



ENERGY & RESOURCES

# Corrosion Inhibitors

Effective solutions for maximize protection and minimize corrosion.

**INDORAMA**  
VENTURES

Indispensable Chemistry




# Corrosion Inhibitors


Corrosion is an inherent problem in the oil production process, damaging equipment, pipes and compromising operator safety. In order to prevent this, film forming corrosion inhibitors are highly used, retarding the corrosion rates and ensuring a safer extraction process.


**Primary** Corrosion Inhibitors are the main active agents used to prevent and mitigate corrosion of metal surfaces in contact with corrosive environments and are represented in our portfolio by **SURFONIC® OFC Series**.

**Secondary** Corrosion Inhibitors are used in synergy with primary inhibitors to enhance overall corrosion protection. Our portfolio of secondary Corrosion Inhibitors are represented by **ULTROIL® CI Series**.



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**SWEET**  
Corrosion originated by CO<sub>2</sub> in reservoir or injected
- 

**SOUR**  
Corrosion originated by sulfate-reducing bacteria
- 

**OXYGEN**  
Corrosion originated by O<sub>2</sub> dissolved in water

## SURFONIC® OFC 100

### A unique primary corrosion inhibitor imidazoline based

Imidazolines have been a staple in industrial applications for decades, primarily due to their performance in high pressure and high-temperature (HPHT) conditions and oil solubility. Moreover, imidazoline chemistry is essential for producing one of the most widely used types of film-forming organic corrosion inhibitors in the oil and gas industry.

#### FEATURES & BENEFITS



High active content



High temperature

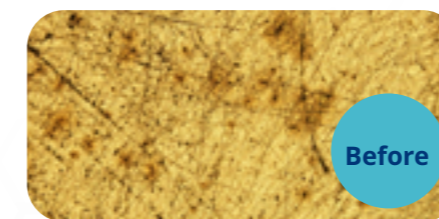
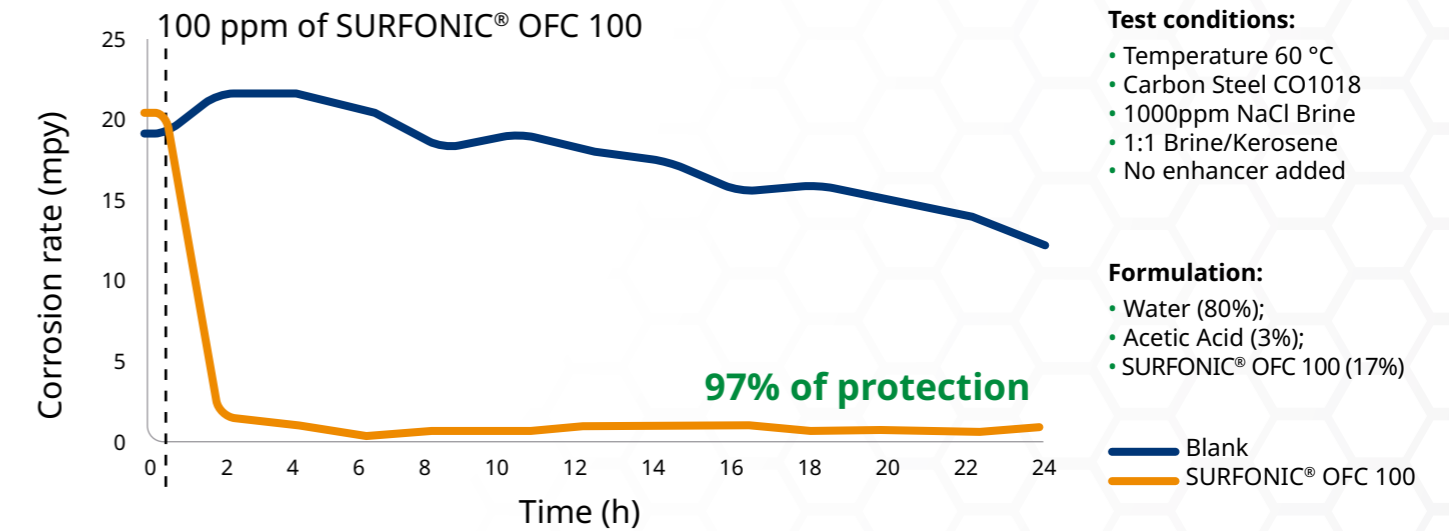


