



# Conlen Surfactant Technology

Specialty Chemical Manufacturing, Marketing, & Distribution



Corrosion Inhibitor Series

## Contact Us:

Conlen Surfactant Technology, Inc.  
*Corporate Office & Production Facility*  
14292 Koalstad Road  
Conroe, TX 77302  
Phone: 936-231-3004  
Fax: 936-231-3002  
Web: [www.csttexas.com](http://www.csttexas.com)

## Staff:

Glen E. Walden, President  
Ernest T. McMillan, Vice  
President  
Larry W. Gatlin, R&D  
Richard A. Gatlin, QC

## Business Development & Sales :

Steve Weems, Oil & Gas  
Rick Lane , Agrosience  
Wally Thorne, Agrosience  
Matt Carter, Oil & Gas



# Conlen Surfactant Technology

Specialty Chemical Manufacturing, Marketing, & Distribution

CST-8009	Corrosion Inhibitor / Emulsifier Stabilizer / Dispersing Agent	Primary soya amine + 9 moles (EO)
CST-8015	Corrosion Inhibitor / Emulsifier Stabilizer / Dispersing Agent	Primary soya amine + 15 moles (EO)
CST-8080	Corrosion Inhibitor Intermediate	Dimethyl benzyl ammonium chloride quaternary
CST-8081	Corrosion Inhibitor Intermediate	Alkyl pyridine quaternary ammonium chloride
CST-8100	Corrosion Inhibitor Intermediate	Cyclic amine salt
CST-8105	Corrosion Inhibitor Intermediate	Cyclic amine salt
CST-8115	Corrosion Inhibitor Intermediate	Refined tall oil imidazoline
CST-8120	Corrosion Inhibitor Intermediate	Poly amido amine
CST-8140	Corrosion Inhibitor Intermediate	Oil soluble organic phosphate ester amine complex
CST-8185	Corrosion Inhibitor Intermediate	50 % active, soya dimethyl quaternary ammonium chloride
CST-8205	Corrosion Inhibitor Intermediate / Water Clarifier	Cocodiamine acetate salt
CST-8205 M	Corrosion Inhibitor Intermediate / Water Clarifier	CST-8205 with methanol
CST-8310	Gas Control Hydrate	Alkyl quaternary chloride
CST-8340	Corrosion Inhibitor / Packer Fluid	Amine (EO), coco quat, sulfite
CST-8431	Corrosion Inhibitor	Winterized dilution of CST -8451
CST-8451	Corrosion Inhibitor Intermediate / Water Clarifier	Imidazoline acetate and coco quat
CST-8461	Corrosion Inhibitor Intermediate / Water Clarifier	Imidazoline (sulfur salt) coco quat
CST-8462	Corrosion Inhibitor Intermediate / Scale	Amine salts, quats, and phosphonates
CST-8510	Pipeline Corrosion Inhibitor	8005, 8010, and methanol blend
CST-8571	Corrosion Inhibitor Antioxidant	Oxygen and rust corrosion inhibitor for fuels
CST-8601	Water Soluble Corrosion Inhibitor	APQ for gas well continuous treatment
CST-8612	Corrosion Inhibitor Intermediate	Tall oil imidazoline
CST-8613	Oil Dispersible Corrosion Inhibitor Intermediate	Heavy dimer trimer acids , polyamide salts
CST-86421	Corrosion Inhibitor Intermediate	Soya hydroxy amide / Isopropanol
CST-8651	Water Soluble Corrosion Inhibitor / Water Clarifier	APQ water flood corrosion inhibitor & water clarifier
CST-8653	Corrosion Inhibitor Intermediate	Tall oil imidazoline
CST-8701	Water Dispersible Corrosion Inhibitor	APQ heavy filmer for gas or oil wells
CST-8702	Corrosion Inhibitor	Anionic K + salt of diphosphate ester
CST-8875	Corrosion Inhibitor Intermediate	Dimer trimer acid
CST-8895	Corrosion Inhibitor Intermediate	Dimer trimer diacid
CST-8901	Water Dispersible Corrosion Inhibitor	APQ high temperature non-emulsifier / corrosion inhibitor for gas and oil wells
CST-8911	Gas Control Hydrate	Alkyl quaternary chloride
CST- CD	Corrosion Inhibitor Intermediate & Biostat	Coco diamine
CST-MAS	Corrosion Inhibitor Intermediate	Amine sulfur salt
CST-TD	Corrosion Inhibitor Intermediate	Tallow diamine

Corrosion Inhibitor Series



## CST-8009 Corrosion Inhibitor Emulsifier Stabilizer Dispersing Agent

### Generic Description

CST-8009 is a primary soya amine + 9 moles (EO)

### General Information

CST-8009 is a nonionic / cationic surfactant that presents special properties useful in the textile and tanning solubilizer, dispersant, antistatic, and lubricant. The product is compatible with cationic, anionic, nonionic, and amphoteric surfactants. CST-8009 is a biodegradable compound.

### Application Information

CST-8009 finds application as an emulsifier agent to lubricating oils and pesticides. This product also finds application as a stabilizing agent in latex

### Typical Physical Properties

Form, @ 25°C	Liquid
Density, (lbs/Gal)	8.1 - 8.5
Specific Gravity, °C	1.0029
Flash,	> 300 °F
pH, (at 1% IPA/Water)	11.0-13.0
Neutralization Equivalent,(g/eq)	673.0 – 703.0
Moisture, (Karl Fischer) %	1.0 Maximum

### Shipping and Handling

CST-8009 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-8009.

CST-8009 is Non-Regulated and should be stored at room temperature.

TDS-0697

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## CST-8015 Corrosion Inhibitor Emulsifier Stabilizer Dispersing Agent

### Generic Description

CST-8015 is a primary soya amine + 15 moles (EO)

### General Information

CST-8015 is a nonionic / cationic surfactant that presents special properties useful in the textile and tanning solubilizer, dispersant, antistatic, and lubricant. The product is compatible with cationic, anionic, nonionic, and amphoteric surfactants. CST-8015 is a biodegradable compound.

### Application Information

CST-8015 acts as an emulsifier agent to lubricating oils and pesticides. This product also finds application as a stabilizing agent in latex

### Typical Physical Properties

Form, @ 25°C	Liquid
Density, (lbs/Gal)	8.3 – 8.7
Specific Gravity, °C	1.00 -1.04
Flash,	> 300 °F
pH, (at 1% 70:30 IPA/Water)	10.0-11.0
Neutralization Equivalent,(g/eq)	920.0 – 950.0
Moisture, (Karl Fischer) %	1.0 Maximum

### Shipping and Handling

CST-8015 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-8015.

CST-8015 is Non-Regulated and should be stored at room temperature.

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## CST-8080 Corrosion Inhibitor Intermediate

### Generic Description

**CST-8080** is a dimethyl benzyl ammonium chloride quaternary in methanol and water.

### General Information

**CST-8080** is a corrosion inhibitor intermediate designed for use in formulating a broad range of oil field corrosion inhibitors. The product provides excellent corrosion inhibition in a broad range of environments, including H<sub>2</sub>S, CO<sub>2</sub> and in the presence of trace quantities of oxygen. The product is also effective in the control of bacterially induced corrosion. **CST-8080** may be formulated either alone, or in conjunction with other corrosion inhibitors and / or surfactants to produce either water or oil soluble finished products.

**CST-8080** may be formulated for use in water injection systems, water supply wells, producing oil and gas wells and in gas gathering and transmission lines.

### Suggested Formulation

**CST-8080** can be formulated to provide either a water or oil soluble corrosion inhibitor. To produce a general purpose water soluble product, 20 to 35 percent of **CST-8080** can be formulated in 15 to 20 percent of isopropyl alcohol and water. Additional water solubility can be obtained by blending in 5 to 10 percent of a nonionic surfactant such as **Brimopol 909**. **CST-8080** can be blended with water only at 10 to 50%.

### Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	7.92 – 8.25
Pour Point, °F	+10
Flash,	54 °F
pH, (6% in water)	7.0-9.0
Solubility	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Dispersible

### Application Information

This suggested formulation may be applied to producing wells with high water cuts, gas wells and water handling and injection systems at a typical rate of 15 to 30 ppm. When used as a packer fluid inhibitor, the formulated product should be added to water based packer fluids at a typical rate of 10 gallons per 100 barrels of fluid. This provides the typically recommended packer fluid corrosion inhibitor concentration of 2, 500 ppm.

When **CST-8080** is blended with scale inhibitors the formulated product is typically applied on a continuous basis at a rate of 15 to 30 ppm. Water soluble corrosion inhibitor blends containing **CST-8080** are suitable for use in producing oil and gas wells and low velocity wet gas systems.

Test water floods by batch treat / slug at 250 ppm for 8 hours. Follow with treatment by continuously injecting at 12 to 100 ppm.

### Shipping and Handling

**CST-8080** should be stored in a lined steel or plastic drum.

**CST-8080** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8080**.

**CST-8080** UN 1760, Corrosive Liquid

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## CST-8081 Corrosion Inhibitor Intermediate

### Generic Description

**CST-8081** is an alkyl pyridine quaternary ammonium chloride.

### General Information

**CST-8081** is a corrosion inhibitor intermediate designed for use in formulating a broad range of oil field corrosion inhibitors. The product provides excellent corrosion inhibition in a broad range of environments, including H<sub>2</sub>S, CO<sub>2</sub> and in the presence of trace quantities of oxygen. The product is also effective in the control of bacterially induced corrosion. **CST-8081** may be formulated either alone, or in conjunction with other corrosion inhibitors and / or surfactants to produce either water or oil soluble finished products.

**CST-8081** may be formulated for use in water injection systems, water supply wells, producing oil and gas wells and in gas gathering and transmission lines.

