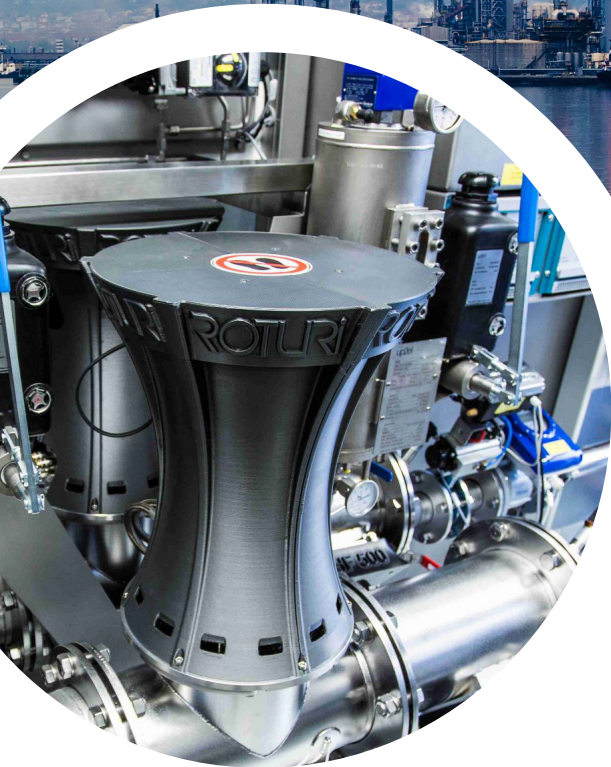


Water Solutions Oil & Gas



Your water needs treatment We take care

Water in refineries

Each refinery has a unique water system and generates significant amounts of wastewater that have been in contact with hydrocarbons.

Many water streams are to be considered for the design of the wastewater treatment plant (WWTP), such as process water, desalter effluent, Sourwater, Spent Caustic, cooling water or condensate blowdown liquid.

Hard to treat - Spent Caustic

Spent Caustic is formed during extraction of acidic compounds from hydrocarbon streams.

H₂S, phenols, organic hydrogen cyanide and carbon dioxide are adsorbed and the resulting Spent Caustic cannot be regenerated but needs to be disposed off. Usually, it is treated in the WWTP or sent off-site for further treatment.

For Spent Caustic, containing significant amounts of naphthenates, Wet Air Oxidation (WAO) could be considered. However, WAO requires very high investment and operating cost.



Your solution for tough tasks



The better alternative

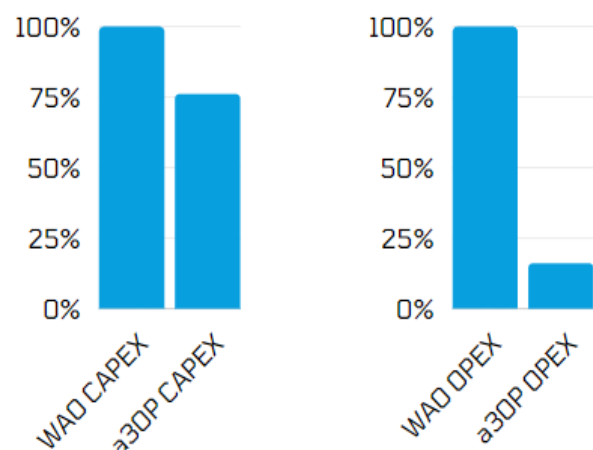
Our Acoustically Activated Advanced Oxygenation Process (a3op®) applies acoustic energy and ozonation to aqueous solutions: Along with the disintegration of present agglomerates our HF Sonotrodes support the generation of OH-radicals (hydroxyl radicals).

Our proprietary gas-mass-transfer technology, the Roturi® achieves a direct ozone dissolution and thus a highly efficient gas transfer.

The whole process is performed at ambient pressure and temperature and hence leads to a safe, reliable and easy to control operation.

Economic advantages

Studies highlight the vast economical advantage of up2e!'s a3op® process compared to wet air oxidation (WAO) with regard to capital expenditure (CAPEX) and operating expenditure (OPEX):





Safe operation

The Roturi® operates in the main pipe system and flow. Ambient pressure and temperature lead to a safe, reliable and easy to control operation!

Modular design

The entire up2e! solution is set-up as a modular design. It can easily and quickly be adjusted to your individual needs and wastewater profiles. Variations in flow rate or changes in load parameters can be addressed directly.

Flawless installation and commissioning

The a3op® platform comes as a pre-tested, skid-mounted and ready-to-operate unit. This makes retro-fitting or new installations not only easy but also highly time efficient.





Your water in good hands. Call us!

About up2e!

up2e! was founded by a team of passionate and experienced wastewater specialists together with our partner EnviroChemie. Hard work, an innovative approach and great teamwork results in the chance to offer our clients the best available solutions for their applications. Our joined focus rests on industrial and municipal wastewater treatment, water reuse as well as water treatment.