



Conlen Surfactant Technology

Specialty Chemical Manufacturing, Marketing, & Distribution



Foamer 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

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-4014	Foamer Concentrate	Anionic & amphoteric concentrate
CST-4021 C	Foamer	Amphoteric
CST-4040	Foamer Concentrate	Anionic & amphoteric concentrate
CST-4050	Acid Foamer Concentrate	Amphoteric surfactant concentrate
CST-4062	Surfactant Concentrate	Ethoxylated alcohol ether sulfate
CST-4072	Surfactant Concentrate	Ethoxylated alcohol ether sulfate
CST-4075	Surfactant Concentrate	Ethoxylated alcohol ether sulfate formulated with amphoteric foam boosters and enhancers
CST-4085	Surfactant Concentrate	100 % active, ethoxylated alcohol ether sulfate
CST-4247	Foamer Concentrate	Ethoxylated alcohol ether sulfate
CST-4411	Foamer	Anionics, ether sulfates, and amphoterics
CST-4562	STR (Surface Tension Reducer)	Modified silicone
CST-4670	Foamer Concentrate	Anionic and Zwitterion surfactant concentrate
CST-4760	Slick Water Friction Reducer	Modified PHPA (acrylamide)

Foamer Series



CST-4040 Surfactant Concentrate

Generic Description

CST-4040 surfactant concentrate is an ethoxylated alcohol ether sulfate formulated with amphoteric foam boosters and enhancers.

General Information

CST-4040 surfactant concentrate is a foaming agent concentrate designed for use in formulating foaming agents for air mist and stable foam drilling, gas well de-watering and in the manufacturing of gas well de-watering foam sticks.

Formulations containing **CST-4040** provide high performance foaming agents that produce superior foam quality and stability in a wide variety of fluids and field conditions. **CST-4040** formulations are recommended for use in fresh water, KCl and field brines with chloride concentrations in excess of 150,000 mg/L. The product also exhibits good stability to down hole hydrocarbon influx.

Suggested Formulation

CST-4040 should be blended with water and alcohol to meet the desired application of the formulator. To produce a high quality, broad spectrum foaming agent for air mist / stable foam drilling, a suggested formulation is to blend 25 to 30 gallons of **CST-4040** with 10 gallons of alcohol in water. Butyl cellosolve is recommended as a portion of the alcohol to enhance hydrocarbon tolerance.

A cost effective gas well de-watering foamer may be formulated utilizing 10 to 15 gallons of **CST-4040** with alcohol and water. As well as being excellent for high temperature capillary systems.

Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	8.4
Flash Point, °F (TCC)	111
Pour Point, °F	+10
pH, (10% Solution)	8.5-9.0
Ionic Charge	Anionic
Solubility	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Dispersible

Application Information

The suggested drilling formulation should be used at a typical concentration of 0.1% to 0.5% (0.5 to 2 gallons / 10 barrels) in air mist drilling operations, with 0.75% TO 2.0% (3 to 8 gallons/ 10 barrels) recommended for stable foam drilling operations. The formulated product may be metered into the mist fluid with a chemical pump, or simply poured into the mist tank and mixed with make up fluids. This product may be used with compressed air, nitrogen, carbon dioxide or natural gas drilling operations.

In gas well de-watering, the second formulations may be used continuously, or simply batch treated into gas wells on a regular basis. Typical continuous injection rates are 4 to 10 gallons of the formulated product per 100 barrels of water to be removed. When applied by batch treatment, the formulated product should be poured into the well through a lubricator. Typical use rates range from 2 to 10 gallons per well. Adequate flush should be provided to assure the product reaches the bottom of the hole.

Shipping and Handling

CST-4040 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-4040**.

UN1993, Flammable Liquids, N.O.S.

TDS-0697

The information in this bulletin is believed to be accurate, but all recommendations are made without warranty, since the conditions of use are beyond the manufacturer's control. The listed properties are illustrative only, and not product specifications. The manufacturer disclaims any liability in connection with the use of the information, and does not warrant against infringement by reason of the use of any of its products in combination with other materials or in any process.



CST-4050 Acid Foamer Concentrate

Generic Description

CST 4050 is an amphoteric surfactant concentrate.

General Information

CST-4050 surfactant concentrate is a high activity amphoteric surfactant designed for use in formulating foaming agents for air mist and stable foam drilling, gas well de-watering, stimulation treatments and in the manufacturing of gas well de-watering foam sticks.