### Suggested Formulation

**CST-8081** can be formulated to provide either a water or oil soluble corrosion inhibitor. To produce a general purpose water soluble product, 20 to 35 percent of **CST-8081** can be formulated in 15 to 20 percent of isopropyl alcohol and water. Additional water solubility can be obtained by blending in 5 to 10 percent of a nonionic surfactant such as **Brimopol 909**

The product may be formulated with imidazolines, poly amides, or other quaternary ammonium chlorides such as **CST-8080** and ethoxylated amines such as **TA-20**.

### Typical Physical Properties

<b>Form, @ 70°F</b>	Liquid
<b>Density, (lbs/Gal)</b>	9.2 – 10.0
<b>Flash Point, °F (TCC)</b>	52
<b>Pour Point, °F</b>	+10
<b>pH, (neat)</b>	3.1 – 5.1
<b>Ionic Charge</b>	Cationic
<b>Solubility</b>	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Dispersible

### Application Information

This suggested formulation may be applied to producing wells with high water cuts, gas wells and water handling and injection systems at a typical rate of 15 to 30 ppm. When used as a packer fluid inhibitor, the formulated product should be added to water based packer fluids at a typical rate of 10 gallons per 100 barrels of fluid. This provides the typically recommended packer fluid corrosion inhibitor concentration of 2,500 ppm.

When **CST-8081** is blended with scale inhibitors the formulated product is typically applied on a continuous basis at a rate of 15 to 30 ppm. Water soluble corrosion inhibitor blends containing **CST-8081** are suitable for use in producing oil and gas wells and low velocity wet gas systems.

### Shipping and Handling

This product should be stored in a lined steel or plastic drum.

**CST-8081** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8081**.

**UN1993 Flammable Liquid, N.O.S.**

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## CST-8100 Corrosion Inhibitor

### Generic Description

**CST-8100** is a cyclic amine salt.

### General Information

**CST-8100** is a corrosion inhibitor concentrate designed for use in blending oil soluble corrosion inhibitors. **CST-8100** provides a very tenacious corrosion inhibitor film that is effective in the presence of both CO<sub>2</sub> and H<sub>2</sub>S. The tenacious filming properties of this product make it well suited for batch applications in wells producing high fluid volumes.

These tenacious filming properties make **CST-8100** an excellent product for use in batch or truck treating of producing oil and gas wells. The product is temperature stable to in excess of 300°F and will not set oil treating systems when used in down hole treating systems. **CST-8100** contains a unique surfactant/demulsifier package to allow the product to be mobile in water, yet to break clean into the oil phase and not aggravate existing emulsion or oil in water carry over problems.

Formulations with **CST-8100** are also excellent candidates for application in moderate to high velocity wet gas systems. In this type application the formulated product is typically applied on a continuous basis.

### Suggested Formulation

**CST-8100** should be diluted with aromatic solvent or diesel prior to use. The product is typically diluted 1 to 4 to provide a general purpose, oil soluble/water dispersible corrosion inhibitor. In highly corrosive environments, the product should be diluted 1 to 3 in solvent.

### Typical Physical Properties

<b>Form, @ 70°F</b>	Mushy Liquid
<b>Density, (lbs/Gal)</b>	7.8 – 8.2
<b>Flash Point, °F (TCC)</b>	60 - 70
<b>Pour Point, °F</b>	+30
<b>pH, (10% Solution)</b>	7.0-10.0
<b>Ionic Charge</b>	Cationic
<b>Solubility</b>	
Fresh Water	Dispersible
High TDS Brine	Dispersible
Isopropanol	Soluble
Diesel	Soluble
Xylene	Soluble
Aromatic Solvent	Soluble

### Application Information

These suggested blends with **CST-8100** will provide an oil soluble corrosion inhibitor suitable for application by either batch or continuous methods.

When continuously injected into wet gas systems, the product should be use at a rate of 0.5 to 1.0 pint per MMCF of natural gas.

Batch treatments with formulated **CST-8100** should be applied at a rate of 20 to 50 ppm. The casing should be pre-wet with lease water and adequate flush applied after treatment to assure the chemical reaches the bottom of the well. To establish an initial corrosion inhibitor film on down hole equipment, this product should be batched into the well and the well put on circulation for 4 to 6 hours. A good rule of thumb is to use one gallon of this formulated product for every 4,000 feet of well depth in this initial treatment, with one gallon of formulated **CST-8100** as a minimum quantity. Due to the tenacious film properties of **CST-8100** the application of this product is not recommended on wells producing less than 75 barrels of total fluid per day.

### Shipping and Handling

**CST-8100** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8100**.

**UN1993, Flammable Liquid, N.O.S.,**

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## CST-8105 Corrosion Inhibitor

### Generic Description

CST-8105 is a cyclic amine salt.

### General Information

CST-8105 is a corrosion inhibitor concentrate designed for use in blending oil soluble/water dispersible corrosion inhibitors. CST-8105 provides a very tenacious corrosion inhibitor film that is effective in the presence of both CO<sub>2</sub> and H<sub>2</sub>S. The product is dispersible in a wide range of produced brines, making it an excellent choice for use in a variety of oil field applications.

The film persistency of CST-8105 makes it an excellent product for use in batch or truck treating of producing oil and gas wells. The product is temperature stable to in excess of 300°F and will not set oil treating systems when used in down hole treating systems. CST-8105 contains a unique surfactant/demulsifier package to allow the product to be highly water dispersible, yet to break clean into the oil phase and not aggravate existing emulsion or oil in water carry over problems.

Formulations with CST-8105 are also excellent candidates for application in low to moderate velocity wet gas systems. In this type application the formulated product is typically applied on a continuous basis.

### Suggested Formulation

CST-8105 should be diluted with aromatic solvent to prior to use. The product is typically diluted 1 to 4 to provide a general purpose, oil soluble/water dispersible corrosion inhibitor. In highly corrosive environments, the product should be diluted 1 to 3 in solvent.

### Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	7.8 – 8.2
Flash Point, °F (TCC)	60 - 70
Pour Point, °F	+45
pH, (10% Solution)	5.0-8.0
Ionic Charge	Cationic
Solubility	
Fresh Water	Dispersible
High TDS Brine	Dispersible
Isopropanol	Soluble
Xylene	Soluble
Aromatic Solvent	Soluble

### Application Information

These suggested blends with CST-8105 will provide an oil soluble/ water dispersible corrosion inhibitor suitable for application by either batch or continuous methods.

In continuous injection applications the formulated product should be used at a rate of 5 to 30 ppm depending on the severity of the corrosion problem. When continuously injected into wet gas systems, the product should be use at a rate of 0.5 to 1.0 pint per MMCF of natural gas.

Batch treatments with formulated CST-8105 should be applied at a rate of 20 to 50 ppm. The casing should be pre-wet with lease water and adequate flush applied after treatment to assure the chemical reaches the bottom of the well. To establish an initial corrosion inhibitor film on down hole equipment, this product should be batched into the well and the well put on circulation for 4 to 6 hours. A good rule of thumb is to use one gallon of this formulated product for every 4,000 feet of well depth in this initial treatment, with one gallon of formulated CST-8105 as a minimum quantity.

### Shipping and Handling

CST-8105 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-8105.

### UN 1993, Flammable Liquid

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## CST-8115 Corrosion Inhibitor

### Generic Description

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CST-8115 is a refined tall oil imidazoline.

### General Information

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CST-8115 is a corrosion inhibitor intermediate designed for use in formulating corrosion inhibitors. The product is un-neutralized imidazoline that may be used to produce amine salts. CST-8115 provides a tenacious corrosion inhibitor film that is effective in the presence of both CO<sub>2</sub> and H<sub>2</sub>S. These properties make the product an excellent choice for use in a variety of oil field applications.

CST-8115 may be salted with a variety of acids to produce a finished product of various solubilities. Formulations with acetic or hydroxyacetic acids will produce a water soluble or water dispersible product. Dimer trimer acids may be used to produce an oil soluble or oil insoluble, water dispersible product.

### Suggested Formulation

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CST-8115 should be formulated with an acid to provide a finished product. For a water soluble blend, it is recommended that 20% of the product be formulated with glacial acetic acid to a pH of 7.5 to 8.0 in water and isopropyl alcohol. Care should be taken with all neutralizations as this reaction will generate heat.

A good general purpose oil soluble corrosion inhibitor may be formulated by blending 10% isopropyl alcohol and aromatic solvent.

### Application Information

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The water soluble suggested blend with CST-8115 will provide a water soluble corrosion inhibitor suitable for

### Typical Physical Properties

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Form, @ 70°F	Liquid
Density,	7.7
Flash Point, °F (TCC)	>300
Pour Point, °F	10
pH, (neat)	1.0 – 2.0
Ionic Charge	Cationic
Solubility	
Fresh Water	Insoluble
High TDS Brine	Insoluble
Isopropanol	Soluble
Xylene	Soluble
Aromatic Solvent	Soluble

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application by continuous methods. This blended product should be used at a rate of 5 to 30 ppm depending on the severity of the corrosion problem. When continuously injected into wet gas systems, the product should be used at a rate of 0.5 to 1.0 pint per MMCF of natural gas.

This water soluble formulation finds application in producing oil and gas wells, water injection systems and gas transmission systems.

Batch treatments with the oil soluble formulation of CST-8115 should be applied at a rate of 20 to 50 ppm. The casing should be pre-wet with lease water and adequate flush applied after the treatment to assure the chemical reaches the bottom of the well. To establish an initial corrosion inhibitor film on down hole equipment, this product should be batched into the well and the well put on circulation for 4 to 6 hours. A good rule of thumb is to use one gallon of this formulated product for every 4,000 feet of well depth in this initial treatment, with one gallon of formulated CST-8115 as a minimum quantity.

### Shipping and Handling

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CST-8115 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-8115.

### UN1760, Corrosive Liquid

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## CST-8120 Corrosion Inhibitor

### Generic Description

CST-8120 is a poly amido amine.