Suitable for Sweet (CO<sub>2</sub>), Sour (H<sub>2</sub>S) and Oxygen (O<sub>2</sub>) corrosion



Concise film forming, protecting the metal surface

#### PRODUCT PERFORMANCE (Sweet CO<sub>2</sub>) - BUBBLE TEST



Blank



Blank

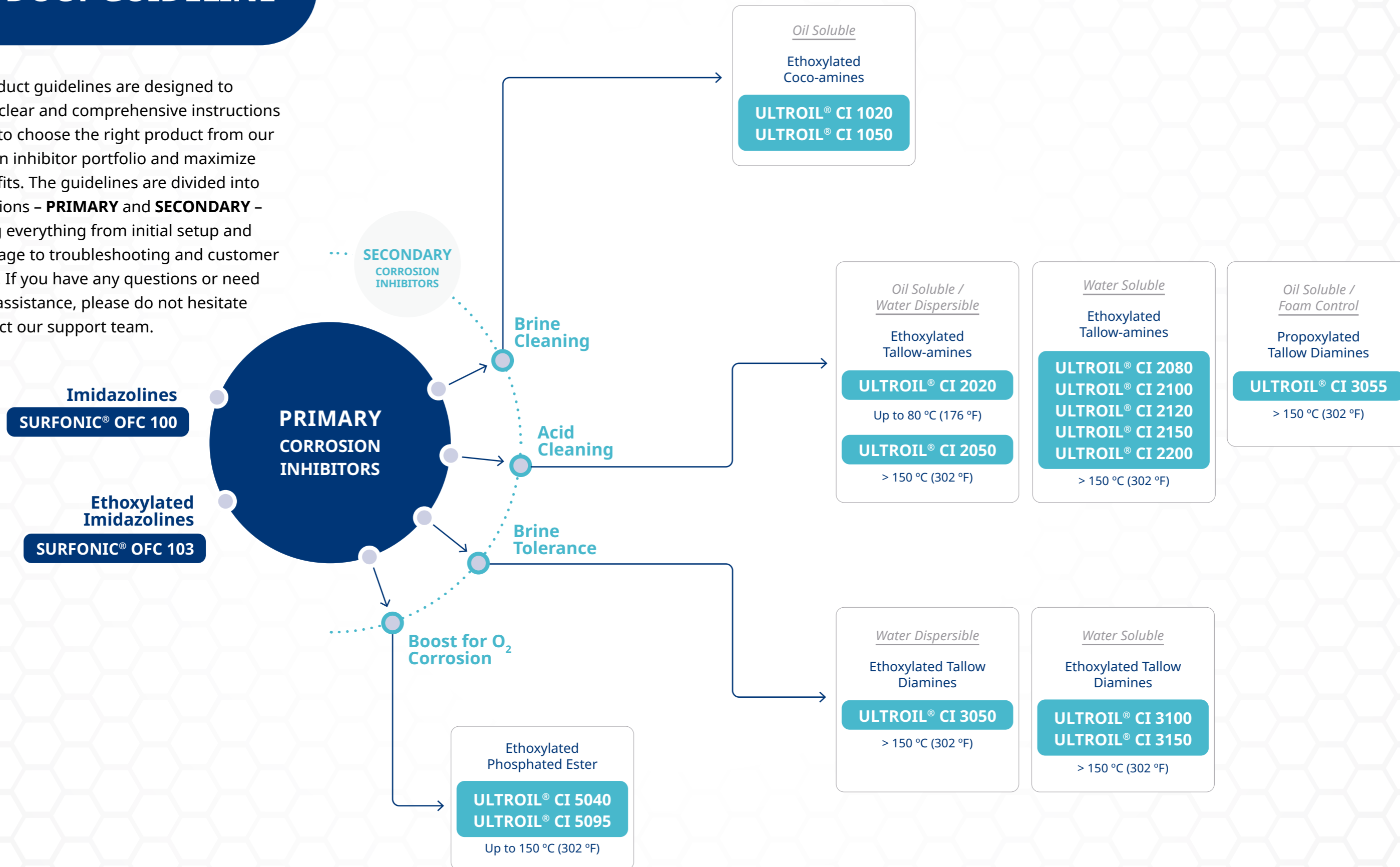


SURFONIC® OFC 100

Magnification 10x  
Olympus BX51

# PRODUCT GUIDELINE

Our product guidelines are designed to provide clear and comprehensive instructions on how to choose the right product from our corrosion inhibitor portfolio and maximize its benefits. The guidelines are divided into two sections – **PRIMARY** and **SECONDARY** – covering everything from initial setup and basic usage to troubleshooting and customer support. If you have any questions or need further assistance, please do not hesitate to contact our support team.



