

Global Partners

**Chemithon International
Pte. Ltd.**, Singapore

Asia, Africa, Middle East

**Chemithon Engineers
Pvt. Ltd.**, Mumbai

South and Southeast Asia

Chemithon Beijing

Asia Pacific

IIT Srl, Busto Arsizio, Italy

*Europe, Middle East,
North Africa*

Mitsui Plant Systems,
Tokyo

Dioxane Removal Systems

Low Cost Process, Premium Product

Dioxane Removal System (DRS)

Produce premium, low 1,4-dioxane alcohol ether sulfate (AES) without modifying your existing plant equipment or by reducing plant capacity. Current methods to sulfate ethoxy alcohols to minimize dioxane by-product formation include: reducing by a small amount the conversion of ethoxyalcohol to AES, reducing the production throughput by lowering SO₃ gas concentration, by the addition of excess air or by using a wiped film evaporator. A WFE is limited to a 3:1 maximum reduction ratio, as well as being limited in capacity and being mechanically complex.

The proven Chemithon Dioxane Removal System (DRS) can significantly reduce dioxane level in detergents, organics and other highly viscous solutions without reducing plant capacity and by reduction ratios far exceeding any competitive systems. A single-stage DRS reduces dioxane levels by a factor approaching 9:1, while dual-stage systems can reduce levels by a factor approaching 80:1.

The patented Chemithon process starts up quickly, provides operational flexibility to modify the amount of dioxane removal and produces a product that can be pumped.

The DRS is available in a variety of sizes from 1MT through 5MT to match any existing plant requirements.

The Chemithon system allows sulfation at full capacity with higher SO₃ gas concentrations and feedstock conversions, and still produces AES containing very low levels of dioxane after treatment. For new sulfation plant installations, this means lower equipment and operating costs.

A Chemithon DRS retrofit to your existing sulfation plant can produce lower level dioxane product than new state-of-the-art sulfation equipment. It is even possible to lower dioxane levels in off-specification products. And our DRS also removes trapped gases in AES, thereby lowering the apparent viscosity without the need for a separate degasser.

How It Works

70% active AES is metered through a preheater to the DRS. In a highly turbulent, two-phase flow regime, steam is injected and removes dioxane from the liquid. Temperature, pressure and flow controls carefully regulate the process to maintain the desired concentration.

The amount of dioxane removed varies with the number of stages, the amount of steam injected and the operating pressure and temperature. Dioxane does not biologically degrade and must be chemically treated before discharge.

Call Chemithon or Chemithon partners worldwide for additional information about 1,4-dioxane post-removal treatment.



Dioxane Removal System

