advanced O2k-MultiSensor Workshop.	71007-01	
<a href="#">Workshop 7 days Student</a>	O2k-Basic & O2k-Multisensor-Workshop (7 Days), student registration; combined introductory and advanced O2k-MultiSensor Workshop.	71007-02	
<a href="#">Oxygraph-2k start-up service</a>	<b>Oxygraph-2k start-up service,</b> O2k training course (3 days). In most cases, the O2k-Manual provides sufficient detail for	72003-01	

	setting up the O2k and starting measurements, particularly in conjunction with participation in an introductory <a href="#">O2k-Workshop</a> . For specific requirements, however, a start-up visit by a scientific application specialist supports a highly efficient start of a project.		
<a href="#">Oxygraph-2k scientific support service</a>	<b>Oxygraph-2k scientific support visit</b> (4 days) by an O2k-application specialist provides scientific support in specific areas of applications, including help with sample preparation, design and testing of titration protocols (including SUIT protocols), and DatLab analysis.	72004-01	
<a href="#">Packing</a>	<b>99### Packing</b>	99###	99###
<a href="#">Packing\O2k-Box 1</a>	<b>Packing\O2k-Box 1:</b> for shipment of the <a href="#">O2k-Main Unit</a> , with polystyrene inlets. Keep the original packing material safely stored, for any future shipping purposes of the O2k-Main Unit.	99010-01	
<a href="#">Packing\O2k-Box 2</a>	<b>Packing\O2k-Box 2,</b> for shipment of accessories.	99020-01	

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