# ULTROIL® CI 5095

## Alkyl phosphate ester corrosion inhibitor

Phosphate ester derivatives are an interesting class of film-forming chemicals that can be used as boosters in corrosion inhibitor formulations. Their greater solubility in aqueous systems makes them an alternative for certain formulations.

### FEATURES & BENEFITS



High active content



High temperature

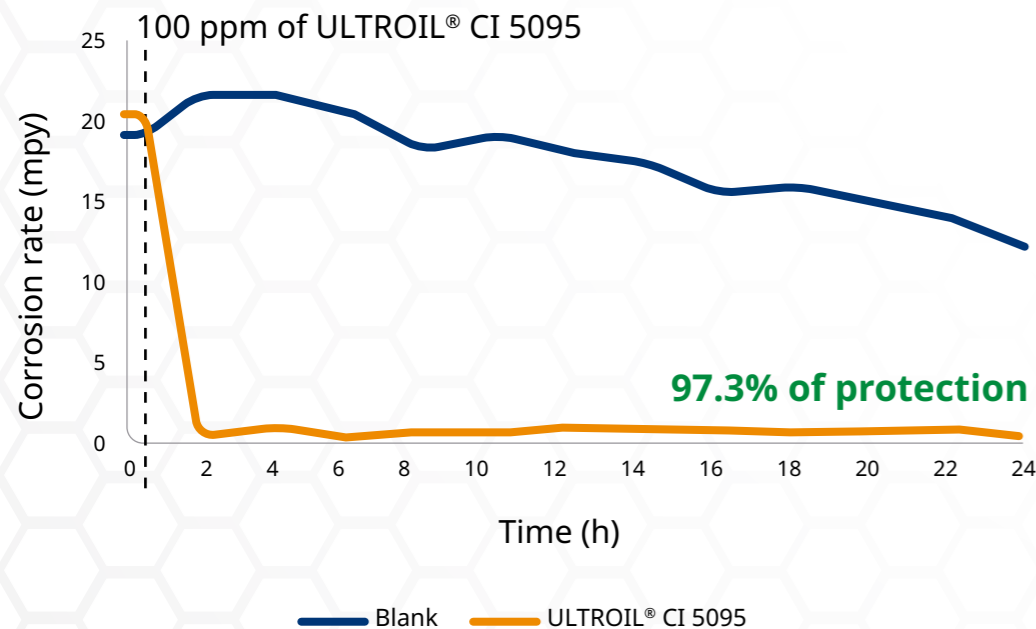


Inhibition booster



Synergistic effect

### PRODUCT PERFORMANCE (Sweet CO<sub>2</sub>) - BUBBLE TEST



#### Test conditions:

- Temperature 60 °C
- Carbon Steel CO1018
- 1000ppm NaCl Brine
- 1:1 Brine/Kerosene
- No enhancer added

#### Formulation:

- Water (80%);
- Acetic Acid (3%);
- ULTROIL® CI 5095 (17%)

