

## Oilfield Production Chemicals



# Corroflux™ Scale, Corrosion Control & O<sup>2</sup> Scavengers

Uk Industrial Chemical Manufacturer Specialising in  
Upstream & Downstream Oilfield Chemical Solutions.



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**Chemiphase**   
advanced chemistry

# Corroflux™ Corrosion, Scale & O<sup>2</sup> Scavengers

Highly Effective Range of Oilfield Corrosion Inhibitors, Scale Inhibitors & Oxygen Scavengers  
Outperforms Conventional Scale, Corrosion & Oxygen Scavengers on the market



## Features of Corroflux™

Corroflux™ Oilfield Corrosion Inhibitor Range are corrosion inhibitors that control the corrosion in oil & water systems and ensure protection from acidic species. The Oilfield Corrosion range provides excellent filming properties over a broad pH range.

Part of this range is Scaleflux™ which are our Oilfield Scale Inhibitor Range as well as Oxyflux™ which are our Oxygen Scavengers designed for oilfield applications.

The extraction of gas and oil from a well is more often than not accompanied by water, either from formation, condensation or water injection. Acidic gases are present in the produced fluids and along with a high level of O<sub>2</sub> act to increase the corrosivity of the water to steel. This corrosive action is further complicated by the flow regime, temperature differences along a pipeline and pressure changes which can all add up to not only effect the corrosivity level, but also the corrosivity mechanisms.

Chemiphase have a wealth of knowledge, gained from our working partnerships with oil producers both in the UK and Europe, and as such have an extensive catalogue of corrosion inhibitors within the range. The Oilfield Corrosion Inhibitor Range has a number of products to combat any corrosion issues, under any onsite conditions.

When determining the correct Corroflux™ Treatment by the Chemiphase Technical Team, the following parameters will be assessed :

- ◇ Design of system and typical flow rates.
- ◇ Operating Temperatures
- ◇ Contact Time & Mixing Available
- ◇ Analysis of Carrying Fluid

## Benefits of Corroflux™

- Corroflux™ Oilfield Corrosion are oil soluble products that control corrosion in oil / water systems.
- Corroflux™ Oilfield Corrosion will provide excellent filming properties over a wide pH range band.
- Corroflux™ Oilfield Corrosion range ensures excellent corrosion protection against acidic species.
- Corroflux™ Oilfield Corrosion provides a cost effective corrosion treatment for systems which have varying processing conditions and metallurgy.
- Chemiphase offers on site analysis backed up by laboratory testing for our range of Corroflux™ Oilfield Corrosion Inhibi-

# Corroflux™ Corrosion, Scale & O<sup>2</sup> Scavengers

Highly Effective Range of Oilfield Scale & Corrosion Inhibitors

Outperforms Conventional Scale & Corrosion Inhibitors on the market

Product	Corrosion Inhibitor Chemistry	Product Features & Application
Corroflux™ CT-C15-01	Quaternary ammonium compounds	Corrosion Inhibitor with Biocide
Corroflux™ CT-C16-01	Bisulphite & fatty quaternary ammonium	Suitable pipeline hydrostatic testing
Corroflux™ CT-C17-01	Blend of Polymeric Alkoxylates	General Corrosion Inhibitor
Corroflux™ CT-C17-02	Blend of Polymeric Alkoxylates	Drilling Well Protector
Corroflux™ CT-C17-03	Blend of Polymeric Alkoxylates	Drilling Well Protector
Corroflux™ CT-C17-04	Blend of Polymeric Alkoxylates	General Corrosion Inhibitor
Corroflux™ CT-C17-05	Blend of Polymeric Alkoxylates	General Corrosion Inhibitor
Corroflux™ CT-C53-01	Fatty Acids, Fatty Amines & Volatile Amines	Corrosion/Neutraliser for oilfield & pipeline
Corroflux™ CT-C53-02	Blend of Polymeric Alkoxylates	Corrosion/Neutraliser for oilfield & pipeline
Corroflux™ CT-C53-03	Fatty Acids, Fatty Amines & Monoethanolamine	Corrosion/Neutraliser for oilfield & pipeline
Corroflux™ CT-C53-04	Suitable for Water & Oil Treatment	Amino-tris, Phosphonium Salt & Carboxylic Acid

Product	Scale Control Chemistry	Product Features
Scaleflux™ CT-C41-01	Polyacrylate % Diethylenetriamine PMPA PAM	Scale Inhibitor - Carbonate & Sulphate Scales
Scaleflux™ CT-C41-02	Blend of water soluble polymers	Scale Inhibitor - Carbonate & Sulphate Scales
Scaleflux™ CT-C41-03	Polyacrylate % Diethylenetriamine PMPA PAM	Scale Inhibitor - Carbonate & Sulphate Scales

Product	Oxygen Scavenger Chemistry	Product Features
Oxyflux™ CT-C31-01	Aqueous Solution of Ammonium Bisulphate	Oxygen Scavenger
Oxyflux™ CT-C31-02	Aqueous Solution of Sodium Bisulphate	Oxygen Scavenger
Oxyflux™ CT-C31-03	Powder Solution of Sodium Meta-Bisulphate	Oxygen Scavenger