### General Information

CST-8120 is a corrosion inhibitor intermediate designed for use in formulating corrosion inhibitors. The product is un-neutralized poly amido amine imidazoline that provides a tenacious corrosion inhibitor film that is effective in the presence of both CO<sub>2</sub> and H<sub>2</sub>S. These properties make the product an excellent choice for use in a variety of oil field applications.

CST-8120 may be salted with a variety of acids to produce a finished product of various solubilities. Formulations with acetic or hydroxyacetic acids will produce a water soluble or water dispersible product. Dimer trimer acids may be used to produce an oil soluble or oil insoluble, water dispersible product.

### Suggested Formulation

CST-8120 should be formulated with an acid to provide a finished product. For a water soluble blend, it is recommended that 20% of the product be formulated with glacial acetic acid to a pH of 7.5 to 8.0 in water and isopropyl alcohol. Care should be taken with all neutralizations as this reaction will generate heat.

A good general purpose oil soluble corrosion inhibitor may be formulated by blending 10% CST-8120 with 20% CST-8875 & 8895 acid in 10 % isopropyl alcohol and aromatic solvent.

### Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	7.34
Flash Point, °F (TCC)	200
pH, (10% Solution)	9.0-11.0
Ionic Charge	Cationic
Solubility	
Fresh Water	Insoluble
High TDS Brine	Insoluble
Isopropanol	Soluble
Xylene	Soluble
Aromatic Solvent	Soluble

### Application Information

The water soluble suggested blend with CST-8120 will provide a water soluble corrosion inhibitor suitable for application by continuous methods. This blended product should be used at a rate of 5 to 30 ppm depending on the severity of the corrosion problem. When continuously injected into wet gas systems, the product should be use at a rate of 0.5 to 1.0 pint per MMCF of natural gas. This water soluble formulation finds application in producing oil and gas wells, water supply wells, water injection systems and gas transmission systems.

Batch treatments with the oil soluble formulation of CST-8120 should be applied at a rate of 20 to 50 ppm. The casing should be pre-wet with lease water and adequate flush applied after the treatment to assure the chemical reaches the bottom of the well. To establish an initial corrosion inhibitor film on down hole equipment, this product should be batched into the well and the well put on circulation for 4 to 6 hours. A good rule of thumb is to use one gallon of this formulated product for every 4,000 feet of well depth in this initial treatment, with one gallon of formulated CST-8120 as a minimum quantity.

### Shipping and Handling

CST-8120 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-8120.

### Non-Regulated

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## CST-8140 Corrosion Inhibitor Intermediate

### Generic Description

**CST-8140** is an oil soluble organic phosphate ester amine.

### General Information

**CST-8140** is an oil soluble corrosion inhibitor intermediate designed for use in water based drilling muds and air mist/stable foam drilling operations. **CST-8140** is an cathodic / amodic corrosion inhibitor that has proven highly effective in controlling the pitting corrosion attack caused by dissolved oxygen. The product provides excellent corrosion control in air mist, stable/stiff foam, aerated fluid and water based bentonite mud systems. **CST-8140** is well suited for use in either fresh water, KCl or brine drilling fluids and remains effective in the presence of CO<sub>2</sub> and H<sub>2</sub>S. The scale inhibitor/dispersant properties of **CST-8140** alleviate the problems associated with solids deposition and build-up on the drill string.

### Suggested Formulation

**CST-8140** may be used as is, or formulated to provide a general purpose drill pipe corrosion inhibitor. A suggested formulation is to blend 18 to 30 gallons of **CST-8140** with ethylene glycol and water. This blend should be stored in a lined steel or plastic drum.

### Application Information

Typical use concentrations of 500 parts per million (ppm) **CST-8140** are recommended to effectively control corrosion induced by dissolved oxygen. A good rule of thumb is to add 2 to 3 gallons of **CST-8140** for every 100 barrels of make-up fluid. **CST-8140** is used to treat corrosion and scale in oil or gas fuels, in power oil systems, and especially in systems with very little water.

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### Typical Physical Properties

<b>Form, @ 70°F</b>	Liquid
<b>Density, (lbs/Gal)</b>	7.0-8.0
<b>Flash Point, °F (TCC)</b>	>200
<b>Pour Point, °F</b>	+10
<b>pH, (5% IPA/Water)</b>	6.0-8.0
<b>Ionic Charge</b>	Anionic
<b>Solubility</b>	
Fresh Water	Dispersible
High TDS Brine	Dispersible
Isopropanol	Dispersible
Xylene	Soluble
Aromatic Solvent	Soluble

The product may be added by either batch treatment or injection directly into the drilling fluid stream with a chemical pump on a continuous basis. Since the product is anionic, it is extremely important to maintain a 500 ppm residual in the system. Product concentration may be monitored with a phosphate test kit. Use concentrations of blends of **CST-8140** should be ratioed up depending upon the formulation used.

When used in high bentonite mud systems formulations with **CST-8140** may have a slight thinning effect on the mud if excessive amounts of the product are added. Pilot testing is recommended on individual mud systems to assure the compatibility of **CST-8140** with specific drilling mud systems.

### Shipping and Handling

**CST-8140** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8140**.

**Not D.O.T. Regulated in containers <119 gal containers**

**NA1993, RQ, Combustible Liquid, N.O.S., PGII**



## CST-8185 Corrosion Inhibitor Intermediate

### Generic Description

**CST-8185** is a 50% active, soya dimethyl quaternary ammonium chloride.

### General Information

**CST-8185** is a water soluble and surface active, technical grade quaternary ammonium chloride that is used in a wide variety of industrial applications. The product utilized in corrosion inhibition, anti-caking, pigment dispersion, fabric finishing, ore flotation and cleaner and car washing compounding. The product effectively oil wets steel surfaces to form an impervious protective corrosion inhibitor film. In oil field applications **CST-8185** is effective in virtually all oil field environments, in the presence of high concentrations both H<sub>2</sub>S and CO<sub>2</sub>. The product is soluble in all oil field brine, including saturated salt water, potassium and calcium chloride brines. **CST-8185** is also soluble in sea water, potassium and calcium chloride brines. **CST-8185** is extremely well suited for application in water flood operations for use in water handling and injection systems. The excellent solubility and thermal stability characteristics of **CST-8185** also make it well suited for packer fluid applications. Formulations with **CST-8185** remain stable in static applications and will not floc, separate or oil out.

**CST-8185** may be utilized alone, or formulated with other specialty chemicals to meet a wide variety of application needs.

### Suggested Formulation

**CST-8185** may be formulated alone, or in conjunction with other water soluble specialty chemicals. A suggested formulation of 30 to 40 weight percent of **CST-8185** in water and 15% of isopropyl alcohol is recommended for use in water handling and injection systems and packer fluid applications.

TDS-0697

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### Typical Physical Properties

<b>Form, @ 70°F</b>	Liquid
<b>Density, (lbs/Gal)</b>	7.6 – 8.0
<b>Flash Point, °F (TCC)</b>	72
<b>Pour Point, °F</b>	-20
<b>pH, (5% in 3:1 IPA/H<sub>2</sub>O)</b>	6.6 – 7.5
<b>Ionic Charge</b>	Cationic
<b>Solubility</b>	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Dispersible

### Application Information

This suggested formulation may be applied to producing wells with high water cuts, gas wells and water handling and injection systems at a typical rate of 15 to 30 ppm. When used as a packer fluid inhibitor, the formulated product should be added to water based packer fluids at a typical rate of 10 gallons per 100 barrels of fluid. This provides the typically recommended packer fluid corrosion inhibitor concentration of 2, 500 ppm.

When **CST-8185** is blended with scale inhibitors the formulated product is typically applied on a continuous basis at a rate of 15 to 30 ppm. Water soluble corrosion inhibitor blends containing **CST-8185** are suitable for use in producing wells and low velocity wet gas systems.

### Shipping and Handling

**CST-8185** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8185**.



## CST-8205 Corrosion Inhibitor Intermediate

### Generic Description

**CST-8205** is a cocodiamine acetate salt in water and isopropanol.

### General Information

**CST-8205** is semi-polar cocodiamine acetate salt possessing excellent corrosion and bacterial properties. The product is designed for application in non-potable industrial and oil field water systems where bacterial slime and corrosion problems exist. Unlike nonionic surfactants, **CST-8205** leaves steel surfaces oil wet to assist in providing a more impervious corrosion inhibitor film.

**CST-8205** is as effective as an inhibitor of acid or saline induced corrosion. The product also reduces microbial influenced corrosion and biogenic H<sub>2</sub>S production because it is effective against acid producing bacteria as well as sulfate reducing bacteria at low concentrations. **CST-8205** can be used in a wide range of brines and is not affected by total dissolved solids and high brine composition. When used in sour water the product will not react with H<sub>2</sub>S.

**CST-8205** may be blended with quaternary ammonium chlorides or other water soluble corrosion inhibitor / water treating additive formulations to provide additional high surface activity without reducing the corrosion inhibitor film properties. In these type applications the product provides corrosion inhibition, detergency, surface tension reduction, improved water injectivity and increase filter cycles.

### Suggested Formulation

**CST-8205** may be used in either oil or water soluble formulations. When used in oil soluble formulations, the product is typically added at a rate of 5 to 20 percent per drum to provide increased water dispersibility. These rates are also typical when used as a coupling agent in oil soluble formulations. As a water soluble surfactant, **CST-8205** should be formulated in water and isopropyl alcohol to provide a finished product.

TDS-0697

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### Typical Physical Properties

<b>Form @ 70°F</b>	Liquid
<b>Density, (lbs/Gal)</b>	7.7 – 8.1
<b>Flash Point, °F (TCC)</b>	53
<b>Pour Point, °F</b>	+15
<b>pH, (10% Solution)</b>	5.9 – 6.5
<b>Ionic Charge</b>	Cationic
<b>Solubility</b>	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Soluble

One suggested formulation is to blend 30 percent of **CST-8205** into 45 to 60 percent of water.

