



VpCI® FORMULATED PRODUCTS FOR PROCESS INDUSTRIES

VpCI®-629 BIO, Patent Pending

PRODUCT DESCRIPTION

VpCI-629 Bio is the only oilfield inhibitor product on the market which combines high level of corrosion protection, biodegradability and low toxicity.

VpCI-629 Bio is soluble in crude oil and dispersible in fresh water and brine solutions. As a fast-acting and long-term inhibitor, VpCI-629 Bio forms an effective corrosion inhibiting barrier for both ferrous and non-ferrous metals in the presence of water, halogens and corrosive gases such as dissolved oxygen, sulfur dioxide, carbon dioxide and hydrogen sulfide.

Continuing protection between treatments is assured due to solubility, dispersibility in crude water mixtures, and long-term water displacing film formation provided by VpCI-629 Bio. In addition, the product provides vapor phase inhibition to protect areas inaccessible through direct solution contact. This unique characteristic protects internal parts during low fluid levels and combats atmospheric corrosion in production and storage tanks. Field applications and tests, performed by independent laboratories verify that VpCI-629 Bio is effective at a concentration level as low as 5-15 ppm.

FEATURES

- Biodegradable and non-toxic
- Environmentally acceptable in different regions
- Prevents stress corrosion cracking (SCC) and hydrogen embrittlement
- Effective for a wide range of refined hydrocarbons, crude and oil/water mixtures
- Forms a corrosion inhibiting barrier with high film persistency to give continuous, long-term protection
- Vapor phase action provides protection against corrosion from atmospheric conditions for overhead units in processing production and storage tanks
- Available in diluted form for easy direct application without premixing
- Post-action inhibition effect

TYPICAL APPLICATIONS

VpCI-629 Bio is designed for use in crude oil processing equipment, pipelines, refinery equipment and systems as well as petrochemical plant equipment and systems. VpCI-629 protects against pitting, corrosive gases and water intrusions.

TYPICAL PROPERTIES

VpCI-629 Bio

Appearance	Brown liquid
Non-volatile Content	65-70%
Post-action Effect	Up to 60 days
Pour Point	1°F (-17°C)
Protection Coefficient	93-99% (NACE TM-01-77)
Solubility	
<i>Crude oil</i>	Dispersible to soluble
<i>Fresh water</i>	Dispersible
<i>Brine</i>	Dispersible
Density	7.5-7.6 lb/gal (0.90-0.91 kg/l)

DOSAGE/USAGE

VpCI-629 Bio is oil soluble and water/brine dispersable product. It needs to be agitated before using.

Type of System to be Protected	Type of Corrosive Medium	Application/Dosage Data	
		Continuous Application	Intermittent Application
Pipelines and collection systems for water-encroached crude oil.	Separate crude oil/water mixtures with a level of encroachment up to 98%. CO ₂ – varying concentration. H ₂ S – up to 6,000 ppm.	Continuous injection of 5-15 ppm	Intermittent treatment: 1,700-3,500 ppm during a 48 hr. period 4 times/year.
		Oil wells and equipment.	Crude with a high level of water encroachment and high concentrations of CO ₂ and H ₂ S.



CORTEC CORPORATION

Environmentally Safe VpCI®/MCI® Technologies

PERFORMANCE DATA FOR VpCI-629 Bio

¹Corrosion Test –

Wheel Oven Test @160°F (71°C) for 2 days

Concentration, ppm	Effectiveness, %
5	92.3
25	95.5
100	98.7

²Emulsion Tendency, Condition of the test:

Concentration of VpCI™ -629 Bio - 100ppm
 Water : Crude Oil = 80 : 20
 Temperature = 180°F (82°C)

Product	% of Emulsion		
	5 min	15 min	30 min
VpCI-629 Bio	8	8	8
Cortron IRN 181 (Champion)	18	18	18
Blank	6	6	6

^{1,2}Tests performed by P.T. Caltex Pacific, Indonesia

Dynamic circuit test

- Loop Operating conditions:
- Temperature Ambient
- Velocity 6-8 m/min
- Pressure 2-3 psi
- Material Carbon Steel 1010
- Brine NaCl 5%
- CH₃OOH 0.5%
- H₂S (saturated)
- Test Timing 24 hours
- Inhibitor Dose 50 ppm

Effectiveness78% (polarization resistance technique)

FOR INDUSTRIAL USE ONLY

KEEP OUT OF REACH OF CHILDREN

KEEP CONTAINER TIGHTLY CLOSED

NOT FOR INTERNAL CONSUMPTION

CONSULT MATERIAL SAFETY DATA SHEET FOR MORE INFORMATION

Prevention of the stress Corrosion Cracking –

NACE TM-01-77 Procedure

Condition of the test:

Concentration of VpCI™ -629 Bio– 200 ppm
 Steel – ANSI 1045-1018 annealed
 Load – 12000 psi (843 kg/cm²)

Product	Time to failure, days
VpCI-629 Bio	>30
Blank	8

Biodegradability, %

5 days	10 days	25 days
39.3%	52.4%	>60%

*According to 40 CFR 136 and amendments

Toxicity:

48-hour Static-Renewal

Mysidopsis Bahia Definitive Toxicity Test Result

(EPA/600/4-90/027F) data

NOEC/LOEC, ppm CTS <i>M. bahia</i>	LC50, ppm CTS, <i>M. bahia</i>
1000 ppm / 3000 ppm	1511.6

¹ Test	Result
Skeletonema costatum	100 ppm
Acartia tonsa	135 ppm
Corophium volutator	10017 ppm
Scophthalmus maximus	347 ppm

¹Testing performed in accordance with Oslo-Paris commission protocol (Report No. R 026-03, AnalyCen Ecotox AS, Norway, 2003)

PACKAGING AND STORAGE

VpCI-629 Bio is packaged in 5 gallon (19 liter) plastic containers, 55 gallon (208 liter) metal drums, liquid totes and bulk. Store product in tightly closed containers. Shelf life is 36 months.

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