## TECHNICAL DATASHEET

Product	Corrosion type			Special properties		Additional Properties	pH <sup>a</sup>	Physical Form (20 °C)	Flash Point (°C)	Flash Point (°F)	Viscosity (cP @25 °C)	Solubility <sup>b</sup>				
	Sweet (CO <sub>2</sub> )	Sour (H <sub>2</sub> S)	Oxygen (O <sub>2</sub> )	High Temp.	High Brine							Water	Ethanol	MEG	Hexane/Heptane	Kerosene

### Primary Corrosion Inhibitors

#### Imidazolines

SURFONIC® OFC 100	●	●	●			High Imidazoline Content	10	Liquid	> 175	> 347	160	I	S	S	S	S
SURFONIC® OFC 103	●	●	●			Ethoxylated imidazoline	11	Liquid	> 175	> 347	1500	I	S	S	S	S

### Secondary Corrosion Inhibitors

#### Ethoxylated Coco Amines

ULTROIL® CI 1020	●	●				Cleaning Properties	10	Liquid	198	388	95	P	S	I	S	S
ULTROIL® CI 1050	●	●				Cleaning Properties	10	Liquid	135	275	106	S <sup>c</sup>	S	S	S	S

#### Ethoxylated Tallow Amine

ULTROIL® CI 2020	●	●				Acid Cleaning	11	Liquid	216	421	3950	P	S	S	S	S
ULTROIL® CI 2050	●	●				Acid Cleaning	10	Liquid	> 260	> 500	100	S <sup>c</sup>	S	S	S	S
ULTROIL® CI 2080	●	●		●		Acid Cleaning	10	Liquid	126	259	160	S	S	S	S	S
ULTROIL® CI 2100	●	●		●		Acid Cleaning	10	Liquid	> 260	> 500	140	S	S	S	S	S
ULTROIL® CI 2120	●	●		●		Acid Cleaning	10	Liquid	> 260	> 500	200	S <sup>c</sup>	S	S	S	S
ULTROIL® CI 2150	●	●		●		Acid Cleaning	10	Liquid	180	356	200	S <sup>c</sup>	S	S	I	I
ULTROIL® CI 2200	●	●		●		Acid Cleaning	10	Liquid	> 200	> 392	370	S <sup>c</sup>	S	S	I	I

#### Alkoxylated Tallow Diamine

ULTROIL® CI 3050	●	●		●		Formulation Aid	13	Liquid	124	255	600	S <sup>c</sup>	S	S	S	S
ULTROIL® CI 3055	●	●		●		Low Foam / Emulsion & Acid Cleaning	11	Liquid	100	212	350	P	S	I	S	S
ULTROIL® CI 3100	●	●		●	●	Formulation Aid	11	Liquid	>94	> 201	230	S <sup>c</sup>	S	S	S	S
ULTROIL® CI 3150	●	●		●	●	Formulation Aid	12	Liquid	> 200	> 392	220	S <sup>c</sup>	S	S	I	I

#### Phosphated Ester

ULTROIL® CI 5040	●	●	●			Inhibitor Booster	2	Liquid	> 150	> 302	3800	S <sup>c</sup>	S	I	I	P
ULTROIL® CI 5095	●	●	●	●		Inhibitor Booster	2	Viscous liquid	> 150	> 302	1900	P <sup>c</sup>	S	I	S	S

<sup>a</sup> 1 wt% in 10:6 IPA:Water

<sup>b</sup> Solubility values obtained with 50 wt% of inhibitor

<sup>c</sup> Solubility values obtained with 25 wt% of inhibitor

S - Soluble P - Partially Soluble I - Insoluble



**DISCLAIMER**

This information is provided in good faith, based on Indorama Ventures' current knowledge of the subject and is purely indicative. No information, including suggestions for using the products, should preclude experimental testing and verification, which are essential to ensuring the suitability of the products for each specific application. Consult the contact from your region or country regarding the availability of each product. All users must also respect local laws and obtain all the necessary permits. When handling the product, consult the safety data sheet. If you have any questions or additional needs, please contact Indorama Ventures through our customer service channels.

SEPTEMBER/24.