Application Information

The suggested stimulation treatment formulation should be used at a typical acidizing and fracturing applications.

Typical drilling use concentrations range from 0.1 to 0.5% (0.5 to 2 gallons/ 10 barrels) in air mist drilling operations, with 0.75% to 2.0% (3 to 8 gallons / 10 barrels) recommended for stable foam drilling operations. The formulated product may be metered into the mist fluid with a chemical pump, or simply poured into the mist tank and mixed with make up fluids. This product may be used with compressed air, nitrogen, carbon dioxide or natural gas drilling operations.

In gas well de-watering, the second formulations may be used continuously, or simply batch treated into gas wells on a regular basis. Typical continuous injection rates are 4 to 10 gallons of the formulated product per 100 barrels of water to be removed. When applied by batch treatment, the formulated product should be poured into the well through a lubricator. Typical use rates range from 2 to 10 gallons per well. Adequate flush should be provided to assure the product reaches the bottom of the hole.

Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	9.4
Flash Point, °F (TCC)	110
Pour Point, °F	+10
pH, (10% Solution)	7.5-8.5
Ionic Charge	Amphoteric
Solubility	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Dispersible

Suggested Formulation

CST-4050 may be blended with water and alcohol to provide an amphoteric/nonionic foaming agent for stimulation treatments. Typical formations contain 20 to 30 gallons of CST-4050. To produce a high quality, broad spectrum foaming agent for air mist/stable foam drilling, a suggested formulation is to blend 5 to 10 gallons of CST-4050 with 20 to 25 gallons of alcohol ether sulfate, such as CST-4062 or CST-4865, in alcohol in water. Butyl cellosolve is recommended as a portion of the alcohol to enhance hydrocarbon tolerance. For gas well de-watering this formulation should be cut 50:50 with water. Formulations containing CST-4050 provides high performance foaming agents that produce superior foam quality and stability in a wide variety of fluids and field conditions. CST-4050 formulations are recommended for use in fresh water, KCl and field brines with chloride concentrations up to 150,000 mg/L. The product also exhibits good stability to down hole hydrocarbon influx.

Shipping and Handling

CST-4050 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-4050.

Non-Regulated / Non-Hazardous

TDS-0697

The information in this bulletin is believed to be accurate, but all recommendations are made without warranty, since the conditions of use are beyond the manufacturer's control. The listed properties are illustrative only, and not product specifications. The manufacturer disclaims any liability in connection with the use of the information, and does not warrant against infringement by reason of the use of any of its products in combination with other materials or in any process.



Conlen Surfactant Technology

14292 Koalstad Rd | Conroe, TX 77302 | Tel: 936-231-3004 | Fax: 936-231-3002
E-mail: sales@csttexas.com | Website: www.csttexas.com

CST-4062 Surfactant Concentrate

Generic Description

CST 4062 surfactant concentrate is an ethoxylated alcohol ether sulfate.

General Information

CST-4062 surfactant concentrate is a foaming agent concentrate designed for use in formulating foaming agents for air mist and stable foam drilling, gas well de-watering and in the manufacturing of gas well de-watering foam sticks.

Formulations containing **CST-4062** provide high performance foaming agents that produce superior foam quality and stability in a wide variety of fluids and field conditions. **CST-4062** formulations are recommended for use in fresh water, KCl and field brines with chloride concentrations up to 150,000 mg/L. The product also exhibits good stability to down hole hydrocarbon influx.

Application Information

The suggested drilling formulation should be used at a typical concentration of 0.1% to 0.5% (0.5 to 2 gallons / 10 barrels) in air mist drilling operations, with 0.75% TO 2.0% (3 to 8 gallons/ 10 barrels) recommended for stable foam drilling operations. The formulated product may be metered into the mist fluid with a chemical pump, or simply poured into the mist tank and mixed with make up fluids. This product may be used with compressed air, nitrogen, carbon dioxide or natural gas drilling operations.

In gas well de-watering, the second formulations may be used continuously, or simply batch treated into gas wells on a regular basis. Typical continuous injection rates are 4 to 10 gallons of the formulated product per 100 barrels of water to be removed. When applied by batch treatment, the formulated product should be poured into the well through a lubricator. Typical use rates range from 2 to 10 gallons per well. Adequate flush should be provided to assure the product reaches the bottom of the hole.

