



GHA

Gas Hydrate Autoclave

Hydrate



Measurement Category	Hydrate
Measurement Target	Efficiency and effectiveness of kinetic hydrate inhibitors KHI and thermodynamic hydrate inhibitors TDI
Sample Materials	Water, Gas, Oil (Hydrocarbon), Inhibitors
Pressure Range	GHA200 to 200 bar / GHA350 up to 350 bar
Temperature Range	-10 to +60 °C (-20 °C expandable)
Sample Quantity	450 ml total, 200 ml fluid (recommended)
Repeatability	Depends on the attempt
Dimensions	60 x 60 x 110 cm (GHA350 without PC)
Weight	GHA200: ~25 kg / GHA350: ~35 kg
Supply	Test gas / compressed air supply
Price Range	
Special Features	<ul style="list-style-type: none">▪ GHA 350: Torque Measurement and High Shear Rates▪ Observe gas hydrate formation during the experiment with up to 3 cameras (photo & video recordings)▪ Realistically simulates pipeline conditions▪ Automated test procedure▪ Space-saving due to small footprint (also in trolleys)▪ Easy opening mechanism



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Basic requirements

Situation (s)

- Field conditions cannot be realistically simulated
- no optical verifiability of the measurement results or the measurement sequence.

Requirement criteria

- What oilfield chemicals do you sell? (good: also hydrate inhibitors)
- So you also measure hydrates? (good: YES)
- Which inhibitors do you measure? (good: KHI, TDI; AA --> GHA350 | worse: HET --> possible, but not useful)
- Do you do screening? (good: No | bad: Yes --> RCS, RC5)
- Is screening sufficient or do you need to be very close to reality? (good: reality, bad: screening)
- How many tests do you run per day?
- How many tests would you like to run per day?
(good: GAP between ACTUAL and SET: factor approx. 1).



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Optional add-on products (Up-selling)

Extended physics. Properties	T, Hastelloy
Software	mandatory
More measuring stations	
Maintenance	✓
Additional Features	Camera, Trolley
Spare parts (if required)	✓
Documents for customs	✓
Customizing	✓
Service	✓
Training	✓

Optional by-products (cross-selling)

Calibration Set	
Test measurement	✓
Chiller	mandatory
Gas-Booster	✗
PC	mandatory
Other	Vacuum pump



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Reason for purchase 1	Safety: GHA 350: You increase the reliability of your measurement results because you can perform test measurements at high shear rates and have good optical control.
Reason for purchase 2	Safety: You can simulate pipeline conditions realistically because the flow conditions of the measurement are close to those in the pipeline. For this reason, the measurement method is the standard for measuring Low Dosage Hydrate Inhibitors (LDHI).
Reason for purchase 3	Convenience: With the software you can variably set all test conditions in advance by a script (e.g. temperature, duration of test phases), so that you can start an automated test at the push of a button. This allows you to examine complex test sequences in one test run.
Reason for purchase 4	Convenience: You operate your measuring instruments conveniently and simply because the test procedure is automated via the software after setup.
Reason for purchase 5	Convenience: You save space in the laboratory because the setup is accommodated in a compact trolley (on wheels). This allows you to move the measuring station conveniently in the laboratory.
Reason for purchase 6	Safety: Make sure you include sour gas in your tests because you can upgrade the meter to H ₂ S compatibility.



For all devices

Step 1	Step 2
<p>In the first step after our discussion, you will receive a quotation for the system with various variants and options. On this basis, you can initiate an internal budget discussion and use secure arguments.</p>	<p>In the second step, you discuss the requirements and the available budget internally with your colleagues. We support you with our advice and helpful documents.</p>
Step 3	Step 4
<p>In the third step we evaluate the quotation with you - based on your internal requirements - and compile the variants and variables as you need them for your application. On this basis you can make a well-founded decision.</p>	<p>If we are perceived as your best alternative, we would be pleased to receive your order. Afterwards we will deal with the details of production, delivery and commissioning. Also, we will send you the order confirmation with the 1st invoice (70 % advance payment) and set an expected delivery date.</p>
Step 5	Step 6
<p>1 month before delivery you will receive the 2nd invoice (30 %). After receipt of payment we will send the system to you.</p>	<p>In the sixth step, we accompany the commissioning and train your staff. Four weeks after commissioning, we arrange a telephone feedback discussion with you and clarify questions and previous experience.</p>