Field performance data has indicated that a blend of 10 percent of **CST-8205** with 20 percent of a water soluble corrosion inhibitor in alcohol and water provides an excellent water treating product for water injection systems.

### Application Information

The suggested water treating additive formulation should be applied either by continuous or batch methods. This formulation is suitable for use in water supply wells, water handling systems, water disposal and water injection systems at a typical rate of 10 to 20 ppm.

The water soluble surfactant formulation or the water treating additive formulation may be used in well clean up operations. In this application, 10 to 15 gallons of the formulated product should be added to the well and the well placed on circulation for 4 to 6 hours.

### Shipping and Handling

**CST-8205** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8205**.

### UN1993, Flammable Liquid



## CST-8205M Corrosion Inhibitor Intermediate Water Clarifier

### Generic Description

**CST-8205M** is CST-8205 with methanol, a winterized formula concentrate.

### General Information

**CST-8205M** is semi-polar cocodiamine acetate salt possessing excellent corrosion and bacterial properties. The product is designed for application in non-potable industrial and oil field water systems where bacterial slime and corrosion problems exist. Unlike nonionic surfactants, **CST-8205M** leaves steel surfaces oil wet to assist in providing a more impervious corrosion inhibitor film. **CST-8205M** is as effective as an inhibitor of acid or saline induced corrosion. The product also reduces microbially influenced corrosion and biogenic H<sub>2</sub>S production because it is effective against acid producing bacteria as well as sulfate reducing bacteria at low concentrations. **CST-8205M** can be used in a wide range of brines and is not effected by total dissolved solids and high brine composition. When used in sour water the product will not react with H<sub>2</sub>S. **CST-8205M** may be blended with quaternary ammonium chlorides or other water soluble corrosion inhibitor / water treating additive formulations to provide additional high surface activity without reducing the corrosion inhibitor film properties. In these type applications the product provides corrosion inhibition, detergency, surface tension reduction, improved water injectivity and increase filter cycles.

### Suggested Formulation

**CST-8205M** may be used in either oil or water soluble formulations. When used in oil soluble formulations, the product is typically added at a rate of 5 to 20 percent per drum to provide increased water dispersibility.

### Typical Physical Properties

<b>Form, @ 70°F</b>	Thin Liquid
<b>Density, (lbs/Gal)</b>	7.0 – 7.4
<b>Flash Point, °F (TCC)</b>	54
<b>Pour Point, °F</b>	< (-) 10
<b>pH, (10% Solution)</b>	5.9 - 6.5
<b>Ionic Charge</b>	Cationic
<b>Solubility</b>	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Soluble

These rates are also typical when used as a coupling agent in such formulations. For a finished product **CST-8205M** should be formulated in water to provide a water soluble surfactant. One suggested formulation is to blend 30 percent of **CST-8205M** into 70 percent of water.

Field performance data has indicated that a blend of 10 percent of **CST-8205M** with 20 percent of a water soluble corrosion inhibitor in alcohol and water provides an excellent water treating product for water injection systems.

### Application Information

The suggested water treating additive formulation should be applied either by continuous or batch methods. This formulation is suitable for use in water supply wells, water handling systems, water disposal and water injection systems at a typical rate of 10 to 20 ppm.

The water soluble surfactant formulation or the water treating additive formulation may be used in well clean up operations. In this application, 10 to 15 gallons of the formulated product should be added to the well and the well placed on circulation for 4 to 6 hours.

### Shipping and Handling

**CST-8205M** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8205M**.

**UN1230, Methanol**

TDS-0697

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## CST-8310 Gas Control Hydrate

### Generic Description

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CST-8310 is an alkyl quaternary chloride

### General Information

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CST-8310 kinetic hydrate inhibitor is a water soluble, proprietary formulation designed to inhibit the formation of gas clathrate molecules (commonly called "hydrates") in systems producing or handling natural gas and crude oil

### Application Information

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CST-8310 is typically applied by injection upstream in the system, well ahead of the areas experiencing problems associated with hydrate deposition. This allows the product time to disperse into the aqueous phase and inhibit the formation of hydrates that occur due to pressure and temperature conditions.

CST-8310 should be injected continuously into a system that has had the hydrate deposition removed immediately prior to usage. Typical dosages should begin at the upper range at about 20% (200,000 ppm) based on the amount of water present. Optimization of the product in the system should reduce consumption of the CST-8310 even further, to about 5% - 10% (50,000 to 100,000 ppm) based on the amount of water present. Much of the product usage will depend upon the extremes of pressure and temperature encountered in the system.

### Typical Physical Properties

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Form, @ 70°F	Liquid
Density, (lbs/Gal)	6.8 – 7.2
Flash Point, °F (TCC)	54
pH,	7.8 – 8.8
Water Absorption	Appreciable

### Other Information

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**Feature:** Water soluble formulation

**Benefit:** Inhibits via the phase that forms the hydrate molecules

**Feature:** Effective at lower concentrations than methanol

**Benefit:** Reduces expenses and product handling requirements

**Feature:** Winterized formulation

**Benefit:** Effectively controls seasonal problems with hydrates in all climates.

### Shipping and Handling

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CST-8310 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-8310.

**UN1993, Flammable Liquid**

TDS-0697

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## CST-8340 Corrosion Inhibitor / Packer Fluid

### Generic Description

CST-8340 is an amine (EO), coco quat, sulfite

### General Information

CST-8340 is a 70-75% active amine quaternary ammonium chloride, amine ethoxylate, and sulfite blend. The product is a highly cationic compound that is used to formulate corrosion preventives for use a wide variety of oil field production chemicals. This product is an excellent corrosion inhibitor for CO<sub>2</sub>, H<sub>2</sub>S, H<sub>2</sub>S contributors, and oxygen. Will remove biomass in high dosages.

CST-8340 can be used for oil well completion packer fluid corrosion inhibitors, water injection system surfactants, water clarifiers, and anti-foulants.

CST-8340 can be blended with scale preventives for multi-purpose chemical additives.

CST-8340 can be diluted with water and methanol to make water-soluble type corrosion preventives.

### Application Information

Apply CST-8340 at 2500 to 10,000 ppm in packer fluid or work over completion fluids. In water fluids, slug treat at 250 to 500 for 4 to 8 hours and then treat continuously at 25-100 ppm. Increase as needed based on oxygen content to be removed.

### Typical Physical Properties

Form, @ 25°C	Liquid
Density, (lbs/Gal)	8.83 – 9.16
Flash Point, TCC	140 °F
pH, (5% solution in water)	8.0 - 9.0
Solubility, 10% in	
Fresh Water	Soluble
Xylene	Insoluble
Isopropanol	Soluble
Kerosene	Insoluble

### Suggested Formulation

CST-8340 Optimum treatment concentrations will vary depending upon the specific application.

CST-8340 is typically blended with 67% water.

Dilute with water at 1 part CST-8340 with 1 to 4 parts water. Methanol or glycols can be added at about 20% volume for normal winterization. Polyglycols can be added as defoamer to control foaming when displacing casing or work over area.

### Shipping and Handling

CST-8340 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-8340.

**UN3142, Disinfectant Liquid, Toxic,**

TDS-0697

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## CST-8431 Corrosion Inhibitor

### Generic Description

**CST-8431** is an imidazoline acetate cocodimethylbenzyl quaternary ammonium synergized blend. A winterized dilution of **CST-8451**.

### General Information

The **CST-8431** water solution with methanol and isopropanol can be used to control freeze point. **CST-8431** assists to control microbial growth by competition for metal or solid surfaces. It controls abrasion or erosion-corrosion due to sand, etc. **CST-8431** disperses solids and sand and corrosion by-products. It assists to remove solids from metal surfaces and to de-oil solids.

### Application Information

**CST-8431** can be used to treat downhole tubular, wellheads, flowlines, dry gas lines, and water injection systems. Not normally used in water injections as very oily. It finds applications in capillary applications or in gas injection systems. **CST-8431** works in very low doses, <24ppm, sometimes <10ppm., and can be used with phosphonates to form combinations corrosion/ scale inhibitor. **CST-8431** is compatible for use with foamers.

### Typical Physical Properties

<b>Form, @ 70°F</b>	Liquid
<b>Flash, °F (Closed Cup)</b>	86
<b>Density, (lbs/Gal)</b>	8.0 – 8.4
<b>Pour Point, °C</b>	< 0
<b>pH,</b>	5.5 – 7.5
<b>Solubility, in:</b>	
Water	Soluble
Kerosene	Insoluble
Xylene	Insoluble
Isopropanol	Soluble

### Suggested Formulation

**CST-8431** can be used as is or diluted with water for application.

**CST-8431** can be mixed with scale inhibitors for combination products.

### Shipping and Handling

**CST-8431** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8431**.

**UN1993, Flammable Liquid, N.O.S.,**

TDS-0697

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## CST-8451 Corrosion Inhibitor Intermediate Water Clarifier

### Generic Description

**CST-8451** is an imidazoline acetate cocodimethylbenzyl quaternary ammonium synergized blend.

### General Information

The **CST-8451** water solution with Methanol and isopropanol can be used to control freeze point. **CST-8451** assists to control microbial growth by competition for metal or solid surfaces. It controls abrasion or erosion-corrosion due to sand, etc. **CST-8451** disperses solids, sand and corrosion by-products. It assists to remove solids from metal surfaces and to de-oil solids. It can be used to treat Downhole tubular, wellheads, flowlines, dry gas lines, and water injection systems. Not normally used in water injections as very oily.

### Application Information

**CST-8451** finds applications in capillary applications or in gas injection systems. **CST-8451** works in very low doses, <24ppm, sometimes <10ppm., and can be used with phosphonates to form combinations corrosion/ scale inhibitor.