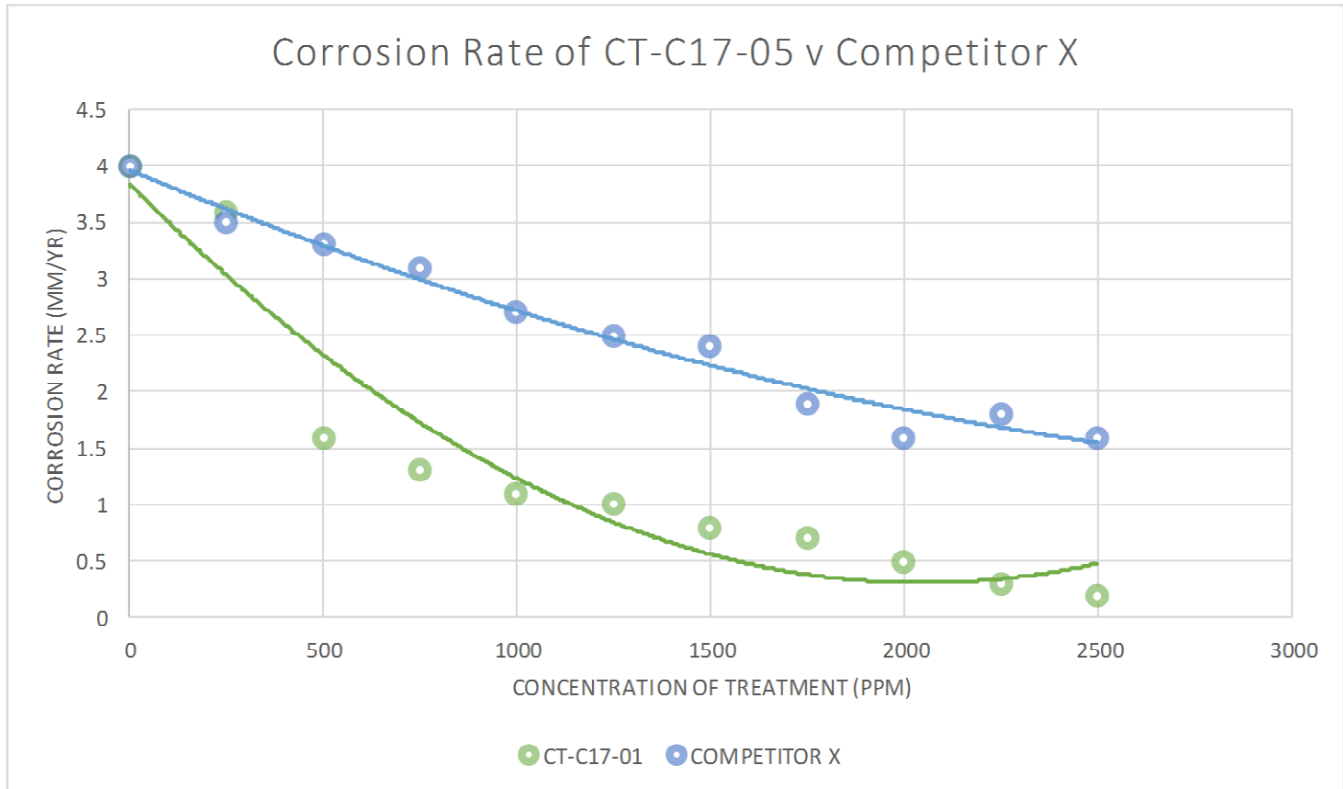
# Case History 1 - Corroflux™ CT-C17-05

Sampling point: Water Re-Injection Well

Temperature: 17°C

Nature of Water: Produced Water

Density: 1.02 g/mL (as given)



## Corrosion Rate Calculation :

The Corrosion rate is calculated by the following formula

$$\text{Corrosion Rate (mpy)} = \frac{\text{Coupon weight loss (g)} \times 2.23 \times 10^4}{\text{Total exposed area of coupon (in}^2\text{) Exposure time (days) x metal density}}$$

Corrosion Rate in mpy =

- Low Rates of Corrosion : < 1.0**
- Moderate Rates of Corrosion : 1.0 - 4.9**
- High Rates of Corrosion : 5.0 - 10.00**
- Severe Rates of Corrosion : > 10.00**

From the graph above you can see that the dosing of **Corroflux™ CT-C17-01** has dramatically reduced the rate of corrosion from 4 MM/yr to below 0.3 MM/Yr.

From the graph above you can see that the dosing of **Competitor X** has had an effect the rate of corrosion from 4 MM/yr to below 1.6 MM/Yr.

In other words, the **Corroflux™ CT21-03** effectiveness is much higher than **Competitor X** performance.