TDS-0697

The information in this bulletin is believed to be accurate, but all recommendations are made without warranty, since the conditions of use are beyond the manufacturer's control. The listed properties are illustrative only, and not product specifications. The manufacturer disclaims any liability in connection with the use of the information, and does not warrant against infringement by reason of the use of any of its products in combination with other materials or in any process.

Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	8.5
Flash Point, °F (TCC)	110
Pour Point, °F	+10
pH, (10% Solution)	8.5-9.0
Ionic Charge	Anionic
Solubility	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Dispersible

Suggested Formulation

CST-4062 should be blended with water and alcohol to meet the desired application of the formulator. To produce a high quality, broad spectrum foaming agent for air mist / stable foam drilling, a suggested formulation is to blend 25 to 30 gallons of **CST-4062** with 10 gallons of alcohol in water. Butyl cellosolve is recommended as a portion of the alcohol to enhance hydrocarbon tolerance.

A cost effective gas well de-watering foamer may be formulated utilizing 10 to 15 gallons of **CST-4062** with alcohol and water.

Shipping and Handling

CST-4062 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-4062**.

Bulk: NA1993, Combustible Liquid, N.O.S



CST-4072 Surfactant Concentrate

Generic Description

CST 4072 surfactant concentrate is an ethoxylated alcohol ether sulfate.

General Information

CST-4072 surfactant concentrate is a foaming agent concentrate designed for use in formulating foaming agents for air mist and stable foam drilling, gas well de-watering and in the manufacturing of gas well de-watering foam sticks.

Formulations containing **CST-4072** provide high performance foaming agents that produce superior foam quality and stability in a wide variety of fluids and field conditions. **CST-4072** formulations are recommended for use in fresh water, KCl and field brines with chloride concentrations in excess of 150,000 mg/L. The product also exhibits good stability to down hole hydrocarbon influx.

Application Information

The suggested drilling formulation should be used at a typical concentration of 0.1% to 0.5% (0.5 to 2 gallons / 10 barrels) in air mist drilling operations, with 0.75% TO 2.0% (3 to 8 gallons/ 10 barrels) recommended for stable foam drilling operations. The formulated product

may be metered into the mist fluid with a chemical pump, or simply poured into the mist tank and mixed with make up fluids. This product may be used with compressed air, nitrogen, carbon dioxide or natural gas drilling operations.

In gas well de-watering, the second formulations may be used continuously, or simply batch treated into gas wells on a regular basis. Typical continuous injection rates are 4 to 10 gallons of the formulated product per 100 barrels of water to be removed. When applied by batch treatment, the formulated product should be poured into the well through a lubricator. Typical use rates range from 2 to 10 gallons per well. Adequate flush should be provided to assure the product reaches the bottom of the hole.

TDS-0697

The information in this bulletin is believed to be accurate, but all recommendations are made without warranty, since the conditions of use are beyond the manufacturer's control. The listed properties are illustrative only, and not product specifications. The manufacturer disclaims any liability in connection with the use of the information, and does not warrant against infringement by reason of the use of any of its products in combination with other materials or in any process.

Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	8.48
Flash Point, °F (TCC)	110
Pour Point, °F	+10
pH, (10% Solution)	8.5-9.0
Ionic Charge	Anionic
Solubility	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Dispersible

Suggested Formulation

CST-4072 should be blended with water and alcohol to meet the desired application of the formulator. To produce a high quality, broad spectrum foaming agent for air mist / stable foam drilling, a suggested formulation is to blend 25 to 30 gallons of **CST-4072** with 10 gallons of alcohol in water. Butyl cellosolve is recommended as a portion of the alcohol to enhance hydrocarbon tolerance.

A cost effective gas well de-watering foamer may be formulated utilizing 10 to 15 gallons of **CST-4072** with alcohol and water.

Shipping and Handling

CST-4072 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-4072**.

Bulk: NA1993, Combustible Liquid, N.O.S



CST-4075 Surfactant Concentrate

Generic Description

CST-4075 surfactant concentrate is an ethoxylated alcohol ether sulfate formulated with amphoteric foam boosters and enhancers.

General Information

CST-4075 surfactant concentrate is a foaming agent concentrate designed for use in formulating foaming agents for air mist and stable foam drilling, gas well de-watering and in the manufacturing of gas well de-watering foam sticks. Formulations containing **CST-4075** provide high performance foaming agents that produce superior foam quality and stability in a wide variety of fluids and field conditions. **CST-4075** formulations are recommended for use in fresh water, KCl and field brines with chloride concentrations in excess of 150,000 mg/L. The product also exhibits good stability to down hole hydrocarbon influx.