### Typical Physical Properties

<b>Form, @ 70°F</b>	Liquid
<b>Flash, °F (Closed Cup)</b>	86
<b>Density, (lbs/Gal)</b>	7.66 – 8.0
<b>Pour Point,</b>	
<b>pH,</b>	4.0-7.0
<b>Solubility, in:</b>	
Water	Soluble
Kerosene	Insoluble
Xylene	Dispersible
Isopropanol	Soluble

### Suggested Formulation

Dilute with water or water and one of the following; methanol, isopropanol, or glycol at 10 to 50% **CST-8451** and the remainder solvent. Higher alcohol content used for lower freezing point.

### Shipping and Handling

**CST-8451** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8451**.

**UN1993, Flammable Liquid, N.O.S.**

TDS-0697

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## CST-8461 Corrosion Inhibitor Intermediate Water Clarifier

### Generic Description

**CST-8461** is an imidazoline thioglycoate cocodimethylbenzyl quaternary ammonium synergized blend

### General Information

The **CST-8461** is 71% active in methanol and isopropanol. It can be diluted in water, alcohol, glycol, or glycol ethers. **CST-8461** assists to control microbial growth by competition for metal or solid surfaces. It controls abrasion or erosion-corrosion due to sand, etc. **CST-8461** disperses solids, sand and corrosion by-products. It assists to remove solids from metal surfaces and to de-oil solids

### Application Information

**CST-8461** can be used to treat downhole tubular, wellheads, flowlines, dry gas lines, and water injection systems. Not normally used in water injections as very oily. It finds applications in capillary applications or in gas injection systems. **CST-8461** works in very low doses, <24ppm, sometimes <10ppm., and can be used with phosphonates to form combinations corrosion/ scale inhibitor. **CST-8461** is compatible for use with foamers.

### Typical Physical Properties

<b>Form, @ 70°F</b>	Liquid
<b>Flash, °F (Closed Cup)</b>	86
<b>Density, (lbs/Gal)</b>	8.0 – 8.4
<b>Pour Point, °C</b>	< 0
<b>pH,</b>	5.5 – 7.5
<b>Solubility, in:</b>	
Water	Soluble
Kerosene	Insoluble
Xylene	Insoluble
Isopropanol	Soluble

### Suggested Formulation

**CST-8461** can be used as is or diluted with water for application.

**CST-8461** can be mixed with scale inhibitors for combination products.

### Shipping and Handling

**CST-8461** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8461**.

**UN2924, Flammable Liquid, Corrosive Material**

TDS-0697

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## CST-8462 Corrosion / Scale Inhibitor

### Generic Description

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**CST-8462** is a dimethyl benzyl ammonium chloride quaternary, phosphonate, and sulfur modified imidazoline in alcohol and water.

### General Information

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**CST-8462** is a corrosion inhibitor designed for use in a broad range of oil field treating. The product provides excellent corrosion inhibition in a broad range of environments, including H<sub>2</sub>S, CO<sub>2</sub> and in the presence of trace quantities of oxygen. The product is also effective in the control of bacterially induced corrosion.

**CST-8462** is a finished product and used in form as received or diluted with water provides scale inhibition against CaCO<sub>3</sub>, CaSO<sub>4</sub>, BaSO<sub>4</sub>, SrSO<sub>4</sub>, and Fe scales.

**CST-8462** is an excellent surfactant and non-emulsifying.

**CST-8462** may be formulated for use in water injection systems, water supply wells, producing oil and gas wells and in gas gathering and transmission lines.

**CST-8462** is a general purpose water soluble product.

### Typical Physical Properties

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<b>Form, @ 70°F</b>	Liquid
<b>Density, (lbs/Gal)</b>	8.0 – 8.4
<b>Pour Point, °F</b>	(-)10
<b>pH, (neat)</b>	< 2.5
<b>Solubility</b>	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Insoluble

### Application Information

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**CST-8462** may be applied for corrosion control to producing wells with high water cuts, gas wells and water handling and injection systems at a typical rate of 15 to 30 ppm.

**CST-8462** contains scale inhibitors and is applied on a continuous basis at a rate of 15 to 30 ppm. Water soluble corrosion inhibitor **CST-8462** are suitable for use in producing oil and gas wells when diluted with water. Do not use neat or injection into dry streams.

### Shipping and Handling

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This product should be stored in a lined steel or plastic drum.

**CST-8462** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8462**.

**UN2924, Flammable Liquid, Corrosive, N.O.S.,**

TDS-0697

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## CST-8571 Corrosion Inhibitor Antioxidant

### Generic Description

CST-8571 is an ashless, organic phosphate / amine salt.

### General Information

CST-8571 is a highly effective oxygen and rust corrosion inhibitor for fuels. Combined in this complex chemical product are properties that render it highly effective as a corrosion inhibitor for process units, especially in liquid propane, LPG, and gasoline.

CST-8571 also displays remarkable use as a carburetor anti-icer and automotive induction system detergent.

When used as an anti-rust additive CST-8571 prevents rust formation in storage tanks and pipelines by forming a tenacious film on metallic surfaces that isolates the metal surface from corrosive elements without leaving a residue which could plug nozzles when propane or butane are atomized for burning.

As a multi-purpose additive, CST-8571, exerts definite antioxidant synergistic effects. CST-8571 used a light hydrocarbon soluble inhibitor for process distillation overhead areas. The product effectively increases rate for online cleaning

### Typical Physical Properties

Form,	Liquid
Density, (lbs/Gal)	6.6 - 7.1
Flash Point, °F (TCC)	< 84
Solubility,:	
Light Hydrocarbon	Soluble
Fuel	Soluble
JP-4	Soluble
Iso-Octane	Soluble

### Shipping and Handling

CST-8571 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-8571.

**Bulk: NA-1993 Combustible Liquid, N.O.S.**

TDS-0697

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## CST-8601 Water Soluble Corrosion Inhibitor

### Generic Description

**CST-8601** is an alkyl pyridine benzyl quaternary ammonium chloride, non-ionic, and anionic surfactant concentration.

### General Information

**CST-8601** is an 80% active solution in methanol and water. It is a non-emulsifying corrosion inhibitor and is oil dispersible and water dispersible. It is a highly cationic amine compound used to formulate corrosion preventatives for use in oil or gas well production and gathering systems, and water flooding systems. **CST-8601** is highly effective in finding application for corrosion preventives in high temperature gas wells or refineries. It is an excellent corrosion inhibitor for continuous injection, batch treatment, truck treating or squeeze. **CST-8601** is designed for treatment continuously in dry pipelines and is alkaline (pH > 8.3) with vapor occurrence and after drying or dehydration is still a mobile liquid.

### Suggested Formulation

**CST-8601** can be used as any high density or weighted inhibitor. A high temperature stable diluted version can be prepared by dilution with triethylene glycol. The diluted version can be used for down hole continuous injection or pipeline treatment. A weighted inhibitor for sour systems can be done using **CST-8601** as 100% or dilution with triethylene glycol or hydroxyamines. Preferred dilution is 1 part **CST-8601** to 1 part water or 1 part **CST-8601** to 2 – 4 parts methanol. Vaporous volatile amines as morpholine, diethylamine, or triethylamine may be added for increase vapor conduct. A diluted version of 20% **CST-8601** and 80% methanol is used for down hole continuous injection or pipeline treatment.

### Typical Physical Properties

<b>Form, @ 77°F</b>	Viscous Liquid
<b>Density, (lbs/Gal)</b>	8.5 to 8.8
<b>Flash Point, °F (TCC)</b>	60 - 65
<b>Pour Point, °F</b>	(-) 20
<b>pH, (5% Solution)</b>	8 to 10
<b>Active Content %</b>	80
<b>Specific Gravity @77°F</b>	1.03 to 1.06
<b>Solubility, 10% in:</b>	
Fresh Water	Dispersible
Xylene	Insoluble
Isopropanol	Soluble
Kerosene	Insoluble

### Application Information

**CST-8601** may be used as is for high temperature gas wells (batch treatment dispersed in water), for pipeline batch treatment, oil wells pumping or flowing batch treatment. **CST-8601** and its blends in water and alcohols form very thin films **CST-8601** is best used at 250 to 2000 ppm in dry gas lines added continuously. **CST-8601** can batch treat at 0.8 to 3.0 gal/ dia-in/mile of pipe followed by continuous treatment.

### Shipping and Handling

**CST-8601** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. This chemical may cause severe skin irritation and passage of this material into the body through the skin is possible. In case of skin or eye contact, flush exposed area with copious amounts of water for a minimum of 15 minutes. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8601**.

**UN1993, Flammable Liquid, N.O.S.**

TDS-0697

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## CST-8612 Corrosion Inhibitor Intermediate

### Generic Description

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CST-8612 is a tall oil imidazoline.

### General Information

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CST-8612 is a corrosion inhibitor intermediate designed for use in formulating corrosion inhibitors. The product is unneutralized imidazoline that may be used to produce amine salts. CST-8612 provides a tenacious corrosion inhibitor film that is effective in the presence of both CO<sub>2</sub> and H<sub>2</sub>S. These properties make the product an excellent choice for use in a variety of oil field applications.

CST-8612 may be salted with a variety of acids to produce a finished product of various solubilities. Formulations with acetic or hydroxyacetic acids will produce a water soluble or water dispersible product. Dimer trimer acids may be used to produce an oil soluble or oil insoluble, water dispersible product.

### Suggested Formulation

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CST-8612 should be formulated with an acid to provide a finished product. For a water soluble blend, it is recommended that 20% of the product be formulated with glacial acetic acid to a pH of 7.5 to 8.0 in water and isopropyl alcohol. Care should be taken with all neutralizations as this reaction will generate heat.

A good general purpose oil soluble corrosion inhibitor may be formulated by blending 10% isopropyl alcohol and aromatic solvent.