# Case History 1 - Corroflux™ CT-C17-05

**Sampling point:** Water Re-Injection Well

**Temperature:** 17°C

**Nature of Water:** Produced Water

**Density:** 1.02 g/mL (as given)

Treatment	Dosage Rate 0ppm	Dosage Rate 500ppm	Dosage Rate 1000ppm	Dosage Rate 1500ppm	Dosage Rate 2000ppm	Dosage Rate 2500ppm
Blank	4.0	4.0	4.0	4.0	4.0	4.0
Competitor X	4.0	3.5	2.7	2.4	1.6	1.6
Corroflux™ CT-C17-01	4.0	1.6	1.1	0.8	0.5	0.2



## Test Procedure

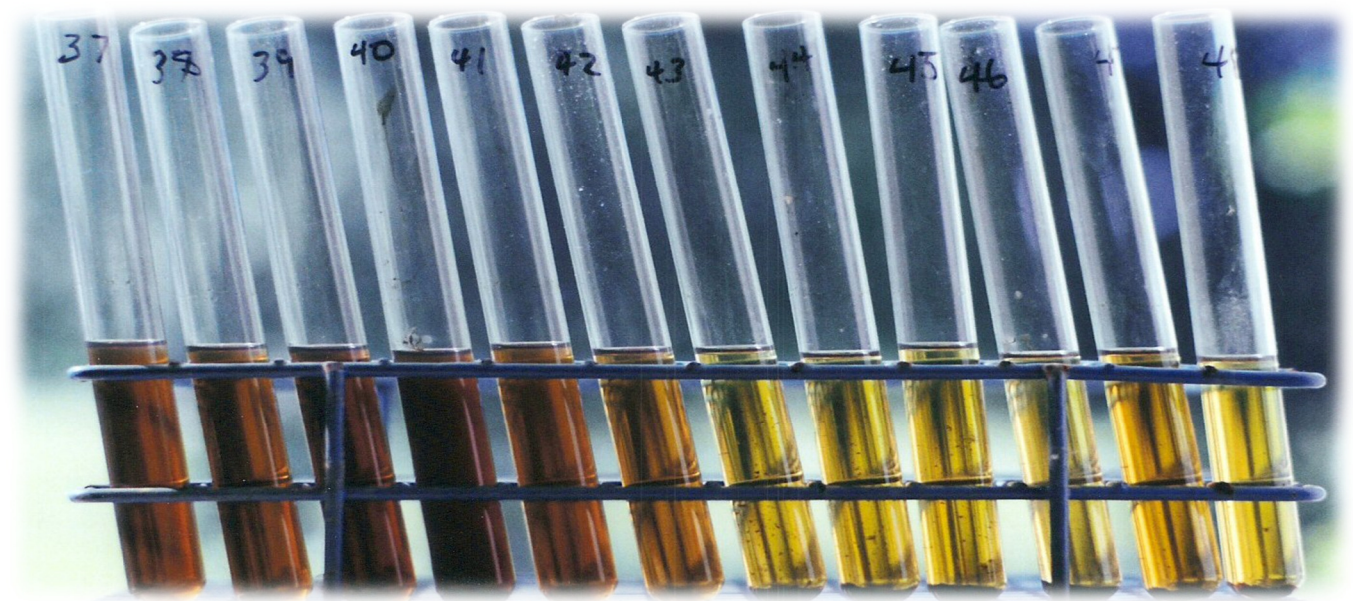
Corrosion test was performed in a modified HSAT test. The HSAT tests uses an open cage spindle containing flat coupons and are rotated at different speeds, in order to generate high local shear stresses on the leading edge of the coupons. This test has been extensively used in developing corrosion inhibitors for applications where ultra-high shear conditions caused severe localized corrosion in gas pipelines. The test has often been called a rotating cage test. In the normal procedure, a mixture of brine/hydrocarbon is added to the autoclave. After purging/evaluation to remove oxygen, inhibitor is added at a specific concentration. The stirrer is then turned on and the pressure and temperature are adjusted to test conditions. At completion of the test, the apparatus are allowed to cool.

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### The Chemiphase Treatment Procedure & Safety Commitment

- ⇒ On site analysis usually bottle testing & then fully re-analyse back in the laboratory to ensure that the product that Chemiphase recommend is the best possible fit, highly effective, safe & cost effective.
- ⇒ Once a product has been recommended we offer on-site technical assistance for the product dosage rates and application points. This will include regular monthly site visits to ensure customer satisfaction.
- ⇒ This on-site technical service will continue to ensure that the product remains the best solution as the oilfield changes over the years.
- ⇒ At Chemiphase we take great pride in offering green, environmentally sustainable chemical solutions and as such all the products in the range are produced using environmentally friendly methods and where possible, are formulated to be fully biodegradable.
- ⇒ All our chemical ranges are formulated by our highly trained and vastly experienced chemists and are put through rigorous in house testing in our purpose built research and development laboratory. We subject our chemical ranges to the most stringent of testing to make sure our customers receive the best products, whilst also satisfying our need for constant product improvement.



### Chemiphase Oilfield Chemical Solution's

- ◇ Oilfield Emulsifier's & Demulsifiers
- ◇ Oilfield H<sub>2</sub>S Scavenger's
- ◇ Oilfield Corrosion Inhibitor's
- ◇ Wax & Paraffin Treatment Regimes for Oilfield Applications
- ◇ MEOR- Enhanced Oil Recovery Techniques
- ◇ Biocide & Scale Management
- ◇ Environmental Drilling Fluids



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