Application Information

The suggested drilling formulation should be used at a typical concentration of 0.1% to 0.5% (0.5 to 2 gallons / 10 barrels) in air mist drilling operations, with 0.75% TO 2.0% (3 to 8 gallons/ 10 barrels) recommended for stable foam drilling operations. The formulated product may be metered into the mist fluid with a chemical pump, or simply poured into the mist tank and mixed with make up fluids. This product may be used with compressed air, nitrogen, carbon dioxide or natural gas drilling operations. In gas well de-watering, the second formulations may be used continuously, or simply batch treated into gas wells on a regular basis. Typical continuous injection rates are 4 to 10 gallons of the formulated product per 100 barrels of water to be removed. When applied by batch treatment, the formulated product should be poured into the well through a lubricator. Typical use rates range from 2 to 10 gallons per well. Adequate flush should be provided to assure the product reaches the bottom of the hole.

TDS-0697

The information in this bulletin is believed to be accurate, but all recommendations are made without warranty, since the conditions of use are beyond the manufacturer's control. The listed properties are illustrative only, and not product specifications. The manufacturer disclaims any liability in connection with the use of the information, and does not warrant against infringement by reason of the use of any of its products in combination with other materials or in any process.

Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	8.4
Flash Point, °F (TCC)	111
Pour Point, °F	+10
pH, (10% Solution)	8.5-9.0
Ionic Charge	Anionic
Solubility	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Dispersible

Suggested Formulation

CST-4075 should be blended with water and alcohol to meet the desired application of the formulator. To produce a high quality, broad spectrum foaming agent for air mist / stable foam drilling, a suggested formulation is to blend 25 to 30 gallons of **CST-4075** with 10 gallons of alcohol in water. Butyl cellosolve is recommended as a portion of the alcohol to enhance hydrocarbon tolerance.

A cost effective gas well de-watering foamer may be formulated utilizing 10 to 15 gallons of **CST-4075** with alcohol and water.

Shipping and Handling

CST-4075 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-4075**.

Bulk: NA1993, Combustible Liquid, N.O.S



CST-4085 Surfactant Concentrate

Generic Description

CST-4085 surfactant concentrate is an ethoxylated alcohol ether sulfate (100% active).

General Information

CST-4085 surfactant concentrate is a foaming agent concentrate designed for use in formulating foaming agents for air mist and stable foam drilling, gas well de-watering and in the manufacturing of gas well de-watering foam sticks.

Formulations containing **CST-4085** provide high performance foaming agents that produce superior foam quality and stability in a wide variety of fluids and field conditions. **CST-4085** formulations are recommended for use in; fresh water, KCl and medium brines (with chloride concentrations up to 150,000 mg/L). The product also exhibits good stability to down hole hydrocarbon influx.

Application Information

The suggested drilling formulation should be used at a typical concentration of 0.1% to 0.5% (0.5 to 2 gallons / 10 barrels) in air mist drilling operations, with 0.75% to 2.0% (3 to 8 gallons/ 10 barrels) recommended for stable foam drilling operations. The formulated product may be metered into the mist fluid with a chemical pump, or simply poured into the mist tank and mixed with make up fluids. This product may be used with compressed air, nitrogen, carbon dioxide or natural gas drilling operations.

In gas well de-watering, the second formulations may be used continuously, or simply batch treated into gas wells on a regular basis. Typical continuous injection rates are 4 to 10 gallons of the formulated product per 100 barrels of water to be removed. When applied by batch treatment, the formulated product should be poured into the well through a lubricator. Typical use rates range from 2 to 10 gallons per well. Adequate flush should be provided to assure the product reaches the bottom of the hole.

TDS-0697

The information in this bulletin is believed to be accurate, but all recommendations are made without warranty, since the conditions of use are beyond the manufacturer's control. The listed properties are illustrative only, and not product specifications. The manufacturer disclaims any liability in connection with the use of the information, and does not warrant against infringement by reason of the use of any of its products in combination with other materials or in any process.

Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	8.4
Flash Point, °F (TCC)	185
Pour Point, °F	+10
pH, (10% Solution)	8.5-9.0
Ionic Charge	Anionic
Solubility	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Dispersible

Suggested Formulation

CST-4085 should be blended with water and alcohol to meet the desired application of the formulator. To produce a high quality, broad spectrum foaming agent for air mist / stable foam drilling, a suggested formulation is to blend 25 to 30 gallons of **CST-4085** with 10 gallons of alcohol in water. Butyl cellosolve is recommended as a portion of the alcohol to enhance hydrocarbon tolerance.

A cost effective gas well de-watering foamer may be formulated utilizing 10 to 15 gallons of **CST-4085** with alcohol and water.

Shipping and Handling

CST-4085 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-4085**.

Non-Regulated / Non-Hazardous



CST-4247 Surfactant Concentrate

Generic Description

CST-4247 surfactant concentrate is an ethoxylated alcohol ether sulfate.

General Information

CST-4247 surfactant concentrate is a foaming agent concentrate designed for use in formulating foaming agents for air mist and stable foam drilling, gas well de-watering and in the manufacturing of gas well de-watering foam sticks.

Formulations containing **CST-4247** provide high performance foaming agents that produce superior foam quality and stability in a wide variety of fluids and field conditions. **CST-4247** formulations are recommended for use in fresh water, KCl and field brines with chloride concentrations up to 150,000 mg/L. The product also exhibits good stability to down hole hydrocarbon influx.

Application Information

The suggested drilling formulation should be used at a typical concentration of 0.1% to 0.5% (0.5 to 2 gallons / 10 barrels) in air mist drilling operations, with 0.75% TO 2.0% (3 to 8 gallons/ 10 barrels) recommended for stable foam drilling operations. The formulated product may be metered into the mist fluid with a chemical pump, or simply poured into the mist tank and mixed with make up fluids. This product may be used with compressed air, nitrogen, carbon dioxide or natural gas drilling operations.

In gas well de-watering, the second formulations may be used continuously, or simply batch treated into gas wells on a regular basis. Typical continuous injection rates are 4 to 10 gallons of the formulated product per 100 barrels of water to be removed. When applied by batch treatment, the formulated product should be poured into the well through a lubricator. Typical use rates range from 2 to 10 gallons per well. Adequate flush should be provided to assure the product reaches the bottom of the hole.

TDS-0697

The information in this bulletin is believed to be accurate, but all recommendations are made without warranty, since the conditions of use are beyond the manufacturer's control. The listed properties are illustrative only, and not product specifications. The manufacturer disclaims any liability in connection with the use of the information, and does not warrant against infringement by reason of the use of any of its products in combination with other materials or in any process.

Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	8.5
Flash Point, °F (TCC)	110
Pour Point, °F	+10
pH, (10% Solution)	8.5-9.0
Ionic Charge	Anionic
Solubility	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Dispersible

Suggested Formulation

CST-4247 should be blended with water and alcohol to meet the desired application of the formulator. To produce a high quality, broad spectrum foaming agent for air mist / stable foam drilling, a suggested formulation is to blend 25 to 30 gallons of **CST-4247** with 10 gallons of alcohol in water. Butyl cellosolve is recommended as a portion of the alcohol to enhance hydrocarbon tolerance.

A cost effective gas well de-watering foamer may be formulated utilizing 10 to 15 gallons of **CST-4247** with alcohol and water.

Shipping and Handling

CST-4247 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-4247**.

Bulk: NA1993, Combustible Liquid, N.O.S



CST-4411 Surfactant Concentrate

Generic Description

CST-4411 surfactant concentrate is an ethoxylated alcohol ether sulfate (100% active).

General Information

CST-4411 surfactant concentrate is a foaming agent concentrate designed for use in formulating foaming agents for air mist and stable foam drilling, gas well de-watering and in the manufacturing of gas well de-watering foam sticks.

Formulations containing **CST-4411** provide high performance foaming agents that produce superior foam quality and stability in a wide variety of fluids and field conditions. **CST-4411** formulations are recommended for use in; fresh water, KCl and medium brines (with chloride concentrations up to 150,000 mg/L). The product also exhibits good stability to down hole hydrocarbon influx.

Application Information

The suggested drilling formulation should be used at a typical concentration of 0.1% to 0.5% (0.5 to 2 gallons / 10 barrels) in air mist drilling operations, with 0.75% to 2.0% (3 to 8 gallons/ 10 barrels) recommended for stable foam drilling operations. The formulated product may be metered into the mist fluid with a chemical pump, or simply poured into the mist tank and mixed with make up fluids. This product may be used with compressed air, nitrogen, carbon dioxide or natural gas drilling operations.

