

Compact Treatment Unit

C•T•U

Description:

The Compact Treatment Unit (CTU) designed for treating slop water and produced water offshore. The separation technology includes coagulation, flocculation, dissolved air flotation with dosing pumps and control system. The treatment system is built into a 12 ft container in compliance with the NORSOK Z-015 standard and approval for ATEX II/3G.

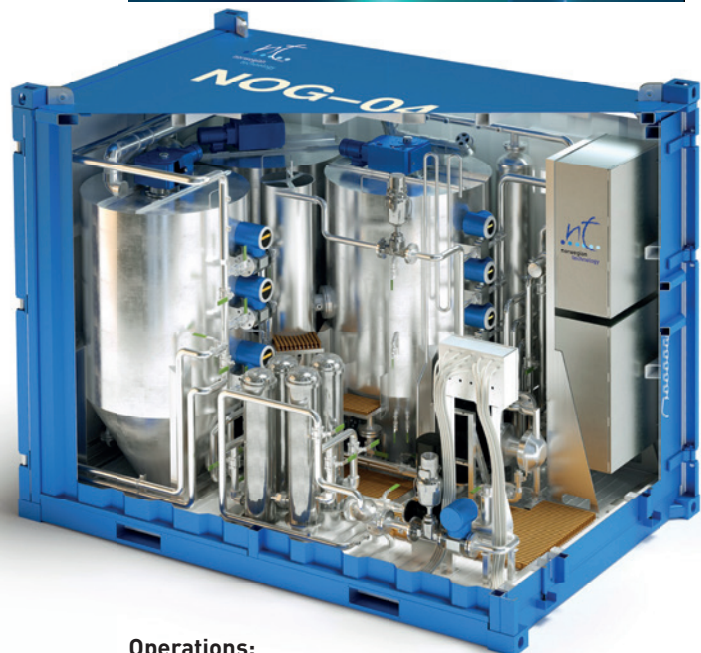


Features:

- Small footprint, 12 ft container
- High treatment capacity, 20m³/h
- Proven technology
- Target discharge less than 5 ppm OIW
- Multipower, 400-480 VAC, 50/60 Hz
- Low power consumption, 16 kW
- Controlled by PLC system
- Internal NTU monitor
(can be correlated to independent OiW monitor)

Benefits:

- Reduces onshore delivery of hazardous waste from the rig up to 95% dependent on water characteristics
- Cost reduction on transport of water to shore and hazardous waste handling
- Avoid production of H₂S during transportation and storage
- Treated water released offshore, not in coastal areas



TECHNICAL DATA

Container.....	5" DNV 2.7.1
Size/weight.....	12 ft / 9 000 kg
Dimensions (mm).....	L: 3 674; W: 2438; H: 3 000
Treatment capacity.....	Up to 20 m ³
Standards & Specifications.....	Norsok Z-015
Inlet.....	2" Cam-Lock Male
Discharge.....	2" Cam-Lock Male
Return.....	2" Cam-Lock Male
Sludge.....	2" Cam-Lock Male
Decanter supply (opt).....	2" Cam-Lock Male
Decanter return (opt).....	2" Cam-Lock Male
Water supply.....	1" Chicago Claw
Air supply.....	1" Chicago Claw
Oil in Water Monitor.....	Infracal TOG / TPH Analyzer
Water usage.....	Max 100l/h (washing)
Chemical usage.....	Dosing based on lab report
Voltage.....	400-480 V 50-60 Hz
Power connection.....	Plug / junction box / 16,5 kw - 32A
Pressurized air usage.....	34.5 Nm ³ /h
Capacity	1-10 m ³ /h
Design pressure.....	10 Bar
Design temperature.....	-5 +35 °C
Design pH.....	2-12
Pressurized air.....	Min 5 barg

Operations:

A touch screen operates the treatment system. The PLC/HMI controls the pumps, motors and valves, and monitors the process variables.

The treatment system consists of 7 steps:

- 1 Inlet – flow control.
- 2 Mixer – coagulation and flocculation.
- 3 Treatment chambers – dissolved air in water is introduced into the chambers for flotation of the flocculated particles. Sludge is skimmed of the top and discharged to sludge skip.
- 4 Discharge balance tank – level control by mechanical weir.
- 5 Barrier 1 – a turbidity meter measures the purity of the water, this controls an automated valve if high turbidity occurs.
- 6 Barrier 2 – in case of emergency oil adsorbing filter elements clog up if oil enters into filters.
- 7 Discharge – discharge pump to sea.