### Typical Physical Properties

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Form, @ 70°F	Liquid
Density,	7.7 – 8.91
Flash Point, °F (TCC)	> 150
pH, (10% Solution)	11 – 12.8
Ionic Charge	Cationic
Solubility	
Fresh Water	Insoluble
High TDS Brine	Insoluble
Isopropanol	Soluble
Xylene	Soluble
Aromatic Solvent	Soluble

### Application Information

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The water soluble suggested blend with CST-8612 will provide a water soluble corrosion inhibitor suitable for application by continuous methods. This blended product should be used at a rate of 5 to 30 ppm depending on the severity of the corrosion problem. When continuously injected into wet gas systems, the product should be used at a rate of 0.5 to 1.0 pint per MMCF of natural gas. CST-8612 water soluble formulation finds application in producing oil and gas wells, water injection systems and gas transmission systems. Batch treatments with the oil soluble formulation of CST-8612 should be applied at a rate of 20 to 50 ppm. The casing should be pre-wet with lease water and adequate flush applied after the treatment to assure the chemical reaches the bottom of the well. To establish an initial corrosion inhibitor film on down hole equipment, this product should be batched into the well and the well put on circulation for 4 to 6 hours. A good rule of thumb is to use one gallon of this formulated product for every 4,000 feet of well depth in this initial treatment, with one gallon of formulated CST-8612 as a minimum quantity.

### Shipping and Handling

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CST-8612 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-8612.

### Non-Regulated / Non-Hazardous

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## CST-8613 Oil Dispersible Corrosion Inhibitor Intermediate

### Generic Description

**CST-8613** is a 75-80% active heavy dimer trimer acid, polyamide salts in aromatic solvent, xylene, and isopropyl alcohol.

### General Information

**CST-8613** is an oil soluble corrosion inhibitor intermediate designed for use in formulating a broad range of oil field corrosion inhibitors. The product is a non-emulsifying corrosion inhibitor for low temperature or high temperature systems. **CST-8613** may be formulated either alone, or in conjunction with other corrosion inhibitors and / or surfactants to produce oil dispersible finished products. **CST-8613** forms very tenacious films especially for CO<sub>2</sub> gas/oil production with bicarbonate water brine.

### Suggested Formulation

**CST-8613** can be used in concentrated form or diluted with hydrocarbon solvents for application purposes. **CST-8613** is base heated before dilution and added to warm solvent. Use at 10 to 40% in high grade aromatic solvent or xylene with isopropanol if needed. Some water dispersible blends have been made by adding small amounts of organic acids or water soluble dispersant.

### Typical Physical Properties

<b>Form</b> , @ 70°F	Liquid
<b>Flash</b> , °F (TCC)	80 - 90
<b>Density</b> , (lbs/Gal)	7.75 – 7.81
<b>Pour Point</b> , °C	-18
<b>pH</b> , (5% in 3:1 IPA:Water)	6.0-8.0
<b>Solubility</b> , 10% in:	
Fresh Water	Slightly to Dispersible
Kerosene	Slightly Dispersible
Isopropanol	Soluble
Xylene	Soluble

### Application Information

**CST-8613** is used at 3 gals / diameter-inch / length- mile of pipe for treating oil or gas transmission lines.

For 10,000 ft and 2 inch pipe = 435 gallons of  
Typically assume blend is "100%", so is about 110 gallons of blend for treatment.

For treatment downhole for 4 mil. film use the blend  
4 x 25% (4) x 0.01632 gal. (diameter-in x length-ft)

### Shipping and Handling

**CST-8613** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8613**.

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## CST-86421 Corrosion Inhibitor Intermediate

### Generic Description

CST-86421 is a soya hydroxyl amide in isopropanol

### General Information

CST-86421 is a corrosion inhibitor concentrate designed for use in blending oil soluble corrosion inhibitors. CST-86421 provides a very tenacious corrosion inhibitor film that is effective in the presence of both CO<sub>2</sub> and H<sub>2</sub>S. The tenacious filming properties of this product make it well suited for batch applications in wells producing high fluid volumes.

These tenacious filming properties make CST-86421 an excellent product for use in batch or truck treating of producing oil and gas wells. The product is temperature stable to in excess of 300°F and will not set oil treating systems when used in down hole treating systems. CST-86421 contains a unique surfactant/demulsifier package to allow the product to be mobile in water, yet to break clean into the oil phase and not aggravate existing emulsion or oil in water carry over problems.

Formulations with CST-86421 are also excellent candidates for application in moderate to high velocity wet gas systems. In this type application the formulated product is typically applied on a continuous basis.

### Suggested Formulation

CST-86421 should be diluted with aromatic solvent or diesel prior to use. The product is typically diluted 1 to 4 to provide a general purpose, oil soluble/water dispersible corrosion inhibitor. In highly corrosive environments, the product should be diluted 1 to 3 in solvent.

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### Typical Physical Properties

Form, @ 70°F	Mushy Liquid
Density, (lbs/Gal)	7.6 – 8.1
Flash Point, °F (TCC)	60 - 70
pH, (neat)	7.0-10.0
<b>Solubility</b>	
Fresh Water	Dispersible
High TDS Brine	Dispersible
Isopropanol	Soluble
Diesel	Soluble
Xylene	Soluble
Aromatic Solvent	Soluble

### Application Information

These suggested blends with CST-86421 will provide an oil soluble corrosion inhibitor suitable for application by either batch or continuous methods. When continuously injected into wet gas systems, the product should be used at a rate of 0.5 to 1.0 pint per MMCF of natural gas. Batch treatments with formulated CST-86421 should be applied at a rate of 20 to 50 ppm. The casing should be pre-wet with lease water and adequate flush applied after treatment to assure the chemical reaches the bottom of the well. To establish an initial corrosion inhibitor film on down hole equipment, this product should be batched into the well and the well put on circulation for 4 to 6 hours. A good rule of thumb is to use one gallon of this formulated product for every 4,000 feet of well depth in this initial treatment, with one gallon of formulated CST-86421 as a minimum quantity. Due to the tenacious film properties of CST-86421 the application of this product is not recommended on wells producing less than 75 barrels of total fluid per day. Pipeline treatments use CST-86421 diluted in diesel or solvent. Batch treat initial at 3 gal / diameter-inch / mile with subsequent as low as 0.862 gallons / diameter- inch / mile.

### Shipping and Handling

CST-86421 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-86421.

**UN1993, Flammable Liquid, N.O.S.**



## CST-8651 Water Soluble Corrosion Inhibitor Water Clarifier

### Generic Description

**CST-8651** is an alkyl pyridine benzyl quaternary ammonium chloride, non-ionic and anionic surfactant concentrate.

### General Information

**CST-8651** is an 80% active solution in methanol and water. It is a corrosion inhibitor which is oil dispersible and water soluble. It is a highly cationic amine compound used to formulate corrosion preventatives for use in oil or gas well production and gathering systems, and water flooding systems. **CST-8651** is highly effective in finding application for corrosion preventives in high temperature gas wells or refineries. It is an excellent corrosion inhibitor for continuous injection, batch treatment, truck treating or squeeze.

### Suggested Formulation

**CST-8651** may be used as is for high temperature gas wells (batch treatment dispersed in water), for pipeline batch treatment, oil wells pumping or flowing batch treatment. **CST-8651** can be used as any high density or weighted inhibitor. A high temperature stable diluted version can be prepared by dilution with triethylene glycol. The diluted version can be used for down hole continuous injection or pipeline treatment. A weighted inhibitor for sour systems can be done using **CST-8651** as 100% or dilution with triethylene glycol or hydroxylamines. **CST-8651** is typically diluted in water at 1 part to 1-4 parts water. **CST-8651** can be combined with phosphate esters, phosphonates, or polymers for combination scale inhibitor.

### Typical Physical Properties

Form, @ 77°F	Viscous Liquid
Density, (lbs/Gal)	8.4 to 8.8
Flash Point, °F (TCC)	101
Pour Point, °F	(-) 20
pH, (5% Solution)	8 to 9.5
Active Content %	80
Fresh Water	Soluble
Xylene	Insoluble
Isopropanol	Soluble
Kerosene	Insoluble

### Application Information

**CST-8651** at 100% is used for the high temperature gas wells, pipelines, oil wells, and a high density or weighted inhibitor. A diluted version of 20% **CST-8651** and 80% Methanol is used for down hole continuous injection or pipeline treatment. This is usually used for continuous treatment of pipelines. This version is typically for downhole batch or squeeze treatments of gas or oil wells or high water producing water source or injection wells. **CST-8651** is used as a packer fluid corrosion inhibitor at 500 to 10,000 ppm. **CST-8651** works as a corrosion inhibitor / water clarifier in waterfloods at 25 to 100 ppm with occasional slug treatment.

### Shipping and Handling

**CST-8651** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. This chemical may cause severe skin irritation and passage of this material into the body through the skin is possible. In case of skin or eye contact, flush exposed area with copious amounts of water for a minimum of 15 minutes. If chemical is released or spilled extinguish any possible ignition source until the area is determined to be free from fire or explosion hazard. Absorb the spill with inert material, such as dry sand or earth, then place in a chemical waste container. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8651**.

**UN1993, Flammable Liquid, N.O.S.**

TDS-0697

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## **CST-8653** **Corrosion Inhibitor** **Intermediate**

### **Generic Description**

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**CST-8653** is a tall oil imidazoline.

### **General Information**

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**CST-8653** is a corrosion inhibitor intermediate designed for use in formulating corrosion inhibitors. The product is un-neutralized imidazoline that may be used to produce amine salts. **CST-8653** provides a tenacious corrosion inhibitor film that is effective in the presence of both CO<sub>2</sub> and H<sub>2</sub>S. These properties make the product an excellent choice for use in a variety of oil field applications. **CST-8653** may be salted with a variety of acids to produce a finished product of various solubilities. Formulations with acetic or hydroxyacetic acids will produce a water soluble or water dispersible product. Dimer trimer acids may be used to produce an oil soluble or oil insoluble, water dispersible product.

### **Suggested Formulation**

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**CST-8653** can be formulated with an acid to provide a finished product. For a water soluble blend, it is recommended that 20% of the product be formulated with glacial acetic acid to a pH of 7.5 to 8.0 in water and isopropyl alcohol. Care should be taken with all neutralizations as this reaction will generate heat. Blend 300 parts with 60 parts of acetic acid in alcohol/water.