In gas well de-watering, the second formulations may be used continuously, or simply batch treated into gas wells on a regular basis. Typical continuous injection rates are 4 to 10 gallons of the formulated product per 100 barrels of water to be removed. When applied by batch treatment, the formulated product should be poured into the well through a lubricator. Typical use rates range from 2 to 10 gallons per well. Adequate flush should be provided to assure the product reaches the bottom of the hole.

TDS-0697

The information in this bulletin is believed to be accurate, but all recommendations are made without warranty, since the conditions of use are beyond the manufacturer's control. The listed properties are illustrative only, and not product specifications. The manufacturer disclaims any liability in connection with the use of the information, and does not warrant against infringement by reason of the use of any of its products in combination with other materials or in any process.

Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	8.4
Flash Point, °F (TCC)	185
Pour Point, °F	+10
pH, (10% Solution)	8.5-9.0
Ionic Charge	Anionic
Solubility	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Dispersible

Suggested Formulation

CST-4411 should be blended with water and alcohol to meet the desired application of the formulator. To produce a high quality, broad spectrum foaming agent for air mist / stable foam drilling, a suggested formulation is to blend 25 to 30 gallons of **CST-4411** with 10 gallons of alcohol in water. Butyl cellosolve is recommended as a portion of the alcohol to enhance hydrocarbon tolerance.

A cost effective gas well de-watering foamer may be formulated utilizing 10 to 15 gallons of **CST-4411** with alcohol and water.

Shipping and Handling

CST-4411 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-4411**.

UN1992 Flammable Liquid, Toxic, N.O.S.



CST-4562 Surface Tension Reducer

Generic Description

CST-4562 is a modified silicone surface tension reducer

General Information

CST-4562 is a 100% active silicone polyether surfactant that provides exceptional wetting performance on many hydrophobic substrates.

Application Information

CST-4562 can be used to enhance the spreading and penetrating properties of adjuvants and emulsifiers and emulsifiers used in agricultural chemical applications. As little as 0.1% by weight of water is capable of producing a surface tension as low as 22 dynes/cm. The presence of additional surfactants, high or low pH and other components can affect the surface tension and spreading the performance. Be sure to thoroughly evaluate the CST-4562 prior to commercial use to confirm capability, system stability and lack of phytotoxicity.

CST-4562 finds use in the following applications:

- Pesticidal formulations
- Additive for spray tank adjuvants and crop oils
- Water based solutions where reduced surface tension, improved wetting, and spreading characteristics are required

Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	8.5
Flash Point, °F (TCC)	216

Features and Benefits

- Nonionic for maximum compatibility
- Provides extremely low surface tension and rapid water-wetting characteristics
- Very efficient wetting power

Shipping and Handling

CST-4562 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-4562.

Non-Regulated / Non-Hazardous

TDS-0697

The information in this bulletin is believed to be accurate, but all recommendations are made without warranty, since the conditions of use are beyond the manufacturer's control. The listed properties are illustrative only, and not product specifications. The manufacturer disclaims any liability in connection with the use of the information, and does not warrant against infringement by reason of the use of any of its products in combination with other materials or in any process.



Conlen Surfactant Technology

14292 Koalstad Rd | Conroe, TX 77302 | Tel: 936-231-3004 | Fax: 936-231-3002
E-mail: sales@csttexas.com | Website: www.csttexas.com

CST-4670 Surfactant Concentrate

Generic Description

CST-4670 surfactant concentrate is an ethoxylated alcohol ether sulfate formulated with amphoteric foam boosters and enhancers.

General Information

CST-4670 surfactant concentrate is a foaming agent concentrate designed for use in formulating foaming agents for air mist and stable foam drilling, gas well de-watering and in the manufacturing of gas well de-watering foam sticks.

Formulations containing **CST-4670** provide high performance foaming agents that produce superior foam quality and stability in a wide variety of fluids and field conditions. **CST-4670** formulations are recommended for use in fresh water, KCl and field brines with chloride concentrations in excess of 150,000 mg/L. The product also exhibits good stability to down hole hydrocarbon influx.

Application Information

The suggested drilling formulation should be used at a typical concentration of 0.1% to 0.5% (0.5 to 2 gallons / 10 barrels) in air mist drilling operations, with 0.75% TO 2.0% (3 to 8 gallons/ 10 barrels) recommended for stable foam drilling operations. The formulated product may be metered into the mist fluid with a chemical pump, or simply poured into the mist tank and mixed with make up fluids. This product may be used with compressed air, nitrogen, carbon dioxide or natural gas drilling operations.