**CST-8653** can be diluted in alcohol or aromatic solvent for use. A good general purpose oil soluble corrosion inhibitor may be formulated by blending 10% isopropyl alcohol and aromatic solvent. Blend 300 parts **CST-8653** with 640 parts **CST-8875** in aromatic solvent. Add 1 to 3% surfactant, emulsion breaker.

### **Typical Physical Properties**

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<b>Form, @ 70°F</b>	Liquid
<b>Density,</b>	7.5 – 8.3
<b>Flash Point, °F (Open Cup)</b>	320

### **Application Information**

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The water soluble suggested blend with **CST-8653** will provide a water soluble corrosion inhibitor suitable for application by continuous methods. This blended product should be used at a rate of 5 to 30 ppm depending on the severity of the corrosion problem.

When continuously injected into wet gas systems, the product should be used at a rate of 0.5 to 1.0 pint per MMCF of natural gas. This water soluble formulation finds application in producing oil and gas wells, water injection systems and gas transmission systems.

Batch treatments with the oil soluble formulation of **CST-8653** should be applied at a rate of 20 to 50 ppm. The casing should be pre-wet with lease water and adequate flush applied after the treatment to assure the chemical reaches the bottom of the well. To establish an initial corrosion inhibitor film on down hole equipment, this product should be batched into the well and the well put on circulation for 4 to 6 hours. A good rule of thumb is to use one gallon of this formulated product for every 4,000 feet of well depth in this initial treatment, with one gallon of formulated **CST-8653** as a minimum quantity.

### **Shipping and Handling**

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**CST-8653** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8653**.

**Bulk: UN1760, Corrosive Liquid, N.O.S.**

TDS-0697

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## CST-8701 Water Dispersible Corrosion Inhibitor

### Generic Description

**CST-8701** is an alkyl pyridine benzyl quaternary ammonium chloride, non-ionic and anionic surfactant blend. **CST-8701** is an 80% active solution in methanol and water.

### General Information

**CST-8701** is a non-emulsifying corrosion inhibitor that is oil dispersible and water dispersible. **CST-8701** is a highly cationic amine compound used to formulate corrosion preventatives for use in oil or gas well production and gathering systems, and water flooding systems. **CST-8701** is highly effective in finding application for corrosion preventives in high temperature gas wells or refineries. **CST-8701** is an excellent corrosion inhibitor for continuous injection, batch treatment, truck treating or squeeze.

### Suggested Formulation

**CST-8701** may be used as is for high temperature gas wells (batch treatment dispersed in water), for pipeline batch treatment, oil wells pumping or flowing batch treatment. **CST-8701** can be used as any high density or weighted inhibitor. A high temperature stable diluted version can be prepared by dilution with triethylene glycol. The diluted version can be used for down hole continuous injection or pipeline treatment. A weighted inhibitor for sour systems can be done using **CST-8701** as 100% or dilution with triethylene glycol or hydroxyamines.

### Typical Physical Properties

Form, @ 77°F	Viscous Liquid
Density, (lbs/Gal)	8.4 to 8.8
Flash Point, °F (TCC)	55 - 60
pH, (5% Solution)	5.5 – 6.5
Solubility, 10% in:	
Fresh Water	Dispersible
Xylene	Insoluble
Isopropanol	Soluble
Kerosene	Insoluble

### Application Information

**CST-8701** at 100% is used for the high temperature gas wells, pipelines, oil wells, and a high density or weighted inhibitor. A diluted version of 20% **CST-8701** and 80% Methanol is used for down hole continuous injection or pipeline treatment. The typical blend is 49% **CST-8701** with 15% Isopropanol and 36% water by volume. This is usually used for continuous treatment of pipelines. The other diluted version is 15% **CST-8701** with 25% Methanol, 31.25% Isopropanol and 18.75% water. This version is typically for downhole batch or squeeze treatments of gas or oil wells or high water producing water source or injection wells.

### Shipping and Handling

**CST-8701** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. This chemical may cause severe skin irritation and passage of this material into the body through the skin is possible. In case of skin or eye contact, flush exposed area with copious amounts of water for a minimum of 15 minutes. If chemical is released or spilled extinguish any possible ignition source until the area is determined to be free from fire or explosion hazard. Absorb the spill with inert material, such as dry sand or earth, then place in a chemical waste container. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8701**.

**UN1993, Flammable Liquid, N.O.S.**

TDS-0697

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## CST-8702 Corrosion Inhibitor

### Generic Description

CST-8702 is an anionic K<sup>+</sup> salt of diphosphate ester.

### General Information

CST-8702 is a 52-58% active potassium salt of a glycol phosphate ester designed as a corrosion inhibitor for use in water-based drilling systems. CST-8702 is an anodic inhibitor and controls general and pitting corrosion for oxygen, hydrogen, sulfide, and carbon dioxide. CST-8702 contains a phosphonate scale inhibitor.

### Application Information

The components of water-based drilling fluids are not usually corrosive, but the degradation of organic additives by high temperatures or bacteria may result in corrosive products. Contamination by acid gases, such as carbon dioxide or hydrogen sulfide, and by formation brines can also cause severe corrosion.

CST-8702 can be used in foam or air mist systems without offsetting drilling fluid properties.

CST-8702 can be batched or added continuously during drilling. This product does not contain ammonium salts or hydrochloride and is biodegradable.

Maintain PO<sub>4</sub> at 50 ppm or above. If powder forms, presence is good. If dense scale occurs, slug treat with more CST-8702 to remove.

CST-8702 is non lubricating.

### Typical Physical Properties

Form,	Amber Liquid
Density, (lbs/Gal)	11.75-12.00
Flash Point, °F (TCC)	none
Pour Point, °C	(-) 18
pH, (neat)	7 to 9
Active Content %	52-58
Specific Gravity @77°F	1.41 to 1.44
Solubility, 10% in:	
Fresh Water	Soluble
Xylene	Insoluble
Isopropanol	Insoluble
Kerosene	Insoluble
50-70% Potassium Formate	Soluble

### Suggested Formulation

Optimum treatment will vary depending on the specific application. Generally, CST-8702 should be maintained at concentrations of 500 to 2000 ppm in most systems.

CST-8702 use formula as is or dilute with water.

### Shipping and Handling

CST-8702 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-8702.

### Non Regulated, Non Hazardous

TDS-0697

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## CST-8875 Corrosion Inhibitor Intermediate

### Generic Description

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CST-8875 is a dimer trimer acid

### General Information

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CST-8875 is a thermally dimerized, dark tall oil fatty acid containing approximately 45% C<sub>36</sub> dimer and 30% longer polymerized fatty acids. It is used as an anti-corrosion additive for oil well formulations, gasoline, and other products.

CST-8875 is ineffective against CO<sub>2</sub> and moderate H<sub>2</sub>S concentrations.

CST-8875 forms platelets of film.

### Suggested Formulation

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Prepare dilutions at about 15 to 35% in mixture of xylene or aromatic naphtha and methanol about 50:50.

A surfactant as CST TA-20 or CST-3420 formulate 64 parts CST-8875 with 30 parts of imidazoline or amide in aromatic solvent with surfactant.

### Typical Physical Properties

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Form,	Liquid
Density, (lbs/Gal)	8.1
Moisture, % (Karl Fischer)	0.2 Max
Acid Number, (ASTM D465-92)	135-145
Solubility In,	
Methanol	Soluble
Aliphatic Hydrocarbons	Soluble

### Application Information

---

CST-8875 can be used to batch treat at about 35 ppm based on interval to total fluid production.

Treat continuous at about 24 to 36 ppm for oil wells and oil or gas lines.

### Shipping and Handling

---

CST-8875 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-8875.

#### Non-Regulated in Non-Bulk

**Bulk: UN3257, Elevated Temperature Liquid, N.O.S.**

TDS-0697

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## CST-8895 Corrosion Inhibitor Intermediate

### Generic Description

---

CST-8895 is a dimer trimer diacid

### General Information

---

CST-8895 is a thermally dimerized, dark tall oil fatty acid containing approximately 45% C<sub>36</sub> dimer and 30% longer polymerized fatty acids. It is used as an anti-corrosion additive for oil well formulations, gasoline, and other products.

CST-8895 is ineffective against CO<sub>2</sub> and moderate H<sub>2</sub>S concentrations.

CST-8895 forms platelets of film.

### Suggested Formulation

---

Prepare dilutions at about 15 to 35% in mixture of xylene or aromatic naphtha and methanol about 50:50.

A surfactant as CST TA-20 or CST-3420 formulate 64 parts CST-8895 with 30 parts of imidazoline or amide in aromatic solvent with surfactant.

### Typical Physical Properties

---

Form,	Liquid
Density, (lbs/Gal)	8.1
Flash Point, (COC)	< 450°F
Moisture, % (Karl Fischer)	0.2 Max
Acid Number, (ASTM D465-92)	160-175
Solubility In,	
Methanol	Soluble
Aliphatic Hydrocarbons	Insoluble

### Application Information

---

CST-8895 can be used to batch treat at about 35 ppm based on interval to total fluid production.

Treat continuous at about 24 to 36 ppm for oil wells and oil or gas lines

### Shipping and Handling

---

CST-8895 is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of CST-8895.

#### Non-Regulated in Non-Bulk

**Bulk: UN3257, Elevated Temperature Liquid, N.O.S.**

TDS-0697

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## CST-8901 Water Dispersible Corrosion Inhibitor

### Generic Description

**CST-8901** is an alkyl pyridine benzyl quaternary ammonium chloride, non-ionic and anionic surfactant blend.

### General Information

**CST-8901** is a 76% active solution in methanol and water. **CST-8901** is a high temperature non-emulsifying corrosion inhibitor that is oil dispersible and water dispersible. It **CST-8901** is a highly cationic amine compound used to formulate corrosion preventatives for use in oil or gas well production and gathering systems, and water flooding systems. **CST-8901** is a surface penetrant and wetting agent that is designed for high partial pressures of CO<sub>2</sub> and H<sub>2</sub>S.