In gas well de-watering, the second formulations may be used continuously, or simply batch treated into gas wells on a regular basis. Typical continuous injection rates are 4 to 10 gallons of the formulated product per 100 barrels of water to be removed. When applied by batch treatment, the formulated product should be poured into the well through a lubricator. Typical use rates range from 2 to 10 gallons per well. Adequate flush should be provided to assure the product reaches the bottom of the hole.

TDS-0697

The information in this bulletin is believed to be accurate, but all recommendations are made without warranty, since the conditions of use are beyond the manufacturer's control. The listed properties are illustrative only, and not product specifications. The manufacturer disclaims any liability in connection with the use of the information, and does not warrant against infringement by reason of the use of any of its products in combination with other materials or in any process.

Typical Physical Properties

Form, @ 70°F	Liquid
Density, (lbs/Gal)	8.4
Flash Point, °F (TCC)	111
Pour Point, °F	+10
pH, (10% Solution)	8.5-9.0
Ionic Charge	Anionic
Solubility	
Fresh Water	Soluble
High TDS Brine	Soluble
Isopropanol	Soluble
Xylene	Dispersible

Suggested Formulation

CST-4670 should be blended with water and alcohol to meet the desired application of the formulator. To produce a high quality, broad spectrum foaming agent for air mist / stable foam drilling, a suggested formulation is to blend 25 to 30 gallons of **CST-4670** with 10 gallons of alcohol in water. Butyl cellosolve is recommended as a portion of the alcohol to enhance hydrocarbon tolerance.

A cost effective gas well de-watering foamer may be formulated utilizing 10 to 15 gallons of **CST-4670** with alcohol and water.

Shipping and Handling

CST-4670 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-4670**.

UN1993, Flammable Liquids, N.O.S.



CST-4760 Emulsion Polymers

Product Features

- Anionic Emulsion Polymers
- Friction Reducer/Viscosifier/Clay Stabilizer
- Rapid Hydration & Yield
- Excellent Mud Flush Agent
- Slick Water Friction Reducer

General Description

CST-4760 is a medium molecular weight anionic emulsion polymers of partially hydrolyzed polyacrylamide. The product finds application in acidizing and well stimulation as a mud flush agent, friction reducer, clay stabilization agent and fresh water viscosifier. When properly applied under agitation **CST-4760** provides rapid hydration and yield with a minimum tendency for polymer balling and encapsulation.

Recommended Application

CST-4760 should be slowly added to the system at a point that assures maximum agitation and mixing. The product may be utilized alone, or as a component of a more complex anionic system. Care should be taken in mixing or over treatment can result in excessive viscosity, polymer balling and encapsulation. **CST-4760** is typically applied to aqueous based fluids at a rate of 0.5 to 2 gallons per thousand gallons of fluid. Maximum yield will be obtained after 15 to 30 minutes of mixing. The use of soda ash and/or caustic soda are recommended to control pH and calcium content. When added to fresh water this recommended loading rate will provide a fluid with a marsh funnel viscosity range of <45. Pilot testing is recommended to determine the optimum concentration of **CST-4760** to meet specific application needs. **CST-4760** does not build high viscosity or precipitate out. For slick water friction reduction use 0.5 to 2.0 GPT.

Typical Physical Properties

Flash Point, °F	>200
Form, 70°F	White Liquid
Density, (lbs/Gal)	8.66
Pour Point, °F	0
pH, (10% Solution)	6 - 8
Solubility	
Fresh Water	Dispersible
15% HCl	Dispersible
Hydrocarbon	Dispersible
Ionic Charge	Anionic

Storage and Handling

CST-4760 is available in 55 gallons drums, tote tanks, and bulk tank wagons. As with any industrial chemical, keep out of reach of children and avoid prolonged contact with skin and eyes. In case of skin or eye contact, flush the 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 the product.

Non-Regulated / Non-Hazardous

TDS-0697

The information in this bulletin is believed to be accurate, but all recommendations are made without warranty, since the conditions of use are beyond the manufacturer's control. The listed properties are illustrative only, and not product specifications. The manufacturer disclaims any liability in connection with the use of the information, and does not warrant against infringement by reason of the use of any of its products in combination with other materials or in any process.