### Suggested Formulation

**CST-8901** is highly effective in finding application for corrosion preventives in high temperature gas wells or refineries. It is an excellent corrosion inhibitor for continuous injection, batch treatment, truck treating, squeeze, or flowing batch treatment. **CST-8901** can be used as any high density or weighted inhibitor. A high temperature stable diluted version can be prepared by dilution with triethylene glycol. The diluted version can be used for down hole continuous injection or pipeline treatment. A weighted inhibitor for sour systems can be done using **CST-8901** as 100% or dilution with triethylene glycol or hydroxyamines.

### Typical Physical Properties

Form, @ 77°F	Viscous Liquid
Density, (lbs/Gal)	8.5 to 8.8
Flash Point, °F (TCC)	101
pH, (5% Solution)	7 to 9
Solubility, 10% in:	
Fresh Water	Dispersible
Xylene	Insoluble
Isopropanol	Soluble
Kerosene	Insoluble

### Application Information

**CST-8901** at 100% is used for the high temperature gas wells, pipelines, oil wells, and a high density or weighted inhibitor. A diluted version of 20% **CST-8901** and 80% Methanol is used for down hole continuous injection or pipeline treatment. The typical blend is 49% **CST-8901** with 15% Isopropanol and 36% water by volume. This is usually used for continuous treatment of pipelines. The other diluted version is 15% **CST-8901** with 25% Methanol, 31.25% Isopropanol and 18.75% water. This version is typically for downhole batch or squeeze treatments of gas or oil wells or high water producing water source or injection wells. Batch treat and flush with water or brine for maximum film strength. Use 250 to 150 ppm in gas lines bored on the water. Use as received, neat, or at 3 gallons / diameter – inch / mile. Reduce to 0.862 gallons / diameter – inch / mile for subsequent treatments.

### Shipping and Handling

**CST-8901** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. This chemical may cause severe skin irritation and passage of this material into the body through the skin is possible. In case of skin or eye contact, flush exposed area with copious amounts of water for a minimum of 15 minutes. If chemical is released or spilled extinguish any possible ignition source until the area is determined to be free from fire or explosion hazard. Absorb the spill with inert material, such as dry sand or earth, then place in a chemical waste container. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8901**.

**UN1993, Flammable Liquid, N.O.S.,**

TDS-0697

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## CST-8911 Gas Control Hydrate

### Generic Description

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**CST-8911** is an alkyl quaternary chloride.

### General Information

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**CST-8911** kinetic hydrate inhibitor is a water soluble, proprietary formulation designed to inhibit the formation of gas clathrate molecules (commonly called "hydrates") in systems producing or handling natural gas and crude oil.

### Other Information

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**Feature:** Water soluble formulation

**Benefit:** Inhibits via the phase that forms the hydrate molecules

**Feature:** Effective at lower concentrations than methanol

**Benefit:** Reduces expenses and product handling requirements

**Feature:** Winterized formulation

**Benefit:** Effectively controls seasonal problems with hydrates in all climates.

#### Suitable:

Metals: admiralty brass, aluminum, copper, mild steel, 304 stainless steel, 316 stainless steel

Plastics: HD polyethylene, PVC, fiberglass, TEFLON, PLEXIGLAS, HD polypropylene

Elastomers: Buna N (rubber), neoprene, HYPALON

#### Not Suitable:

Metals:

Plastics: polyurethane

Elastomers: VITON

### Typical Physical Properties

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<b>Appearance</b>	Liquid, water-white
<b>Density, #/gal.</b>	7.2 – 7.6
<b>Flash Point, (TCC)</b>	56 F

### Application Information

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**CST-8911** is typically applied by injection upstream in the system, well ahead of the areas experiencing problems associated with hydrate deposition. This allows the product time to disperse into the aqueous phase and inhibit the formation of hydrates that occur due to pressure and temperature conditions.

**CST-8911** should be injected continuously into a system that has had the hydrate deposition removed immediately prior to usage. Typical dosages should begin at the upper range at about 20% (200,000 ppm) based on the amount of water present. Optimization of the product in the system should reduce consumption of the **CST-8911** even further, to about 5% - 10% (50,000 to 100,000 ppm) based on the amount of water present. Much of the product usage will depend upon the extremes of pressure and temperature encountered in the system.

### Shipping and Handling

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**CST-8911** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-8911**.

**UN1993, Flammable Liquid, N.O.S.**

TDS-0697

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## CST-CD Corrosion Inhibitor Intermediate Water Clarifier

### Generic Description

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**CST-CD** technical grade of coco diamine produced from fractionated fatty acid.

### General Information

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**CST-CD** is corrosion inhibitor intermediate and water clarifier for oil.

**CST-CD** can be modified with acetic acid to create a water dispersible/soluble strong oil wetting surfactant.

**CST-CD** disturbs bacterial growth.

**CST-CD** can be combined with other organic acids such as benzoic, etc.

**CST-CD** salts have varying water – brine solubility depending on free amine remaining in the salt. A balanced salt is typically acid neutral, about pH 4.5 in aqueous solution.

### Application Information

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**CST-CD** finds a wide use in a variety of industrial applications requiring high surface activity and cationic properties. It can be used as an additive in corrosion inhibitors, biocides, pigment dispersants, and protective coating applications.

**CST-CD** can be used as an intermediate in the manufacture of quaternary ammonium compounds, amine salts, or oxyalkylated surfactants.

### Typical Physical Properties

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<b>Form</b>	Liquid
<b>Density, (lbs/Gal)</b>	7.01
<b>Flash Point, °F (COC)</b>	235
<b>Amine Number</b>	408 min
<b>Iodine Value</b>	12 max
<b>Color, Gardner</b>	5 max
<b>Moisture, %</b>	1.0 max

### Shipping and Handling

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**CST-CD** is classified as Class 8 material according to U.S. Department of Transportation. It is shipped in 55 gallon, open-top steel drums 1A1 or in Bulk. Material Safety Sheets are available upon request or will be forwarded upon the purchase of **CST-CD**.

**UN2735, Amines, Liquid, Corrosive, N.O.S.**

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TDS-0697

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## CST-MAS Corrosion Inhibitor Intermediate

### Generic Description

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**CST-MAS** is an amine sulfur salt.

### General Description

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**CST-MAS** is 67% active in Methanol and Isopropanol. It can diluted in water at 10-50% base, and water. Alcohol or glycols or glycol ethers are only added for stability in warm weather, or to control freeze point. **CST-MAS** assists to control microbial growth by competition for metal or solid surfaces. It controls abrasion or erosion-corrosion due to sand, etc. **CST-MAS** disperses solids and sand and corrosion by-products. It assists to remove solids from metal surfaces and to de-oil solids

### Application Information

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**CST-MAS** assists to control microbial growth by competition for metal or solid surfaces. It controls abrasion or erosion-corrosion due to sand, etc.

**CST-MAS** disperses solids, sand and corrosion by-products. It assists to remove solids from metal surfaces and to de-oil solids. It can be used to treat downhole tubular, wellheads, flowlines, dry gas lines, and water injection systems. Not normally used in water injections as very oily. It finds applications in capillary applications or in gas injection systems.

**CST-MAS** works in very low doses, <24ppm, sometimes <10ppm.

**CST-MAS** can be used with phosphonates to form combinations corrosion / scale inhibitor.

### Typical Physical Properties

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<b>Appearance</b>	Liquid
<b>Density, @20°C</b>	8.0 – 8.4
<b>pH,</b>	3 - 5
<b>Flash Point, (Closed Cup)</b>	54 °F - 86°F
<b>Solubility, in Water</b>	Soluble

### Shipping and Handling

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**CST-MAS** is available in 55 gallon drums and bulk tank wagons. As with any individual chemical, avoid prolonged contact with skin. In case of skin or eye contact, flush exposed area with copious amounts of water. A material safety data sheet outlining proper handling of this product is available upon request, or will be forwarded upon the purchase of **CST-MAS**.

**UN2924, Flammable Liquid, Corrosive Material, N.O.S.**

TDS-0697

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## CST-TD Corrosion Inhibitor Intermediate

### Generic Description

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**CST-TD** technical grade of tallow diamine produced from tallow fatty acid.

### General Information

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**CST-TD** is a strong oil wetting corrosion inhibitor intermediate that is thermally stable. **CST-TD** can be modified with dimer trimer acids for heavy filmers or acetic acid and other low molecular weight organic salts to form water soluble corrosion inhibitors. Neutral salts of low molecular weight organic acids have a pH of about 4.5, acid neutral.

### Application Information

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**CST-TD** finds a wide use in a variety of industrial applications requiring high surface activity and cationic properties, pulp, and paper additive. It can be used as an additive in corrosion inhibitors, asphalt emulsification, lubricating oils, pigment dispersants, and protective coating applications. **CST-TD** can be used as an intermediate in the manufacture of quaternary ammonium compounds, amine salts, or oxyalkylated surfactants.

### Typical Physical Properties

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<b>Form</b>	Paste
<b>Density, (lbs/Gal)</b>	7.13
<b>Flash Point, °F (COC)</b>	320
<b>Amine Number</b>	330-340
<b>Iodine Value</b>	30 min.
<b>Color, Gardner</b>	5 max
<b>Moisture, %</b>	1.0 max
<b>pH, (5%) in 3:1 IPA/water</b>	11 - 12

### Shipping and Handling

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**CST-TD** is classified as Class 8 material according to U.S. Department of Transportation. It is shipped in 55 gallon, open-top steel drums 1A1 or in Bulk. Material Safety Sheets are available upon request or will be forwarded upon the purchase of **CST-TD**.

**UN2735, Amines, Liquid, Corrosive, N.O.S.**

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TDS-0697

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